Social License to Operate and the Sustainable Energy Transition

Andrew Gaynor & Stephen Walsh MIPI

Paper extracted from "'Pleanáil': Journal of the Irish Planning Institute" (Issue 23 :: 2018)

Abstract

This paper explores the concept of 'Social License to Operate' (SLO) and the sustainable energy transition in an Irish context through the lens of the Irish planning system. The deployment of renewable energy (RE) infrastructure, as a part of Ireland's transition to a low carbon economy, has not been a seamless process as communities in the receiving environment frequently mobilise effective campaigns of opposition which impact the State's obligations to decarbonise Ireland's energy sources. The purpose of this paper is to explore the concept of 'Social License to Operate' and relate it to an Irish context by exploring societal acceptance of RE infrastructure as illustrated by community objections to this form of development. The renewable energy technologies (RETs) considered in this paper are wind and solar energy. These two technologies are currently at different maturity levels in Ireland, however, similarities in the manner in which they are perceived by communities have influenced the nature and characteristics of the permissions and infrastructure granted and developed to date. This paper will conclude with a number of recommendations as potential measures for the enhancement of community acceptance of RETS in an Irish context.

1 Introduction

There is a clear imperative which guides the drive to deploy RETs in an Irish context. According to the Fifth Assessment Report conducted by the Intergovernmental Panel on Climate Change, it is now undeniable that the warming of the planet is the result of human behaviour (DCCAE, 2015). This is a result of the fact that our economies have been predominantly fuelled by carbon-intensive energy sources, meaning increased productivity has brought dangerously high levels of greenhouse gas (GHG) concentration in the atmosphere. The Stability Programme Update, published by the Department of Finance in early 2016, notes that Ireland is obliged to reduce its GHG emissions by 20 per cent (compared to 2005 levels) in certain sectors (DOF, 2016), through the retrofit of existing building stock to facilitate energy efficiency and the generation of RE. Ireland's Environmental Protection Agency (EPA) estimates that Ireland will not achieve this target and "may incur costs of hundreds of millions through the

purchase of carbon credits until such time as the target is complied with" (DOF; 2016, 28). In addition, further costs may be incurred to the National Exchequer as new emissions reduction targets will be set through the 2020-2030 EU climate and energy framework.

The above sets the scene in terms of the rationale which drives the need to deploy RETs in Ireland. The manner in which communities perceive and participate in the sustainable energy transition is critical to the success of Ireland's journey to becoming a low carbon economy. The concept of 'Social License to Operate' and the manner in which it may be used to quantify past community interaction with RE development and form a new paradigm for future development may serve planning practitioners and decision-makers as a mechanism for enhancing community participation, ownership and support of the development of RETs.

To date, one of the most instructive means by which SLO for RE development can be measured is through the Irish planning system. Irish planning and development legislation allows for pre-defined time periods for observations to be submitted for review during the planning application process. It is at this stage that developers learn of issues by way of submissions from the public and other stakeholders, and arguably, it is through planning application notices that a local community may first learn of a proposed development.

In the spirit of SLO, whereby consultation with the local community (and, indeed, broader stakeholders) is encouraged to occur at the earliest stage possible, pre-planning stages should act as an opportune moment for the developer to gauge both local sentiment toward relevant developments, and the degree of linkage (i.e. knowledge sharing) between the local planning authority and the community (which may indicate how informed a community is regarding the region's scope, or potential, for development). An understanding of the issues being articulated through this process may empower project promoters to address genuine concerns through adaption of project design or the mitigation of development impacts. In addition, quantifying the obstacles to community acceptance of development and the associated conferral of SLO may assist decision-makers to craft public policy responses which harness community participation and gain from the development of RE infrastructure.

The Irish planning system is relevant to the manner in which SLO can be measured. The consultation on development which takes place during the planning application process is frequently where unvarnished local perspectives on the proposed project become apparent. Community acceptance may not appear to be an immediate part of a planning professional's mandate however both private and public sector planners have a role to play in the perception of the RE transition through the submission and assessment of related planning applications and in the mitigation of planning risk arising from third party objections.

For private sector planning consultants, the manner in which preplanning consultation is or is not undertaken with local stakeholders may have an impact on the level of resistance to a project. Private sector planners

should consider the nature of such objections being advanced (which includes objections motivated by non-vexatious considerations), and tailor design solutions for future projects in order to mitigate future instances of objections for other projects with similar characteristics. The role of public sector planners relates to the clear articulation of planning and development policies and objectives to the communities which they will affect. At present, planning and development policy is written for other built environment professionals. The manner in which it is articulated does not frequently lend itself to interpretation by concerned members of the community. Plain English based expressions of planning policy objectives which relate back to a clearly identifiable theme within the development plan i.e. relating energy infrastructure to climate change and outlining the presence of natural resources in a particular area designated for development or where development is open to consideration. Beyond clearly set out rationales for the location of energy infrastructure in planning documents, public sector planners should be responsive to the concerns arising from communities towards different forms of infrastructure. Responses to concerns might include awareness building programmes which may enhance local knowledge relating to the development impacts of particular forms of energy infrastructure.

2 'Social License to Operate'

2.1 Overview & Background

A 'Social Licence to Operate' (SLO) is generally agreed as existing when a project or development has the broad acceptance and on-going approval of the local community in which it operates (Joyce & Thomson 2000; Owen and Kemp, 2013; Prno and Slocombe, 2012; Social License, 2017; Social License Task Force, 2009; Thomson & Boutilier, 2011). There are many terms used in relation to community engagement - which may, or may not, lead to community acceptance of a development - such as public and community consultation, public participation, stakeholder engagement, and as part of Corporate Social Responsibility (CSR) models (NESF, 2003; Social License Task Force, 2009; UNECE, 1998).

SLO is a relatively new concept – notably introduced in the context of natural resource extraction at the 1997 World Bank's conference on "Mining and Communities"[1] - whereby the proponent must gain the acceptance and *on-going* approval from its network of stakeholders (including the local community in which it operates) outside of a mandatory legal and/or non-statutory requirement. For the proponent to gain a quality SLO (see Section 2.2), it must demonstrate to the community that it is a legitimate, credible and trustworthy operator.The SLO is intangible (unlike a legal or fiscal licence) and susceptible to change, given beliefs and

[1] At the World Bank's conference on **"Mining and Communities"** (1997), the term 'Social License to Operate' (SLO) was introduced when the participants agreed the industry has a poor reputation amongst host communities and that a new culture and public profile for the mining industry was required**.** This process should begin at the level of individual mines and would, over time, create a new culture and public profile for the mining industry (Thomson and Boutilier, 2011).

perceptions are subject to change as new information is acquired thus highlighting the need for the proponent to earn and maintain the SLO (Thomson and Boutilier 2011). It is granted on a site-by-site basis, given that communities, projects and companies operate differently depending on the location.

Indeed, instances may occur whereby a written agreement can be agreed to capture tangible benefits (i.e. community gain arrangements); however, the SLO theory runs deeper than this and is rooted in the beliefs of the local community. For example, if the developer delivers an early promise but proves to be a 'bad neighbour' over the course of the developments life-cycle, the community may withdraw its approval of the development by way of legal challenges, protests, sabotage and restrictive access to essential resources. Gunningham et al. (2004: 307) notes that the SLO governs the extent to which a developer "is constrained to meet social expectations and avoid activities that societies (or influential elements within them) deem unacceptable, whether or not those expectations are embodied in law."

Establishing the foundation for the acquisition of SLO from a community is predicated on early engagement between the proponent (this may be the project promoter or the local authority which grants permissions) and the community resident in proximity to the site of the proposed development. Disseminating project information in an open and transparent matter at an early stage is an interchange which is illustrative of the form which this early engagement may take. Through reviewing 'acceptance precedent' which may be collated by studying past objections for similar forms of development in different settings, planners in both the public and private sector can advise clients on approaches to community engagement while planners can reflect the concerns of those communities to decision makers at both local and national level in order to inform the development of policy responses which promote community acceptance and therefore generate SLO.

2.2 SLO: its Components and Levels

Thomson and Boutilier (2011), in the context of mineral developments, identify the four levels of the SLO (see Figure 1):

- withhold/ withdrawal,
- acceptance,
- approval, and
- co-ownership.

These levels act as boundaries between the normative components which comprise the community's perceptions of the social legitimacy and credibility of the development, and the presence or absence of full trust between the community and the proponent. These elements are acquired sequentially and are cumulative in building towards the SLO (Social License, 2017).

The higher level (or quality) of the SLO granted is correlated to the level of socio-political risk faced by the company. The 'withdrawal' of the SLO is deemed the worst-case scenario for the company who should have a minimum aim of obtaining 'acceptance'. Figure 1 graphically portrays the 'withhold' level as narrower than the 'acceptance' level representing that, globally, more projects are accepted than rejected (although no empirical data is available to confirm this supposition).

