

IRISH SOLAR ENERGY ASSOCIATION
Community Participation Proposals
8th November, 2016



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Photo: Elgin Energy



Photo: Lightsource



FORWARD

A message from David Maguire, Chairman of ISEA.

The Irish Solar Energy Association (ISEA) was founded in May 2013 and is the solar industry representative body for the island of Ireland. With over 100 members, ISEA represents a wide section of stakeholders in the sector. ISEA is committed to contributing to the development of viable renewable energy policies that support the development of solar in Ireland and that contributes to Ireland's economic and environmental future. A recent report by KPMG (commissioned by ISEA and part funded by SEAI) found that the correct support mechanism for solar PV could deliver over 7,000 jobs and €3 in direct contribution to the economy for every €1 of support.

Solar is a mature technology that has minimal impact on the environment with maximum benefits. Last year the global investment in new solar was over \$161bn, which was more than coal and gas combined. Solar is and has been the leading form of renewable technology globally for a number of years and the cheapest form of renewable energy generation after wind in northern Europe. Yet Ireland is the last EU Member State to introduce a support mechanism for solar PV. This has its benefits in that Ireland has a late mover advantage to this technology and we can now deploy solar into our energy mix in a cost effective and sustainable manner. We can learn from the mistakes of others and implement best practice in designing the support mechanism, planning guidelines, quality standards, and the interaction of solar with agriculture; community; and biodiversity. We are actively working to bring forward recommendations in each of these areas.

Community involvement in the renewable energy sector and is a cornerstone to developing a long term sustainable industry while delivering value for money to the consumer. As a group we wish to; deliver effective community engagement; propose a workable community benefit solution and; propose real solutions for community shared ownership. Meaningful community participation in terms of shared ownership and benefit can be achieved but there are costs entailed with implementing a workable solution and these must be addressed to give value to the consumer and citizen.

This document represents ISEA's initial proposals for community involvement in solar in Ireland and is a consultation document. The ISEA welcomes any input and comment in advance of finalising these proposals by 1st January 2017. I would urge all stakeholder to engage with this process and the wider discussion in this area.

David Maguire
Chairman of ISEA

ISEA Community Working Group.

The members of the ISEA Community Working Group are as follows:

Conall Bolger, Group Chair (Gemserv); Barry Walsh (Temporis Capital); Sabrina Dekker (BNRG); Doug Farrell (Power Capital); Joe Hayden (Codema); Lúgh Ó Braonáin (SEAI and Energy Co-Ops); Paula Galvin (Planning Consultant); Sarah Stapleton (ESB); Brendan O'Brien (JBM); Craig Naude (Solar Secure Bond); Cormac Walsh (energy co-ops); David Cramer (JBM); Michael Quirk (Farmer and developer); Tom Loughrey (Lightsource).

ISEA COMMUNITY WORKING GROUP – PROPOSALS

The widespread development of solar photovoltaics (PV) in Ireland would see the creation of more than 7,300 high value jobs throughout the country and help save Ireland from EU fines in excess of €300 million a year from 2020.¹ The Irish Solar Energy Association (ISEA) is committed to developing the Irish solar sector in a responsible manner. With increased attention in relation to greater community involvement in energy projects, partly driven by such developments as the Community Energy Proclamation² and the Energy White Paper³, ISEA has developed the following draft proposals in relation to community energy and community benefit:

1. A suggested approach towards community benefit;
2. A proposal for a community investment fund; and
3. A model describing a preferred approach to community ownership of solar energy projects.

The proposals represent a range of levels of community involvement: the first is the most passive whereby they receive a benefit from the project; the second allows citizens to invest across a portfolio of solar projects; and the third results in direct involvement in a specific project.

This paper is structured as follows:

- Firstly, it summarises a number of key benefits of solar PV;
- Secondly, to provide context to the discussion of community participation, it discusses the economics of solar PV projects; and
- Third, it provides more detail on the three proposals above.

This document has been prepared by the association with the intent of informing policy makers in their discussions on community and solar. The analysis below suggests that policy should not mandate ownership, but encourage it for larger sites, and designate smaller sites as being more suitable for benefit rather than ownership. In order to encourage community ownership to become the market norm, it would need to be supplemented by other policies such as subsidy uplift for projects with community investors and tax incentives for community investors (discussed under Proposal 3).