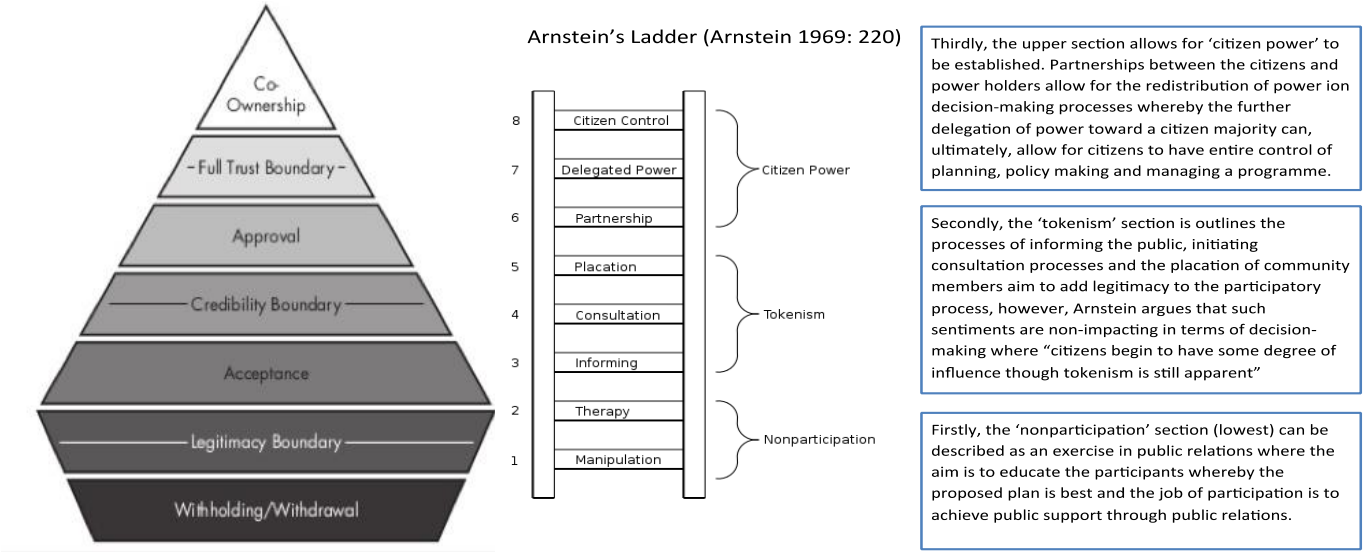

Figure 1: **Four-level-phase view of earning the SLO (Thomson and Boutilier; 2011) & Arnstein's 'Ladder of Citizen Participation'**

The normative components comprising the SLO concept are based on the proponent demonstrating it is a legitimate, credible and trustworthy operator as outlined below.

Legitimacy

In the context of stakeholders and politics, Knoke (1985) identifies legitimacy as the acceptance by the general public of the proponent's right to exist and to pursue its affairs in its chosen manner. Thomson and Boutilier (2011) offer that legitimacy is a component that can be gained or lost by the proponent based on the generalised perception that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.

This adequately summarises the bare minimum of legitimacy even when the company has no SLO. Suchman (1995) proposed a three-category typology of legitimacies where the community asks itself:

1. **Pragmatic questions** based on audience self-interest (What do the company want? What's in it for us? How will the consequences of their actions affect us and will the company share decision-making with us?);

2. **Moral questions** based on normative approval (Does anyone in authority respect/ recognise us? Are they conforming to our social, cultural or political norms? Will their activities promote the general welfare of the community according to their values?); and

3. **Cognitive questions** based on comprehensively and 'taken-for-grantedness' (Does what they say make sense, or is it confusing or strange? Does the company have the capacity to do what they say they could do?).

In terms of the granting the SLO, Prno and Slocombe (2012) highlight how corrupt, harmful or deceitful practices employed by the company calls into question the legitimacy, and therefore, quality of the SLO. Thomson and Boutilier (2011) describe **economic legitimacy** (where the development is perceived to offer economic benefits) and **socio-political legitimacy** (where the development is perceived as adding to the well-being of the region and meeting expectations about its role in society) as the two forms of legitimacy that deliver on the acceptance of a project. If either of these legitimacies is not perceived, the community will withhold or withdraw the SLO.

Credibility

Thomson and Boutilier (2011) describe credibility as the foundation of trust and this credibility is gained when there is little danger of the company reneging on their promises. While legitimacy can be earned by just listening, credibility requires following through on promises and dealing in an honest and transparent manner. Community members need to see such actions occurring in order to issue their approval, and subsequent *on-going* approval, if the company maintains positive transactions with the community. Another essential component of credibility is the consistent provision of open and transparent information[2] (delivered in a non-scientific/ technical manner) and decision-making when dealing with different groups[3]. In deciding whether the developer is credible, the community asks itself:

- Will they deliver on their promises? Are they living up to their responsibilities? Are they acting yet on what we already said concerns us? Do their promises sound unrealistic?

- Do we understand why they treat some groups differently and how that is consistent behavior?

[2] The author recognises that the right to "Free, Prior and Informed Consent" (FPIC) is provided on a one-off basis and prior to the development. FPIC is an OECD standard. Ireland is a member state of the OECD.

[3] Where "transparency reveals the principles that determine why one group might be treated differently than another, reducing the risk of feelings of discrimination or marginalisation" (Thomson and Boutilier; 2011: 1785))

- Are they keeping secrets? Do they avoid contact or avoid answering certain questions? Do they acknowledge difficulties or do they often sound superficial?

Thomson and Boutilier (2011: 1785) note that, to earn credibility, the company should make and keep short-term promises as part of a cycle of listening and responding to the community and this is best done by using participatory processes to:

- identify community priorities that the company can help make real,
- bringing in third parties to verify the truth of company statements and to empower the community to be the watchdog on the company's activities (e.g. community based environmental committees),
- formal agreements and contracts give structure,
- manage expectations,
- avoid misunderstandings, and
- define rules, roles, and responsibilities.

Providing false or incomplete information or failing to deliver on promises will quickly destroy credibility and lead to questions as to whether the company is even legitimate. Acceptance can be withdrawn rapidly.

Full Trust

Thomson and Boutilier (2011) acknowledge that trust is the much desired quality and is typically earned over time as the product of shared, positive experiences. They note "trust is hard to earn, easy to lose, and very difficult to recover once lost." (2011: 1786)

Trust is especially important when bridging the boundary between developers and community groups. Before moving to trust level the community will ask itself questions such as:

- Have they fulfilled their promises repeatedly and consistently?
- Did they handle the unexpected problems in a way that showed they had our best interests at heart?
- Did they share power in a partnership approach?

Thomson and Boutilier further explain that:

> *"In order to gain full trust, a company has to go beyond fulfilling its promises to jointly envisioning new development goals with the community. The company will have initiated activities to strengthen the community's ability to plan and achieve its goal for the future." (2011:1786)*

Stemming from the above (and Figure 1), the levels of the SLO, which act as the boundaries to the normative components that the community evaluates the standard of the development, are detailed as follows (in the context of mineral exploration and development) :

1. **Withheld/ Withdraw:** Starting from the base, the community can reject the project and withhold or withdraw the SLO. The community stops the progress of the project by employing mechanisms such as legal challenges, protests, sabotage and restrictive access to essential resources such as the mineral deposit itself as well as financing, legal licenses, raw materials, labour and public infrastructure.

2. **Acceptance:** If the community accepts the mining project as being legitimate they begin to listen and consider the company's proposals (*tentative* acceptance of the project). Acceptance is bounded by the legitimacy (which must be firmly established) and credibility (which should at least not be damaged) criterion therefore representing.

3. **Approval:** Upon establishing both legitimacy and credibility, a community is likely to grant their approval of the project as they view it is as favourable and are pleased with it (consequently the company has secure access to the essential resources it needs). The socio-political risk decreases at this stage; nonetheless, it is "really only at the threshold of opportunity" (2011: 1786) where moving toward the top of this level a company can begin to benefit positively from their relationship building.

4. **Co-Ownership:** The highest tier represents trust as being firmly established between the operation and the community where the community takes responsibility (co-ownership/ psychological identification with the project) for the project's success. This may entail the community defending the company/ operation against 'outside'/ non-local stakeholders (e.g. international NGOs) who move against the operation or working closely with the company to develop creative solutions to external challenges. Thomson and Boutilier note the 'social identity theory' (Williams, 2001) when stating the 'us-versus-them' between the community and the company is dissolved at this stage though few companies have community relations at this level.

The community's perceptions of the proponent's operation, as outlined as the normative components, draw parallels to Arnstein's 'ladder of citizen participation'. Arnstein (1969: 219) confers that consultation "can be a legitimate step toward the citizen's full participation"; however, it can be described as a "sham" and "tokenism" when public consultation is not combined with other means of participation. While the 'power-

holders' (the proponent) believe community involvement has been achieved, there are no assurances that citizen's concerns and ideas have been taken into account.

The concept aligns with work completed on understanding community acceptance of wind energy technologies by communities, such as Wustenhagen et al (2007) who broke the concept into three components;

- **Socio-Political Acceptance**; Broadly defined as the degree of public support for RE, as indicated by the tone of debate in the media and politics about the value and viability of wind as an energy source
- **Market Acceptance**; The degree to which financial institutions and investors view wind as commercially viable. This also includes consumers' willingness to accept wind energy as part of their consumption bundle.
- **Community Acceptance;** this reflects the willingness of those living in the local vicinity of a potential wind project to accept the construction of a wind farm, and accompanying infrastructure. This has been misunderstood as a synonym for societal acceptance, hence explaining initial complacency on behalf of Irish developers regarding engagement with local communities.

The synergies between the discourses surrounding SLO and Arnstein's conceptual framework infers that there is a need to secure community acceptance and SLO (moving from acceptance to *ongoing* approval) in relation to RETs on a site specific basis. The achievement of this cannot be effectively realised unless the planning system is cognisant of the issues which may arise in relation to the development of RE infrastructure on a specific site that influence SLO as well as the proper planning and sustainable development of an area. The concept of SLO in terms of the higher level aligns with the higher levels of Arnstein's 'Ladder of Citizen Participation' (i.e. 'Citizen Power') as outlined in Figure 1 above.

3 SLO and Renewable Energy in an Irish context

In an Irish context, direct parallels can be drawn between SLO and natural resource exploration and extraction (i.e. mining/ mineral development) and RE generation. Both industries (natural resource and RE development) have definable footprints and are situated in landscapes which may have strong cultural, historic, environmental or 'local' identity associated with them. In addition, other factors such as the distribution of a benefit accruing from the exploitation of a local natural resource may play a factor in the manner in which SLO is earned and retained.

The purpose of this section is to explore the manner in which SLO intersects with the deployment of RE generation (namely wind and solar). Subsequent sections will posit recommendations for steps which may

ameliorate community concerns and positively influence the conditions for the creation of a robust SLO for the RE transition.

3.1 SLO and Wind Energy

Bertsch et al (2016) infers that opinion polls consistently show general public support for wind energy, though local level support for RE infrastructure declines for a variety of reasons, largely due to 'landscape modification'. While these insights are based on German case studies, work by Ellis (2012) and others confirm the applicability of the concept to the Irish context.

In particular, there is a strong correlation between negative local responses to wind farms and a sense of imposition arising from a lack of any appreciable benefits accruing to the immediate community. Community responses to the development of RETs manifest in the form of objections lodged against RE infrastructure through the Irish planning system. Examining the means by which communities may actively participate in the energy transition as part owners of the infrastructure located in their environs may engender greater cooperation and enhance societal acceptance. At present, the issues advanced consistently as grounds for third party objections are as follows:

- Prospect of Accidents (Construction Phase);
- Noise Nuisance;
- Health Concerns;
- Contamination;
- Shadow flicker;
- Turbine Failure;
- Decommissioning;
- Impact on Animal Life (Hen Harrier/Bats);
- Perceived inefficiency of wind energy;
- Absence of benefits to the community;
- The high cost of wind power/subsidisation;
- Compromising environmentally sensitive habitats; and
- Visual Impact.

3.2 SLO and Solar Energy Generation

This case study section explores the SLO issues emerging from the utility scale solar planning pipeline.

The analysis outlined in this section builds on a report published in January 2016 which analysed third party objections to two solar photovoltaic (PV) schemes which were appealed to An Bord Pleanála in late 2015[4]. The findings of this section in terms of the community acceptance issues relating to utility scale solar PV is based on a sample of 143 planning applications which were submitted over the course of 2016.

Solar PV is widely seen as the next paradigm of RE development due to the declining cost of the necessary components as well as the popular resistance to other forms of RE generation, most notably in relation to wind energy development. The grounds for objection have been categorised under broad headings in this paper however references to the specific planning files consulted as part of this assessment are provided below.

Solar PV development is not a new concept to Irish planning practice as its consideration as a form of micro-generation infrastructure has been taking place for some time. Small scale solar PV installations in residential/commercial settings make up a number of exemption classes in the Planning and Development Regulations 2001 (as amended). As the technology has matured, the cost and viability of developments of scale has become more cost effective and as such, applications for solar PV developments of scale are beginning to come into the planning pipeline.

With further development of scale mooted, in the form of a €180 million solar development investment plan for Cork[5] along with Bord na Mona and ESB's €500 million joint venture[6], it is necessary to begin considering how the planning system can moderate the concerns of communities and the national interest in terms of the diversification of Ireland's sustainable energy transition.

While welcome in terms of diversifying Ireland's renewable and primary energy mix as well as contributing to energy security, the appearance of solar PV developments in our landscape has engendered a response from the community resident therein. In order to plan effectively for the delivery of a strong and vibrant solar farming sector in Ireland, it is prudent to study the concerns of citizens who may express reservations (and through observations/objections to the planning application to developments in their areas).

By garnering knowledge of the precedent of objections which have amassed to date, decision makers, developers and built environment professionals can move to address the concerns of the community and allay whatever fears may be present in order to facilitate solar development in areas where it is viable to do so in terms of environmental, economic and social considerations.

[4] Walsh, S (2016) "Planning Objections to Solar PV schemes of scale in Ireland" Available via: https://thewonk.eu/reports/planning-objections-to-solar-pv-schemes-of-scale-in-ireland r1147.html

[5] Irish Times (2015) *'First Irish solar farms due next year, says firm'* Available via: https://www.irishtimes.com/business/energy-and-resources/first-irish-solar-farms-due-next-year-says-firm-1.2211640

[6] Irish Independent (2016) '*ESB and Bord na Móna in €500m solar venture to power 150,000 homes*' Available via: http://www.independent.ie/business/irish/esb-and-bord-na-mna-in-500m-solar-venture-to-power-150000-homes-35657227.html

3.2.1 Policy and Guidance

The absence of national guidelines for the development of solar farms in Ireland is cited as grounds for objection by all of the appellants. The policy guidance to which local authorities have had regard to when assessing the application, in a general sense, was guidance used by local authorities in Devon and Cornwall in the United Kingdom. During an Oral Hearing held in respect of one application on appeal to An Bord Pleanála, the local authority representative present outlined the rationale for using this policy baseline given perceived similarities in terms of geographic considerations between the landscape and setting of Wexford (the county in which the particular scheme was located) in comparison to the two identified areas in the United Kingdom. This UK guidance has been consistently cited in applications submitted in an Irish context. In addition, UK guidance also formed a component of the evidence base which underpinned the development of planning guidance recommendations for utility scale solar PV in an Irish context[7]

While there is no planning guidance in an Irish context at present in relation to the development of solar PV developments of scale, the precedent of relying on practice from the UK in the interim when a new paradigm of development takes hold is well established as evidenced by the use of the Design Manual for Roads and Bridges (1992), a UK standard which was applied in an Irish context until Irish guidance on road design and planning was developed. An issue with the application of UK guidance with respect to this type of development in an Irish context arises on consideration of the different approaches taken to the management of development in rural areas. The intersections between these management systems and their corresponding spatial patterns with the development of solar PV will be examined in the subsequent subsections.

3.2.2 General Siting and Proximity to Housing

The objections under this heading contain a number of elements. The first relates to some of the appellants fearing that the development of the proposed project would result in a devaluation of their properties. While there are studies which indicate that proximity to wind farm developments may have a detrimental impact of property prices, the same cannot be definitively established in respect of solar developments in an Irish context. The impact of a solar farm on the property price of a residential unit can be expected to be subjective, contingent on the quality of the residential unit, the availability of housing in the locality etc. To date no studies in mature solar energy markets illustrate a negative impact on property prices as a result of the development of solar PV developments of scale in proximity.

[7] Walsh, S (2016) "*Planning and Development Guidance Recommendations for Utility Scale Solar Photovoltaic Schemes in Ireland*" Available via: https://www.seai.ie/Renewables/Energy_Research_Portal/National-Energy-Research/RD-D-Projects/2016-RDD-96-Planning_Development_Guidance_Utility_Solar-PV_Irl-FAC.pdf

The proximity of the proposed development to a residential unit in the ownership of one of the appellants was grounds for a separate objection. Initially, a 3 metre setback distance from the boundary of the subject site which abuts the residential unit in question was proposed by the applicant. However, at a later stage in the project a setback distance of 22 metres was adopted. The rationale for this distance was requested by the appellant at the Oral Hearing. The planning authority confirmed that the distance was taken from the standard regulating separation distances at first floor level in residential schemes. The use of a distance from another, unrelated area in planning terms to manage in the interaction between the properties in proximity to the boundary of the site was imperfect in this instance in the author's opinion as such ad hoc adaptions of standards from other areas may not serve public confidence as to the reasoning advanced for the management of development in 'their' landscapes. Consequently, it will be necessary to develop an evidence based formula which is sufficiently adaptable to manage the context specific interaction at site boundaries between solar PV developments of scale and residential properties.

3.2.3 Land Use/Loss of Agricultural Land

The loss of agricultural land was outlined in a number of the objections as being a concern. The quality of the agricultural land on which the proposed development was to be sited was also flagged as an item of objection within the inspector's report. Due to the status afforded to land in Ireland, this type of objection is likely to persist in instances where objections are raised to solar PV development.

In the United Kingdom, agricultural land is categorised under five grades[8];

- Grade 1 - excellent quality agricultural land;
- Grade 2 - very good quality agricultural land;
- Grade 3 - good to moderate quality agricultural land;
    - Subgrade 3a - good quality agricultural land;
    - Subgrade 3b - moderate quality agricultural land ;
- Grade 4 - poor quality agricultural land; and
- Grade 5 - very poor quality agricultural land.

No comparable categorisation of Irish agricultural land types exists and market categorisations such as 'prime arable land', 'mainstream grassland' and 'marginal grassland' are overly vague to be effective in terms of guiding a policy led approach in an Irish context, especially considering the possible influence of subjective community views on the quality of a particular site's agricultural land. While the productive capacity of agricultural lands with solar PV developments employed thereon may be reduced, it is not entirely

[8] Ministry of Agriculture, Fisheries and Food (1988) "Agricultural Land Classification of England and Wales" Available via: http://publications.naturalengland.org.uk/file/5526580165083136

precluded. International practice from countries where solar PV developments have been constructed yield innovative insights which may guide the Irish approach to the continued use of lands under solar PV arrays. As grounds for objection, the premise is eroded on consideration of the fact that the portion of lands not influenced by the solar PV infrastructure can remain in agricultural use, albeit amended to ensure that the presence of animals and machinery for the harvesting of crops do not damage the equipment and infrastructure on site.

3.2.4 Visual Impact

The concerns arising from this heading relate primarily to the perceived impact of the developments on the visual amenity of the receiving environment. The impact of the proposed developments in respect of glint and glare on the residential uses around the sites was raised by a substantial cross section of objectors across the sample of applications reviewed. This phenomenon is frequently subject to a bespoke study on the part of the applicants for the schemes reviewed. By using geometric modelling and assessing the conditions required for reflections causing glint and glare to occur are assessed. In the event that such an impact arose, screening recommendations are proposed.

Interestingly, there are no guidelines for ground based glint and glare however there are some documents relating to the phenomenon in the context of the aviation industry. In relation to the impact of glint and glare on aircraft is assessed as being minimal due to the comparable visual signature of solar PV cells with naturally occurring features like snow, water, concrete etc. This is confirmed by the “No Hazard to Air Navigation” designation conferred on the technology by the Federal Air Administration (FAA) of the United States. A study entitled "*A Study of the Hazardous Glare Potential to Aviators from Utility-Scale Flat-Panel Photovoltaic Systems*" (2011), found that other, more common materials constitute a great risk to aviation, such as white Portland cement, snow and the structured glass of building towers. It should be noted that the UK National Planning Policy Framework for Renewables and Low Carbon Energy stresses the effectiveness of “well planned and well screened” developments as being effective in terms of mitigating for the generation of a visibility nuisance impacting residential properties. Screening is proposed for the subject sites as remedy for a possible but unlikely occurrence of reflectance.