¹ <http://irishsolarenergy.org/wp-content/uploads/2016/06/ISEA-Press-Release-FINAL.pdf>

² http://www.foe.ie/download/pdf/community_energy_proclamation.pdf

³ <http://www.dccae.gov.ie/energy/en-ie/Energy-Initiatives/pages/white-paper-on-energy-policy-in-ireland.aspx>

BENEFITS OF SOLAR PV

In addition to the decarbonisation of power supply, a crucial tool in mitigating climate change, solar PV has a number of benefits for a community in addition to any economic impact created by community benefit or community ownership structures. These positive gains include:

1. Solar is the cheapest form of renewable energy generation after on-shore wind.
2. The potential, through use of smart technologies, for residents to use locally generated renewable electricity;
3. Local farmer or landowner secures an additional income which may help with people remaining on the land in difficult times for rural communities;
4. KPMG estimate that for every euro of support a solar industry in Ireland would contribute three euro back in Gross Value Add and tax to the economy.
5. Tens of thousands of euro of council rates get paid annually which should help with local amenity such as upkeep of the roads in the area;
6. Similarly, tens of thousands of euro of Development contributions are paid to the local area;
7. Ground mount solar allows dual use of the land with the continuation of farming activity such as sheep grazing on the site.
8. There is likely to be some local benefit from development and construction in the form of additional work in surveying, installation, haulage, quarrying materials etc.; and
9. Solar farms can help improve biodiversity in ways such as:
 - a. Once installed, it is not harmful to local fauna and provides a refuge for wildlife with little disturbance from humans and machinery;
 - b. With appropriate land management practices, there is the potential to transform low ecological agricultural land into species-rich wildlife habitats resulting in net biodiversity gain to sites;
 - c. The land would be rested from intensive agriculture such as pesticides and fertilisers;
 - d. There is minimal ground disturbance as solar panel arrays are piled;
 - e. Much of the land is available for use. While the panels occupy approximately 30-50% of a site, they are raised so 95% of the site is still accessible for plant growth; and
 - f. They have a 25-30 year operational life so there is sufficient time for significant site colonisation by wildlife to achieve tangible biodiversity benefits.

While it is outside of the remit of this paper, a proactive approach to engaging the public in relation to solar PV would be helpful for the industry and is being promoted by ISEA. Community engagement from a planning perspective is being comprehensively dealt with by the ISEA Planning Working Group and their findings and position will be published in the ISEA *'Planning Recommendations for the Development of Ground Mounted Solar PV Systems'* in December 2016.



ECONOMICS OF SOLAR PV

This section sets out some contextual information on the economics of solar that should be considered in the design of any community benefit or ownership models.

Context on the economics of solar PV and community involvement

It is worth noting at the outset that solar PV is a longer term, lower return industry, ('a single digit margin business model'). While solar PV will be vital in achieving our long term renewable energy goals, it is clear that solar projects will not yield the same returns as wind for three main reasons: (a) we do not have equivalent solar resources, (b) the technologies have different capacity factors (wind 30-40%, solar 10-12%) and (c) we will likely be building solar PV under a competitive rather than tariff based subsidy environment, all of which create downward pressure on returns.

To put this simply, a 4MW⁴ project with a CapEx of €6 million approximately would likely return 6-7% to an equity provider. While this return itself would not prevent a community investor from getting involved, there are 2 main challenges with this level of return:

⁴ This is a project of 4MW Maximum Export Capacity (MEC) with an installed capacity of 5MW.

- (1) A community member who wants to invest in a local solar PV project but does not have available capital would need to secure a loan– assuming the need for at least a 70% LTV, standard bank finance would not be sufficient to provide an attractive enough return i.e. a margin of only a few % would be likely in most years, (the CEIF model described as part of Proposal 2 could be developed to help surmount this).
- (2) A community member who has sufficient equity could compare this investment to a solar PV project elsewhere that is part of an EIS investment – this would provide an increased return of up to 12%, making the EIS investment more attractive to the community member than the local solar PV scheme with returns at 6-7%, (incorporating EIS into local community solar PV farms may address this).

Context on economics of project size

Experience with Community Ownership models in the UK, Denmark and elsewhere shows that while there is a more fairness and a greater acceptance of the project within the community, additional transaction and administration cost are inevitable. For a project below a certain size, the absolute returns would not be sufficient to facilitate a full community ownership structure, (e.g. a 10% community ownership could cost 15% of the net margins to administer and maintain); providing community benefit would be the most appropriate means of creating positive community involvement.