3.2.5 Ancillary Objections

A number of objectors raised concerns in relation to the prospect of noise pollution from the onsite inverter and fire risk arising from the operation of the development. In respect of the noise issue, in respect of the Tintern solar scheme appeal, the inspector noted the concerns of the appellants but was unable to find any scientific basis for the contention that the development would result in a noise nuisance. Access in the case of fire by a tender was mooted as an issue as were fumes arising from any combustion on the subject sites.

The lack of a report from the Chief Fire Officer during the initial development consent was highlighted by the appellants. However, given the components of the infrastructure, largely being composed of glass and metal, the risk of these components supplying fuel to a hypothetical fire was found to be highly unlikely.

In respect of the Tintern scheme, a condition in the grant of permission from Wexford County Council had stipulated that a post development noise survey be commissioned. However, the inspector found this condition to be unnecessary and likely influenced by practice undertaken in relation to a wind energy development.

Noise arising from the construction phase can be handled by way of condition in the grant of permission for a development, in the construction management plan or in the detail of an Environmental Impact Assessment (EIA) should one be needed for a solar PV development. In relation to fire risk, given the absence of flammable materials making up the solar arrays, instances of fires breaking out are highly unlikely.

4 Discussion

By analysing such cases studies, decision makers, professionals and developers can gain insights into the concerns of communities in receiving environments and react to allay them through the development of specific development guidance for the sector, clearly outlining the nature of the development involved as well as developing solar schemes which reduce visual impact in the landscape.

The Irish rural landscape has been comprehensively shaped by human activity over successive generations into a landscape of production. This transformation has radically altered the visual appearance over time, largely spurred by the need of land for agriculture, the production of food and the utilisation of timber for building, fuel and a host of other related uses. Communities were at the forefront in terms of being agents for the changes made in the landscape and consequently, in order to promote low carbon energy generation in these landscapes, communities will need to provide the SLO and, in doing so, be active agents themselves in terms of generating RE and decarbonising the economy. Historically, the communities' resident in these landscapes benefited from the development which took place therein, either directly from the cultivation of agricultural produce or indirectly through the provision of support services to this sector. This paradigm of activity and benefit arguably shapes the manner in which communities perceive the transactional dynamic associated with the undertaking of activities in their environs. This has implications for the manner in which SLO may be gained for the development of RE infrastructure in an Irish context and can be seen in third party community based objections to RE infrastructure development where such objections articulate a complaint against a development on the grounds that the community accrues no benefit.

While this type of complaint is not a material consideration for the planning process, it is illustrative of the conditions which affect community interaction with specific projects. Given the fact communities may challenge a decision of a planning authority through the courts with the consequence of delaying the development of critical infrastructure, considering mechanisms which enhance community acceptance, thereby potentially reducing the risk of the delays to the developing RE infrastructure. The Danish example cited below is illustrative of the positive impact of a community gain system on the reduction of objections to RE infrastructure.

By acting in a manner which anticipates and addresses key concerns of the community (or members thereof), the development of solar PV in Ireland may be able to avoid the contention which faces wind energy developments. While objections to solar energy developments in rural areas are likely to occur regardless of the approach undertaken, the application of measures which address the most common concerns may reduce resistance, leaving relatively disingenuous or vexatious grounds to be dealt with at the initial planning phase and/or at the subsequent appeal phase.

In terms of recommendations arising for the enhancement of SLO, these can be summarised under two broad headings

- Accessible Planning Guidance and Policy
- Community Benefit (enhanced via active and early community engagement)

4.1 Accessible Planning Guidance and Policy

The shape of Ireland's development management system which actively deals with the delivery of RE infrastructure is shaped indirectly by community perspectives on renewable energy development. The experience amassed in terms of the wind energy sector and the community reaction to its development impacts is indicative of this as the drafting of wind energy guidelines to replace those drafted in 2006 has indicated. Matters pertaining to set back distances and visual impact have been subjected to intense debate by decision makers as these development impacts of the technology have been at the core of community opposition to wind energy development in an Irish context. The same occurrence is also apparent in relation to the solar energy sector as observations relating to the perceived impact of solar PV systems (such as land take and visual impact) are articulated by observers and objectors. Planning policy needs to respond in terms of the devising appropriate development management criteria which nullify inaccurate perceptions of RE and outline the characteristics of the technology concerned in a manner which is accessible to communities. Consideration should also be afforded the development of a 'trusted intermediary' for communities who could act to support communities in circumstances where knowledge and technical insights of RE

developments would be required in order for communities to take decisions on the characteristics of RE schemes proposed for development in their environs.

Such a 'trusted intermediary' should be independent of the core development. Stewart and Lewis (2017: 15), in describing the paradigm of the 'honest broker' note that those appointed by the developer and/or the community may have an underlying bias toward the development (whether advocating for, or against it), while an independent technical expert may be advising on behalf of the regulator.

Furthermore, Stewart and Lewis describe the community's response to complex technical matters – from a geoscience perspective[9] - are often inappropriate and misguided and that "informal biases are central to the way that people deliberate about unfamiliar … activities" (2017: 8).

4.2 Community Benefit

The creation of opportunities for communities to benefit from the development of RE infrastructure is key in terms of developing SLO for RE infrastructure in Ireland. Community benefit can be defined and implemented in a variety of ways. In an Irish context, community benefit has been traditionally applied in an ad-hoc basis on wind energy schemes which are below the threshold for the mandatory institution of a community benefit scheme as per the terms of the Planning and Development (Strategic Infrastructure) Act 2006. The authors note that there is a difference between community gains which may be perceived as 'tokenism or 'buying-off the community', and legitimate economic gains as outlined earlier which must also incorporate socio-political legitimacy whereby the overall project must be perceived as adding to the well-being of the region and meeting expectations about its role in society.

Community benefit systems for RE infrastructure have been implemented in a Danish context. The Danish model of community benefit arose from an increase in the level of objections to RE infrastructure, particularly wind energy projects. A number of mechanisms have been applied in Denmark to enable residents to benefit from the development of RE infrastructure in proximity to them. Research funded by the Sustainable Energy Authority of Ireland (SEAI) under its 'Research, Development and Demonstration' (2016) scheme outlined a summary of these community benefit schemes:

- **"Adjacent Residences" Scheme**

When constructing wind turbines of 25 metres or more, those behind the project are required to pay a fee to the residences adjacent to the wind farm / turbine. See below for further details.

[9] Stewart and Lewis (2017) – "Communicating contested geoscience to the public: Moving from 'matters of fact' to 'matters of concern'" – pertains to developments of geo-scientific nature such as geothermal power, hydrocarbon extraction (oil and gas), mining, and deep storage of geo-waste products (carbon storage).

- **"Option to Purchase" Scheme**

Under this scheme, the construction of wind turbines of 25 metres or higher, at least 20% of the equity must be offered to any permanent resident above the age of 18 living within 4.5 km of the project site. See below for further details.[10]

Movement towards the implementation of community benefit schemes in an Irish context are emerging from the review of the Wind Energy Development Guidelines[11] announced in June 2016 by the Department of Housing, Planning and Local Government. The main points of this approach relating to community acceptance are:

- the application of a more stringent noise limit, consistent with World Health Organisation standards, in tandem with a new robust noise monitoring regime, to ensure compliance with noise standards;
- a visual amenity setback of 4 times the turbine height between a wind turbine and the nearest residential property, subject to a mandatory minimum distance of 500 metres;
- the elimination of shadow flicker; and
- the introduction of new obligations in relation to engagement with local communities by wind farm developers along with the provision of community benefit measures.

With reference to the introduction of new obligations relating to the 'introduction of new obligations in relation to engagement with local communities by wind farm developers along with the provision of community benefit measures'. While the shape of these community benefits has not been defined and the provisions relate to wind energy development only, it is likely that the pressure to implement community benefit provisions for other forms of RE generation.

The SEAI research[12] referenced above posited a number of ways in which community benefit and ownership of RE infrastructure could be promoted therefore enhancing the SLO. The options put forward in this research are set out below.

[10] Tipperary Energy Agency, Future Analytics Consulting, Philip Lee, Tipperary County Council (2016) '*Legislative Mechanisms for Local Community Ownership and Investment in Renewable Energy Infrastructure*' p 14

[11] Department of Housing, Planning and Local Government (2016) '*Minister Coveney and Minister Naughten announce key development in the review of the Wind Energy Development Guidelines*' Available via: http://www.housing.gov.ie/planning/guidelines/wind-energy/coveney-and-naughten-announce-key-development-review-wind-energy-development-guidelines

[12] Tipperary Energy Agency, Future Analytics Consulting, Philip Lee, Tipperary County Council (2016) '*Legislative Mechanisms for Local Community Ownership and Investment in Renewable Energy Infrastructure*' p ii-iii

Option One

It was submitted that those living very close to large scale RET installations experience them most intensely; therefore, it was proposed in this Option that the developer would be required to give a mandatory stake in the development, to any resident living within a 1km zone of an energy installation such as a wind turbine. This mechanism has two facets; firstly, it incentivises developers to locate in areas with low residency. Secondly, it offers some return to those living within the 1km zone. This proposal would require legislative change in order to bring it into effect as current property law would not support such an imposition on private development rights. It may also render certain developments of RE unviable from a developer / funder perspective.

Option Two

It was proposed that Ireland partially imitate the Danish model "option to purchase" scheme. This model places an obligation on developers of RE installations - above a certain threshold - to offer investment shares in the development within a pre-determined radius of the development. The obligation to offer shares would be attached by planning condition on the development and the details of the share scheme would be agreed prior to the commencement of development, in accordance with proposed Ministerial Guidelines under section 28 of the Planning and Development Act 2000, as amended. This proposal would not necessarily require an amendment to current legislation in order to be implemented; however, detailed Ministerial guidance would be required in order to provide the necessary legal basis for imposing planning conditions and to ensure consistency of implementation on a national basis. Whilst a condition would attach to a development on the basis of the above, a proposal to operate a community investment scheme would not be a material consideration in the decision to grant or refuse planning permission.