Experience in Denmark, the UK indicates and elsewhere indicated that Community models can and do work on a number of levels, however the limitations, risks and cost need to be acknowledged at the outset in order to ensure a long term viable framework can be put in place.

PROPOSAL 1 – COMMUNITY BENEFIT

APPLICABILITY: Pursuing community benefit by itself is most applicable to solar PV sites at or below 4MW⁵, or on 5MW sites that are in poorer solar PV areas. At larger more economic sites both community benefit and ownership structures could be adopted (discussed under Proposal 3). It is assumed that in the event that a developer is providing tangible community benefit, this should be taken into consideration by the Local Planning Authority in calculating the Development Contribution, which should be reduced pro-rata with the value of the community benefit.

⁵ Where absolute returns would make the additional administration associated with Full Community Ownership a cost on the project that would be greater than providing a more streamlined 'benefit),

The group agreed that specific instances of community benefit should be the responsibility of the individual project developers. They agreed a set of principles for application to projects:

- The benefit to the community should be linked to the energy sector or carbon reduction and ideally specific to the project. One option considered was the provision of solar panels to the community where a number of kW of panels would be provided by the developer per MW installed for example 5kW for every 1MW installed. Ideally these systems could be installed in local schools in the first instance. This would provide the long-term benefit of energy savings, additional revenue (in the event of a micro generation tariff) and educational benefits for a 25 year period. One attraction of this approach is that it would deliver tangible benefit to the locality that would also possess symbolic value i.e. it shows solar impacting positively on a community. A further possible attraction for regulator and/or local authorities could be that such an approach would be relatively straightforward to prescribe and monitor. Where a suitable community benefit project (e.g. roof installation or energy efficiency project) cannot be identified by the community then a one-off or annual payment could be made. Fuel poverty or energy efficiency initiatives are also considered to be appropriate vehicles for ISEA.
- The community could organise via the SEAI's SEC programme to manage the interactions with the developer and/or to manage the operations of the benefit (e.g. the SEC programme could help to facilitate the installation of panels provided to a community either on individual homes or on a facility such as a local school).
- The group considered that operating via this framework and encouraging communities to work with the SEAI, would ensure a degree of legitimacy around the operation of the benefit, but also that the full engagement with the framework could provide a deeper understanding of solar PV, as well as the importance of developing renewable energy to the country rather than just seeing it from a local individual perspective. It was suggested that developers proactively engaging with the SEAI, perhaps agreeing to work via a framework which could be valuable to the sector.

PROPOSAL 2 – COMMUNITY ENERGY INVESTMENT FUND

APPLICABILITY: The Community Energy Investment Model allows the wider Irish Community to benefit from the installation of solar PV financially, with the knowledge that they are investing in a sustainable opportunity that has the regulated backing of the Irish State, and help Communities near solar PV projects to invest in projects even if they do not have capital of their own.

Figure 1 sets out how the group envisages the Community Energy Invest Fund (CEIF) as operating.

The Community Energy Investment Fund (CEIF) would be similar to the Special Saving Incentive Account (SSIA). The community investors (individual Irish residents) would invest for a defined period with a set rate of return. As there is a reasonable degree of certainty in relation to the lifetime economics of a solar project, it should be possible to offer a product to those investors.

The CEIF would be owned and operated by the Irish State. It would match any funds provided by private individuals. These funds would be invested across a portfolio of Irish solar projects on commercial terms. The State would guarantee the security of the fund and its returns, allowing it to offer funds to the sector at very competitive rates and also remove the element of risk for the non-professional investor.

The CEIF would be available to all developers to avail of at any stage of the project development process. Developers would contract with the CEIF under appropriate commercial terms.

The CEIF could engage with Communities to provide equitable treatment of those without capital:

- The CEIF could provide loans to Communities interested in partial ownership of a local solar PV project at a lower rate than traditional bank finance. This approach would facilitate and incentivise local communities that may not have easy access to equity, (capital) of their own, without the limitations of low returns from traditional finance.

The CEIF could engage with private capital in a number of ways:

- Partnering with CEIF to co-fund solar projects either individually or across a portfolio;
- Private capital could invest in the CEIF at a fund level.