Option Three

It was proposed in this Option, subject to affordability and consultation, to encourage the adoption of a formalised mechanism to support a 'community gain' approach for all projects both above and below Strategic Infrastructure Development thresholds. There are a variety of ways a community gain scheme can be implemented, as documented in the Irish Wind Energy Association (IWEA) – 'Being a Good Neighbour' - document. The principle of local control, both strategically in terms of what the community gain should be spent on at fund inception, and an objective, transparent and fair administration process (e.g. by a trusted intermediary), in terms of individual project approval should be core to the development of this process. This proposal would not require legislative change as it non-mandatory and non-binding on the developer, and indeed is generally accepted as common practice. Effective implementation would require the development of detailed guidelines and the identification of a trusted intermediary.

The options articulated above were devised with reference to its application through the Irish planning system. There are other mechanisms by which community acceptance enhancing measures could be applied. In September 2017, the Department of Communications, Climate Action and Environment (DCCAE) published a report outlining models of community ownership of RE infrastructure in Ireland. Compiled by Ricardo and BioXL[13], the report outlines a range of policies and measures which could increase community involvement in RE which are summarised in Figure 2 below.

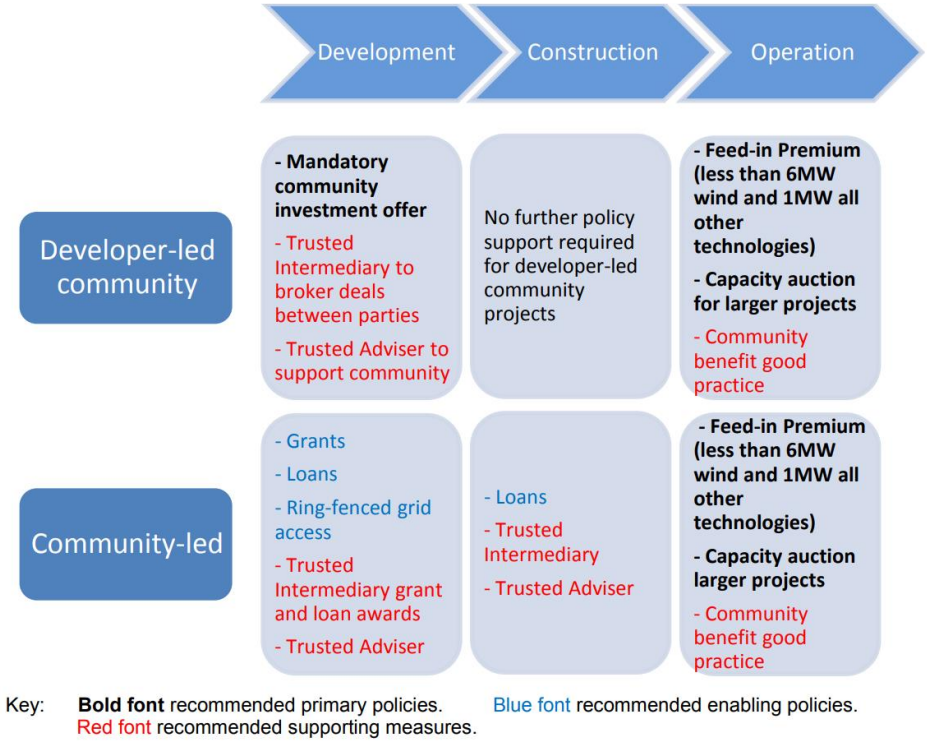

Figure 2 Policy and Approaches for Community Renewables (Source: Ricardo & bioXL, 2017)

The measures outlined above do not necessarily involve an application through the Irish planning system, though it illustrates that measures to enhance community acceptance and grow SLO may involve the planning system or may be implemented through other mechanisms such as preferential feed in tariffs.

5 Conclusion

This paper explored the concept of 'Social License to Operate' and the sustainable energy transition in an Irish context with reference to two types of renewable energy generation. The deployment of RE infrastructure as a part of Ireland's transition to a low carbon economy has not been a seamless process as

[13] Ricardo & bioXL (2017) 'Assessment of models to support community ownership of renewable energy in Ireland' Available via: http://www.dccae.gov.ie/en-ie/energy/consultations/Documents/28/consultations/Assessment%20of%20models%20for%20community%20renewables%20in%20Ireland.pdf

communities in the receiving environment frequently mobilise effective campaigns of opposition which impact of the State's obligations to decarbonise Ireland's energy sources.

The conceptual framework exploring the nature of SLO is outlined in detail, and the nature of the objections advanced through the planning system in respect of wind energy and solar energy technology illustrate the dynamics of how SLO intersects with the development process. The implications of a lack of SLO in terms of a development progressing can be seen through the controversy surrounding the development of infrastructure and the delays which can emerge if decisions regarding the consenting of infrastructure if they are judicially reviewed. These two RETs are currently at different maturity levels in Ireland however similarities in the manner in which they are perceived by communities have influenced the nature and characteristics of the permissions and infrastructure granted and developed in an Irish context to date. The nature of these objections is set out and a number of recommendations have been articulated in order to address these objections and to enhance SLO for RE schemes in Ireland.

The responses to the instigation and evolution of SLO terminology and theory, as explored above, outline how this concept can be advanced with reference to the Irish planning system as well as through other mechanisms.

In terms of the role of planning, the planning system affords society the opportunity to determine how plans and projects are being perceived by the communities in which the infrastructure will be developed. The role of the planner is to relay this information to decision makers on public policy who can craft public policy responses to address these issues. If this linkage is not developed then there is a risk that responses to opposition to RE infrastructure will not be advanced and the pace of the State's energy transition will slow, to the detriment to the economy and the environment.

About the Authors

Andrew Gaynor MSc is business development manager for Geoscience Ireland (a part of Geological Survey Ireland) with responsibility for identifying overseas commercial opportunities for Irish companies in the natural resources, infrastructure and environment sectors.

He holds an MSc in Sustainable Development (Dublin Institute of Technology) and completed his dissertation on Social Licence to Operate in the context of Irish public policy; he also holds a degree in economics, finance and geography (BA, National University Ireland Maynooth).

Stephen Walsh MIPI AIED is a town planner currently working with Geoscience Ireland (GI) as a Market Advisor. GI is a network of 34 companies, delivering integrated expertise in water, minerals, environmental and infrastructure development to clients in over 50 countries. GI is supported by the Geological Survey Ireland, the Department of Communications Climate Action and Environment and Enterprise Ireland.

In addition, Stephen is a Director of PHR which specialises in the provision of market intelligence on the Irish renewable energy sector to public and private sector clients.

Bibliography

Arnstein, S.R., (1969). '*A Ladder of Citizen Participation*' .JAIP. 35(4) 216-224.

Bertsch, Valentin; Hyland, Maire (2016). *The role of community compensation mechanisms in reducing resistance to energy infrastructure development.* ESRI Working Paper, ESRI Series Number: 559, April 7, 2017

Department of Communications, Energy and Natural Resources (2015) "*Ireland's Transition to a Low Carbon Energy Future 2015-2030*" Government of Ireland

Department of the Environment, Heritage and Local Government (2006) '*Wind Energy Guidelines*' Available at: http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownLoad%2C1633%2Cen.pdf

Department of Finance (2016) '*Stability Programme Update*' Government of Ireland.

Ellis, Geraint; Hubert, Stefanie; Horbarty, Robert (2012) Community Acceptance of Wind Energy Projects.

In: EDI Quarterly, Vol. 5, No. 1, 01.03.2013, p. 18-20.

Gunningham, N., Kagan, R.A., Thornton, D., (2004). '*Social licence and environmental protection: why businesses go beyond compliance'*. Law & Social Inquiry 29, 307-341.

Joyce S.A. , Thomson I., (2000) '*Earning a social licence to operate: social acceptability and resource development in Latin America'*, 93, 1037

Irish Times (2015) *'First Irish solar farms due next year, says firm'* Available via: https://www.irishtimes.com/business/energy-and-resources/first-irish-solar-farms-due-next-year-says-firm-1.2211640

Irish Independent (2016) '*ESB and Bord na Móna in €500m solar venture to power 150,000 homes*' Available via: http://www.independent.ie/business/irish/esb-and-bord-na-mna-in-500m-solar-venture-to-power-150000-homes-35657227.html

Knoke, D. 1985. The political economies of associations. In R. G. Braungart, & M. M. Braungart (Eds.), Research in Political Sociology, Vol. 1: 211–242. Greenwich, CT: JAI Press.

NESF, (2000).' *The Policy Implications of Social Capital*'. Dublin: National Economic and Social Forum.

Owen, J.R., Kemp, D. 2013. '*Social licence and mining: A critical perspective*'. Resources Policy 38 (2013) 29-35.

Prno, J., Slocombe, D.S., (2011) 'Exploring the origins of '*Social License to Operate' in the mining sector: perspectives from governance and sustainability theories'*. Resources Policy 37 (2012) 346-357.

Phelan (2014) '*Why wind farms have power to divide country*'. The Irish Times, [online] 25 February 2014. Available at: < http://www.independent.ie/irish-news/why-wind-farms-have-power-to-divide-country-30038069.html>

Ricardo & bioXL (2017) 'Assessment of models to support community ownership of renewable energy in Ireland' Available via: http://www.dccae.gov.ie/en-

ie/energy/consultations/Documents/28/consultations/Assessment%20of%20models%20for%20community%20renewables%20in%20Ireland.pdf v

SEAI, 2016, '*Legislative Mechanisms for Local Community Ownership and Investment in Renewable Energy Infrastructure'*, [online] Available at: http://www.seai.ie/Renewables/Energy_Research_Portal/National-Energy-Research/RD-D-Projects/2016-RDD-95-Legislative_Mechanisms_Community_Ownership_RE-TEA.pdf

Social License, 2017, *'What Is the Social License?'*, [online] Available at: https://socialicense.com/definition.html

Social Licence Task Force, 2009 '*Earning the Social Licence to Operate: Lessons from Selected Industry Sectors. Final Report of the Social Licence Task Force Group'* Submitted to the Energy and Mines Ministers Conference, September, 2009.

Stewart, I.S., Lewis, D., (2017), *'Communicating contested geoscience to the public: Moving from 'matters of fact' to 'matters of concern''*, EarthScience Reviews, 2017

Suchman, M. C. (1995) '*Managing Legitimacy: Strategic and Institutional Approaches*' Academy of Management Review, 20, 571-610.

Thomson, I., Boutilier, R.G., 2011 '*The social licence to operate*' In: Darling, P. (Ed.), SME Mining Engineering Handbook. Littleton, Co.

Tipperary Energy Agency, Future Analytics Consulting, Philip Lee, Tipperary County Council (2016) 'Legislative Mechanisms for Local Community Ownership and Investment in Renewable Energy Infrastructure'

UNECE (1998), '*Convention on Access to Information Public Participation in Decision-Making and Access to Justice in Environmental Matters'* [online] Available at: [http://www.unece.org/fileadmin/DAM/env/pp/acig.pdf>

Walsh, S (2016) "*Planning Objections to Solar PV schemes of scale in Ireland"* Available via: https://thewonk.eu/reports/planning-objections-to-solar-pv-schemes-of-scale-in-ireland__r1147.html

Wüstenhagen, R., M. Wolsink, and M.J. Bürer, "*Social acceptance of RE innovation: An introduction to the concept*." Energy policy, 2007. 35(5): p. 2683-2691.

Appendix Three: Solar Case Study Sample

Planning Ref	Local Authority	Applicant	Development Address	Application Date	Site Area (Hectares)	Capacity of Scheme (MW)	Estimated Generating Capacity (MW)	Planning Status	Comment
16348	Carlow County Council	Farm Power Generation	Coppenagh, Tullow, County Cariow	01/12/2016	12.1	-	5.3	Further Information (FI)	
16325	Carlow County Council	Nolan PV Ltd.	Friarstown, Tullow, Co Carlow	07/11/2016	12.6	-	5.5	Further Information (FI)	Reapplication for permission after expiration of time for the submission of FI under application Ref 15315
16342	Carlow County Council	Power Capital	Ardnehue, Bennekerry, County Carlow	23/11/2016	12.9	-	5.6	Granted (Local Authority)	Granted (16/03/2017)
16289	Carlow County Council	Elgin Energy Services	Kilcarrig, Bagenalstown, Co Carlow	26/09/2016	14.0	-	6.1	Granted (Local Authority)	Decision Made (27/01/2017)
16507	Cavan County Council	Ciaran and Una Smith	Errigal, Drumman and Lislea, Cootehill, Co. Cavan	02/11/2016	12.8	5.0		Further Information (FI)	
16443	Cavan County Council	Elgin Energy Services	Carrickabane, Finea, Co. Cavan	20/09/2016	14.7	4.2	-	Granted (Local Authority)	Granted on the 23rd of May 2017.
16368	Clare County Council	Terra Solar Limited	Ballymorris, Co. Clare	09/05/2016	12.2	(4.2?)	5.3	Granted (An Bord Pleanala)	Appealed to An Bord Pleanala, third party vs. grant. Case to be decided by 07/04/2017. ABP Ref: PL03 .247632. Granted permission 24/04/2017.
16708	Clare County Council	ReeveWave Limited	Dough, Lisdeen, Termon west, Kilkee, Co. Clare	12/09/2016	15.9	-	6.9	Granted (Local Authority)	Granted (27/02/2017)
16654	Clare County	ReeveWave Limited	Knockanulty, Ennistymon, Co. Clare	22/08/2016	15.4	-	6.7	Granted	Granted (20/01/2017)

	Council							(Local Authority)	
165455	Cork County Council	ReeveWave Limited	Carragraigue, Tathcool, Co. Cork	15/06/2016	15.3	-	6.7	Decision Pending	Generating Capacity not popping up in https://dev.phr.ie/solar-apps/#/applications/d066a9c858aded59325548d0373c7c9b?_k=6r3774 FIXED
167215	Cork County Council	Highfield Solar	Curraduff, Glenlara, Newmarket, Co. Cork	21/12/2016	8.0		3.5	Further Information (FI)	
164204	Cork County Council	Green Mills Energy Ltd.	Farrangalway, Knocknahilan, Mullandunny, Kinsale, Co.Cork	05/02/2016	13.0	5.0	-	Granted (An Bord Pleanala)	Granted (13/10/2016). Appealed, third party vs grant to An Bord Plenala. Abp Ref: PL 04.247521. Case to be decided by 20/03/2017.
166410	Cork County Council	Highfield Solar	Kilcummer Upper, Castletownroche, Co. Cork	29/09/2016	21.9	-	9.5	Granted (Local Authority)	Granted (26/01/2017)
16441	Cork County Council	Premier Solar Ltd	Derryclogh Upper and Lahanaght, Drinagh, Co. Cork	07/07/2016	14.1	5.0	-	Granted (Local Authority)	Granted (19/12/2016)
166302	Cork County Council	Temporis Ltd	Tead More, Ballynacorra, Midleton, Co. Cork	16/06/2016	10.3	-	4.5	Granted (Local Authority)	Granted 08/05/2017
165269	Cork County Council	IQ Solar Ltd	Crocane Windfarm, Cloyne, Co. Cork	20/05/2016	14.0	7.5		Granted (Local Authority)	
164783	Cork County Council	Amarenco Solar Beal na mBlath	Currabeha, Crookstown, Co. Cork	08/04/2016	8.5	5.0	-	Granted (Local Authority)	09/05/2017
164601	Cork County Council	Amarenco Solar Kanturk Limited	Dromalour, Coolclogh, Kanturk, County Cork	16/03/2016	12.2	5.0	-	Granted (Local Authority)	Granted (28/02/2017)
164570	Cork County Council	Amarenco Solar Rathcormac	Corrin/Kill-Saint-Anne-North, Castlelyons, Fermoy, County Cork	11/03/2016	8.7	5.0	-	Granted (Local	

		Limited						Authority)	
164185	Cork County Council	Amarenco Solar Whitechurch Limited	Dromgarriff South, Whitechurch, Co. Cork	03/02/2016	10.2	5.0	-	Granted (Local Authority)	Granted (16/01/2017)
165414	Cork County Council	Amarenco Solar Ballinvarrig Limited	Ballinvarrig East, Castlelyons, Co. Cork	10/06/2016	8.9	5.0	-	On Appeal	New application on site where application ref. 164290 was refused. PL. 04.248400. Thrid Party
164290	Cork County Council	Amarenco Solar Ballinvarrig Limited	Ballinvarrig East, Castlelyons, Co. Cork	12/02/2016	8.6	5.0	-	Refused (Local Authority)	Refused by local authority on ground of access (road) (06/04/2016).
F16A/0562	Fingal County Council	JBM Solar Development Ltd.	Kilsallaghan, Co. Dublin.	08/12/2016	42.6	23.0		Further Information (FI)	
F16A/0369	Fingal County Council	Solas Éireann Devlopment Ltd.	Matt, Balbriggan, Co. Dublin	26/08/2016	10.8	6.0	-	Granted (Local Authority)	Granted (21/02/2017)
F16A/0105	Fingal County Council	Soleirtricity Ballykea Ltd.	Featherbed Lane, Ballykea, Loughshinny, Co. Dublin.	16/03/2016	10.1	5.0	-	Granted (Local Authority)	Granted (11/01/2017)
16259	Galway County Council	Templederry Energy Resources Limited	Barnaderg, Co. Galway	04/03/2016	11.8	-	5.1	Granted (Local Authority)	40,000 square metres of solar photovoltaic panels.
161500	Galway County Council	HTS Source Renewable Partners Ltd.	Longford, Co. Galway	03/11/2016	11.8	5.0		On Appeal	First party vs. financial contributions. 16/05/2017 ABP Ref: PL07.248509
161123	Kerry County Council	Terra Solar Limited	Ballyenaghty, Tralee, Co. Kerry	16/11/2016	29.9		13.0	Further Information (FI)	
16877	Kerry County Council	Terra Solar Limited	Ballygrenane, Co. Kerry	12/09/2016	12.1		5.3	Granted (An Bord Pleanala)	Refused (04/11/2016). Appealed to An Bord Pleanala on 30/1/2016 (ABP Ref: PL91 .247653)
16689	Kerry County Council	Terra Solar Limited	Coolcorcoran and Coolgarriv, Killarney, Co. Kerry	14/07/2016	12.8	-	5.6	Granted (An Bord	Granted (28/11/2016) Appealed, third party vs. grant to ABP on 22/12/2016 (ABP Ref: PL08 .247778). Granted on 09/05/2017)

								Pleanala)	
15772	Kerry County Council	Gerry Quane	Kilcolman and Glanwillin, Astee, Co. Kerry	28/07/2016	12.4	5.0	-	Granted (Local Authority)	Granted
16201	Kerry County Council	Noel & Mary Doyle	Rangue, Kilorglin, Co. Kerry	03/03/2016	10.2	5.0	-	Granted (Local Authority)	Granted (22/08/2016)
16802	Kerry County Council	ReeveWave Limited	Drumroe,Causeway, Co.Kerry	19/08/2016	15.6	-	6.8	On Appeal	Firsty party vs. financial condition appeal. Lodged 03/05/2017
16629	Kerry County Council	Terra Solar Limited	Trienearagh, Duagh, Co. Kerry	14/06/2016	8.8	-	3.8	Refused (Local Authority)	20,113 square metres of solar panels.
161265	Kildare County Council	Power Capital Renewable Energy	Dysart, Johnstownbridge, Co. Kildare	07/12/2016	35.6		15.5	Granted (Local Authority)	Granted (21/04/2017)
161007	Kildare County Council	Renewable Energy Systems (RES)	Moatstown Development Site, Milltown, Athy, Co. Kildare	22/09/2016	12.0	5.0		Granted (Local Authority)	Granted (20/03/2017)
16848	Kildare County Council	Solas Éireann Development Limited	Confey, Leixlip, Co. Kildare	11/08/2016	16.9	10.0	-	Granted (Local Authority)	Granted
16777	Kildare County Council	Solas Éireann Development Limited	North of the L1015 Road , Confey, Leixlip,Co. Kildare	20/07/2016	12.1	7.8	-	Granted (Local Authority)	Granted (17/10/2016)
16607	Kilkenny County Council	Pascal and Niall Drennan	Parksgrove, Ballyragget, Co. Kilkenny	13/09/2016	17.9	-	7.8	Decision Pending	
16778	Kilkenny County Council	ART Generation	Ballytobin and Ballyhall, Callan, Co. Kilkenny	21/11/2016	9.8	5.0		Granted (Local Authority)	Granted on 24/04/2017
16634	Kilkenny County	Elgin Energy Services	Keatingstown, Co. Kilkenny	26/09/2016	14.0		6.1	Granted (Local	Granted (28/023/2017)

	Council							Authority)	
16445	Kilkenny County Council	Highfield Solar Limited	Derrynahinch,Knocktopher, Co.Kilkenny	06/07/2016	10.6	-	4.6	Granted (Local Authority)	Granted (17/01/2017). Third party vs grant appeal. ABP Ref PL10.247979
16411	Kilkenny County Council	Power Capital Renewable Energy	Grange Lower, Goresbridge, Co. Kilkenny	24/06/2016	11.9	5.0		Granted (Local Authority)	Granted (24/10/2016)
16276	Kilkenny County Council	Power Capital Renewable Energy	Loan, Castlecomer, Co. Kilkenny	05/06/2016	13.5	5.0	-	Granted (Local Authority)	Granted (09/11/2016)
16310	Kilkenny County Council	Elgin Energy Services	Kiltorcan and Ballyhale, Co, Kilkenny	16/05/2016	10.0	4.2	-	Granted (Local Authority)	Decision made 15/09/2016
16193	Kilkenny County Council	Wexford Solar Power	Curraghmartin, Carrigeen, Co. Kilkenny	01/04/2016	8.1	4.0	-	Granted (Local Authority)	Granted (14/11/2016)
161	Kilkenny County Council	Elgin Energy Services	Grange Lower, Goresbridge, Co. Kilkenny	05/01/2016	11.3	4.0	-	Granted (Local Authority)	Decision made 14/04/2016
16592	Kilkenny County Council	Solar Sense Ltd	Ballyhale And Kiltorcan, Co. Kilkenny	06/09/2016	13.9	-	6.0	On Appeal	Refused on two grounds (Synopsis) 1. Development Plan Objective (Upland Area) 2. Visual impact, regional road + nearby village. Refused 30/10/2016. Appealed to ABP, due to be decided by 05/04/2017. ABP Ref: PL10 .247616
16228	Kilkenny County Council	Highfield Solar Limited	Gorteens, Belview, Co. Kilkenny	19/04/2016	21.9	-	9.5	Refused (An Bord Pleanala).	First party vs refusal lodged to An Bord Pleanala, 07/07/2016 with a decision being due on 09/11/2016. Refused permission by ABP on the 30/11/2016.
16536	Laois County Council	Elgin Energy Services	Acragar, Mountmellick, Co Laois	28/10/2016	12.4	4.2		Granted (Local Authority)	Granted (22/12/2016)
16505	Laois County Council	JBM Solar Developments Ltd	Sronagh, Mountmellick, Co. Laois	12/10/2016	13.9	6.5		Granted (Local Authority)	Granted (27/02/2017). First party appeal vs condition (financial). ABP Ref:11.248244

16500	Laois County Council	JBM Solar Developments Ltd	Rathleague, Portlaoise, Co. Laois	10/10/2016	10.7	5.0		Granted (Local Authority)	Granted (01/03/2017). First party appeal vs condition (financial). ABP Ref: 11.248238
16217	Laois County Council	Elgin Energy Services	Derry More, Mountrath, Co. Laois	11/05/2016	12.5	4.2	-	Granted (Local Authority)	Granted (03/02/2017)
16900	Limerick City and County Council	Rengen Technologies Ltd	Grange Upper, Annacotty, Co. Limerick	26/09/2016	12.1	-	5.3	Decision Pending	
16957	Limerick City and County Council	Terra Solar Limited	Woodstown, Lisnagry, Co. Limerick	14/10/2016	12.0	5.0		Granted (Local Authority)	Granted (28/10/2017) Appealed, third party vs grant. ABP Ref:PL91 .248066
16619	Limerick City and County Council	JBM Solar Developments Ltd	Dungeeha, Newcastle West, Co. Limerick	08/07/2016	26.6	11.5	-	Granted (Local Authority)	Granted (24/01/2017)
1681	Longford County Council	Elgin Energy Services	Lisnageeragh, Edgeworthstown, Co Longford	15/04/2016	14.6	4.2	-	Granted (An Bord Pleanala)	Decision made 09/06/2016. Appeal lodged 05/07/2016. Granted: 07/11/2016
16524	Louth County Council	Wexford Solar	Willville, Dundalk, Co Louth	29/07/2016	10.1	4.0	-	Granted (Local Authority)	Granted (05/12/2016). Appealed, third party vs grant to An Bord Pleanala on the 09/01/2017. ABP Ref: Pl 15.247808
AA161441	Meath County Council	Solar Farmers Ltd	Doghtog, Crakenstown & Bodeen, Ratoath, Co. Meath	21/12/2016	52.2	20.0		Decision Pending	
AA161238	Meath County Council	Power Capital Renewable Energy Limited	Irishtown, Kilbrew, Co. Meath	15/11/2016	20.2	12.5		Decision Pending	
KA161206	Meath County Council	Elgin Energy Services Limited	Kilkeelan, Athboy, Co. Meath	09/11/2016	17.8	8.4	-	Further Information (FI)	
KA161319	Meath County Council	Gaelectric Renewable Energy	Martinstown, Athboy, Co. Meath	30/11/2016	16.1	-	7.0	Granted (Local	Granted (02/02/2017)

		Developments Ltd						Authority)	
LB161046	Meath County Council	Renewable Energy Systems (RES Ltd.)	Dardistown, Julianstown, Co. Meath	26/09/2016	10.3	-	4.5	Granted (Local Authority)	Granted (20/03/2017)
LB160998	Meath County Council	Solar Farmers Ltd	Julianstown East, Julianstown West and, Ninch, Co. Meath	13/09/2016	42.6	20.0	-	Granted (Local Authority)	Granted (27/01/2017). Appealed Third party vs. grant. ABP Ref: PL17.248028
LB160898	Meath County Council	Highfield Solar Limited	Garballagh, Thomastown, Gillinstown and Downestown, Duleek, Co. Meath	16/08/2016	150.3	-	65.3	Granted (Local Authority)	Expected MEC is projected to be between 60-75MW. Three items of FI requested. Republication required. Granted 10.02.2017. Third party appeal lodged with ABP. Ref: PL17 .248146
KA160625	Meath County Council	Elgin Energy Services Limited	Oldtully, Oldcastle, Co. Meath	15/06/2016	12.4	-	5.4	Granted (Local Authority)	Granted on the 16/11/2016
AA160553	Meath County Council	Bullstown Solar Limited	Bullstown, Donaghmore, Ashbourne, Co. Meath.	01/06/2016	17.5	-	7.6	Granted (Local Authority)	Granted (21/01/2017)
AA160519	Meath County Council	Wexford Solar Limited	Kilbreckstown, Stamullen, Co. Meath	25/05/2016	9.9	4.0		Granted (Local Authority)	Granted 17/08/2016
16246	Offaly County Council	Highfield Solar Limited	Clonin, Rhode, Co. Offaly	09/08/2016	96.6	-	42.0	Granted (Local Authority)	Granted (28/01/2017)
16113	Offaly County Council	HTS Source Renewable Partners Ltd.	Lehinch, Clara, Co. Offaly	25/04/2016	15.0	5.0	-	Granted (Local Authority)	Granted (06/10/2016)
16277	Roscommon County Council	Elgin Energy Services	Rathleg, Castlerea, Co. Roscommon	04/07/2016	11.9	4.2	-	Further Information (FI)	
16600917	Tipperary County Council	IGP Solar 8 Ltd	Leonards Bog, The Sheedys, Derrymore, Roscrea, Co. Tipperary	10/10/2016	58.1	-	25.3	Decision Pending	

16600642	Tipperary County Council	ReeveWave Limited	Monroe East, Ardfinnan, Clonmel, Co. Tipperary	06/07/2016	14.6	5.9	-	Further Information (FI)	
16601136	Tipperary County Council	Grian PV Ltd	Horsepasture, Clonmel, Co. Tipperary	09/12/2016	21.8	11.2		Granted (Local Authority)	Granted (23/03/2017)
16600484	Tipperary County Council	Elgin Energy Services	Lisnagonoge & Commons, Thurles	26/05/2016	11.2	4.2	-	Granted (Local Authority)	Granted (05/03/2017)
16600359	Tipperary County Council	Elgin Energy Services	Ballynilard, Tipperary, Co. Tipperary	22/04/2016	10.8	4.2	-	Granted (Local Authority)	Granted on the 11/11/2016
16600170	Tipperary County Council	Templederry Energy Resources Limited	Moyneard, Moyne, Co. Tipperary	04/03/2016	9.6	-	4.2	Granted (Local Authority)	Granted (28/10/2016)
16600136	Tipperary County Council	Trevor Armitage	Lacka, Carrig, Birr, Co Offaly	24/02/2016	9.6	4.0	-	Granted (Local Authority)	Decision made 19/07/2016
16600640	Tipperary County Council	Solar Sense Ltd	Ballynagrana and Deerparklodge, Carrick-on-Suir, Co. Tipperary	07/07/2016	13.4	-	5.8	On Appeal	Granted (09/02/2017). Third party vs. grant appeal to An Bord Pleanala. ABP Ref: PL 92.248089
16600565	Tipperary County Council	Lightsource Renewable Energy Ireland Limited	Monaraha, Cahir, Co. Tipperary	20/06/2016	33.3	19.1	-	On Appeal	Granted (26/10/2016). Appealed, financial to An Bord Pleanala. Adjacent Cahir 110kV substation
16600465	Tipperary County Council	Solar Sense Ltd	Loughlohery, Cahir, Co. Tipperary	20/05/2016	13.3	-	5.8	On Appeal	Decision granted (26/09/2016). First party appeal against development contributions (ABP Ref: PL92.247443)
16737	Waterford City and County Council	RES Ltd	Raheens, Co Waterford	16/11/2016	26.5	-	11.5	Further Information (FI)	
16126	Waterford City and	Highfield Solar	Drumroe, Cappoquin, Co. Waterford	01/03/2016	28.8	-	12.5	Granted (An Bord	Decision made (05/06/2016). Appealed to An Bord Pleanala, third party vs grant on the

	County Council	Limited						Pleanala)	12/07/2016). Granted by ABP on 15/11/2016.
16548	Waterford City and County Council	Highfield Solar Limited	Clashganny and Coolroe, Portlaw, Co. Waterford	19/08/2016	26.5	-	10.0	Granted (Local Authority)	Decided (09/03/2017)
16309	Waterford City and County Council	Highfield Solar Limited	Amberhill, Kilmeaden, Co. Waterford	10/05/2016	11.5	5.4	-	Granted (Local Authority)	Appealed, first party vs condition. ABP Ref: PL 93.247558. Appeal withdrawn on 17/02/2017.
16371	Waterford City and County Council	Highfield Solar Limited	Ballymoodranagh, Lismore, Co. Waterford	03/06/2016	12.6	-	5.5	On Appeal	Refused. Appealed, first party against refusal. ABP Ref: PL 93.247677.
166264	Westmeath County Council	Elgin Energy Services	Marlinstown, Mullingar, Co.Westmeath	04/11/2016	12.5	4.2	-	Further Information (FI)	
166184	Westmeath County Council	Thomas Flynn	Newdown, The Downs, Mullingar, Co.Westmeath	26/07/2016	9.3	5.0	-	Further Information (FI)	
20160811	Wexford County Council	Highfield Solar Limited	Newtown Big & Ralphtown & Muchtown, Kilcowan, Co. Wexford	15/07/2016	31.3	-	13.6	Granted (An Bord Pleanala)	Decision to refuse development made on 07/09/2016. Reasons for refusal , 1. Glint and Glare (Residential), 2. Glint and Glare (Roads). Appealed to ABP: Due to be decided by 15/02/2016. ABP Ref: PL26 .247366. Granted by ABP 23/03/2017.
20160717	Wexford County Council	Highfield Solar Limited	Tomfarney, Clonroche, Co. Wexford	24/06/2016	19.9	12.0	-	Granted (An Bord Pleanala)	First Party VS. Refusal appeal to An Bord Pleanala (Ref: PL 26.247179). Granted by ABP on 21/12/2016
20160689	Wexford County Council	Highfield Solar Limited	Monfin, Enniscorthy, Co. Wexford	17/06/2016	12.7	-	5.5	Granted (An Bord Pleanala)	First Party VS. Refusal appeal to An Bord Pleanala (Ref:PL 26.247176) Granted by ABP: 10/01/2017
20161097	Wexford County Council	Crory Energy Ltd	Tincurry, Ballycarney, Co. Wexford	04/11/2016	9.6	5.0		Granted (Local Authority)	Granted (18/11/2016). Same locatin as 231 above
20161231	Wexford County Council	Solas Eireann Development Ltd.	Tincurry, Ballycarney, Co. Wexford	04/11/2016	8.0	5.3		Granted (Local Authority)	Granted 16/12/2016.

20161217	Wexford County Council	Renewable Energy Systems (RES)	Banoge, Courtown, Co. Wexford	02/11/2016	10.0	5.0		Granted (Local Authority)	Granted (16/12/2016|)
20161110	Wexford County Council	Harmony Solar Ralphtown Limited	Dennistown, Milltown, Sallystown, Murntown Lower, Co. Wexford	07/10/2016	39.6	20.0		Granted (Local Authority)	Granted (30/11/2016) Appealed (first party vs financial contributions)
20160644	Wexford County Council	Arena Capital Partners	Ballykereen, Rosslare, Co. Wexford	10/06/2016	22.8	11.0	-	Granted (Local Authority)	Granted (22/07/2016)
20160594	Wexford County Council	Power Capital	Ballycarney, Ballycarney, Co. Wexford	31/05/2016	12.9	5.0	-	Granted (Local Authority)	Granted (20/07/2016)
20160595	Wexford County Council	Power Capital	Ballycarney, Ballycarney, Co. Wexford	31/05/2016	10.8	5.0	-	Granted (Local Authority)	Granted (20/07/2016)
20160520	Wexford County Council	Wexford Solar Power	Ballycarran, Rosslare, Co. Wexford	17/05/2016	10.0	4.0	-	Granted (Local Authority)	Granted (16/08/2016)
20160487	Wexford County Council	Davidstown Renewables Limited	Davidstown, The Leap, Co. Wexford	10/05/2016	10.3	5.0	-	Granted (Local Authority)	Granted (29/06/2016)
20160442	Wexford County Council	Highfield Solar Limited	Ballymackesy, Clonroche, Co. Wexford	29/04/2016	12.7	-	5.5	Granted (Local Authority)	Granted (22/06/2016)
20160207	Wexford County Council	Highfield Solar Limited	Sweetsfarm & St. Johns, Enniscorthy, Co. Wexford	03/03/2016	7.5	-	3.3	Granted (Local Authority)	Granted (20/07/2016)
20160008	Wexford County Council	Philip Hore	Ballycarran, Rosslare, Co. Wexford	08/01/2016	10.0	4.0		Granted (Local Authority)	Granted (26/02/2016)
20160009	Wexford	Wexford Solar	Ballycarran, Rosslare, Co. Wexford	08/01/2016	10.0	4.0	-	Granted (Local	Granted (26/02/2016)

	County Council	Power						Authority)	
20161449	Wexford County Council	RES Ltd	Bannoge, Courtown, Co. Wexford	23/12/2016	11.0	5.0		On Appeal	Refused on 22/02/2017. Landscape and visual impact was the sole grounds for refusal advanced by the local authority. Appeal (first party) to ABP. Ref: PL26.248210.
20161212	Wexford County Council	Harmony Solar Ralphtown Limited	Brookhill, Ballyhoge, Co. Wexford	01/11/2016	84.3		36.7	On Appeal	Refused (16/12/2016) Appealed to An Bord Pleanala (ABP Ref: PL26 .247886) Appeal to An Bord Pleanala (ABP Ref: PL26 .247886)
20161096	Wexford County Council	Solas Eireann Development Ltd.	Ballybrennan Little, Rosslare, Co. Wexford	04/10/2016	9.9	5.9		On Appeal	Refused (25/11/2016). Appealed to ABP. First party vs refusal. ABP Ref: PL26 .247780
20160690	Wexford County Council	Highfield Solar Limited	Ballyminaun, Grahormick,Hilltown, Jonastown, Newhouse,Gibboghstown, and Garryh, Co. Wexford	17/06/2016	89.5	-	38.9	Refused (An Bord Pleanala).	First Party VS. Refusal appeal to An Bord Pleanala (Ref: PL 26.247217). Details available by 13/01/2017. Refused by An Bord Pleanala, decision published on 07/02/2017.
20160596	Wexford County Council	Power Capital	Ballygoman, Carrick, Co. Wexford	31/05/2016	11.7	5.0	-	Refused (Local Authority)	Refused (23/07.2016)
16176	Wicklow County Council	Highfield Solar Ltd	Ballycooleen, Avoca, Co. Wicklow	19/02/2016	13.8	-	6.0	Granted (An Bord Pleanala)	Refused local authority (06/04/2016). Appealed to An Bord Pleanala on 03/05/2016. Permission was granted on 18/08/2016.
161285	Wicklow County Council	Highfield Solar Ltd	Coolboy, Killbride, Co. Wicklow	24/11/2016	21.5	-	9.3	Granted (Local Authority)	Granted 19/04/2017
161082	Wicklow County Council	Liam Shanahan	Grange North, Newcastle, Co. Wicklow	30/09/2016	14.3	-	6.2	Granted (Local Authority)	Granted on the 24/11/2016
16664	Wicklow County Council	Ashley Bourne	Golden Fort, Baltinglass, Co. Wicklow	14/06/2016	0.4	0.5	-	Granted (Local Authority)	Granted on (09/02/2017)
161380	Wicklow County Council	Gaelectric Renewable Energy Developments Ltd	Ballinaclogh, Rathnew, Co. Wicklow	13/12/2016	23.0	9.8		On Appeal	Granted (05/04/2017). PL 27.248424
161099	Wicklow County Council	Gaelectric Renewable Energy Developments Ltd	Garrymore Upper, Rathdrum, Co. Wicklow	04/10/2016	15.4	-	6.7	On Appeal	Granted on the 06/01/2017. Third party vs Grant appeal to An Bord Pleanala. ABP Ref: PL27.247942

16307	Wicklow County Council	Today's Generation Ltd	Kiltimon, Newtownmount-kennedy, Co. Wicklow	24/03/2016	1.9	-	0.8	On Appeal	On appeal to An Bord Pleanala (third party) Ref: PL27.248258
161060	Wicklow County Council	Solas Eireann Development Ltd	Threecastles, Talbotstown Lower, Blessington, Co. Wicklow	23/09/2016	30.1	19.0	-	Refused (An Bord Pleanala)	Refused on the 17/11/2016. Two grounds for refusal relating to environmental matters were advanced by the LA. On appeal to An Bord Pleanala, ABP Ref: PL 27.247714. Refused by ABP on 26/04/2017