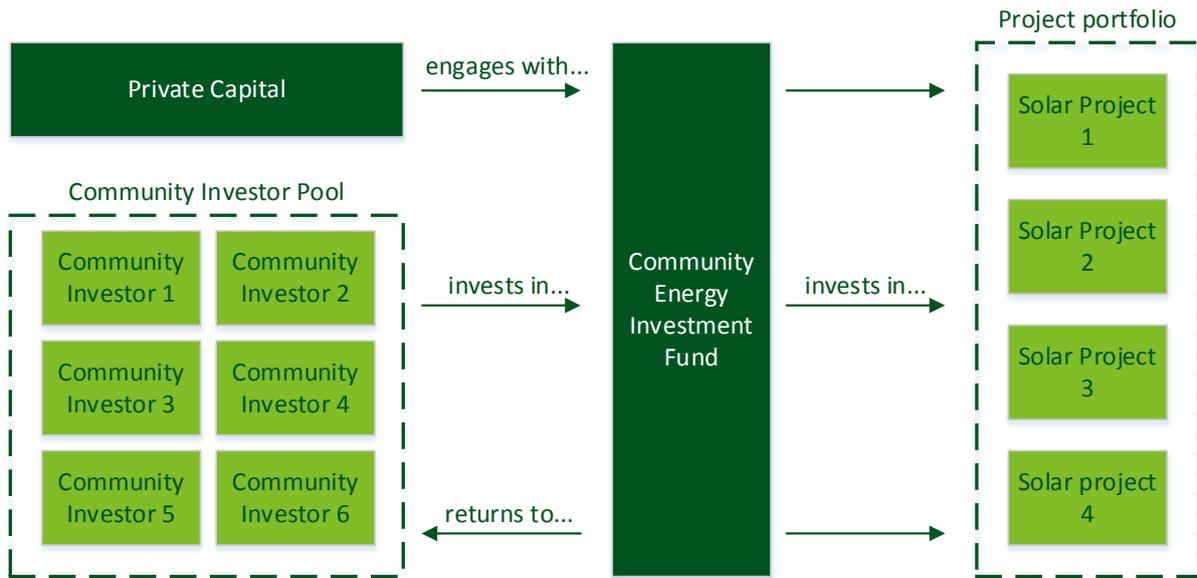


Figure 1: Community Energy Investment Fund Proposal

The CEIF would not be a qualifier for premium pricing (discussed above under “Policy Enablers”). Any incentives in relation to investments into the fund should originate in the tax laws of the State.

PROPOSAL 3 – COMMUNITY OWNERSHIP

APPLICABILITY: The Community Ownership is most suitable for larger projects above 5MW, (or possibly starting from a larger size – this will be dependent on the Renewable Electricity Support Scheme (RESS) for solar PV, that can better withstand the additional financial and administrative requirements of Community Ownership. These sites could also pursue a community benefit approach (as set out under Proposal 1).

Figure 2 sets out how the Community Working Group envisages the proposed model of community ownership operating. It is intended that this would be optional as its feasibility on any site would be dependent on that project being capable of providing sufficient returns to the community and the developer.

The project developer manages the project and sets up a project company. The community (via an appropriate community organisation and which would initially be defined as being within a specific geographical radius of e.g. 10km) is offered shares within the project by the project developer. Any payments for project shares are made via a regulated online crowdfunding platform. Developers could expand the offering to neighbouring areas (and potentially further afield), if there is insufficient appetite amongst the project's hinterland community, and up to a total Community Ownership of a recommended 5% minimum

A specific time period should be allotted for initial interest in the community, (e.g. 3 months), after which the offer of ownership could be extended to the wider national community via the crowdfunding platform for an additional period. It is important that the incorporation of community ownership into the equity structure would not delay the successful financial close or construction of the project. Crowdfunding would be an efficient mechanism of keeping transaction costs low while enabling investment from as little as €5 to as much as €500,000 from any one investor.

Upon receipt of payments, the community investors receive shares within the project company. Those shares are likely to be "B Class" i.e. possessing fewer voter rights. The rationale for this status is to enable efficient operation of the project, (i.e. full voting rights of minority shareholders would affect future finance and operation).

In order to mitigate against the delay in raise and drawdown of community funds, it would be useful to have the community investment underwritten by an appropriate State Body. This would ensure that there is no delay in funding drawdown and thus the project can proceed on time. Effectively a bank would provide the funding by way of a revolving facility until the community funds were available.

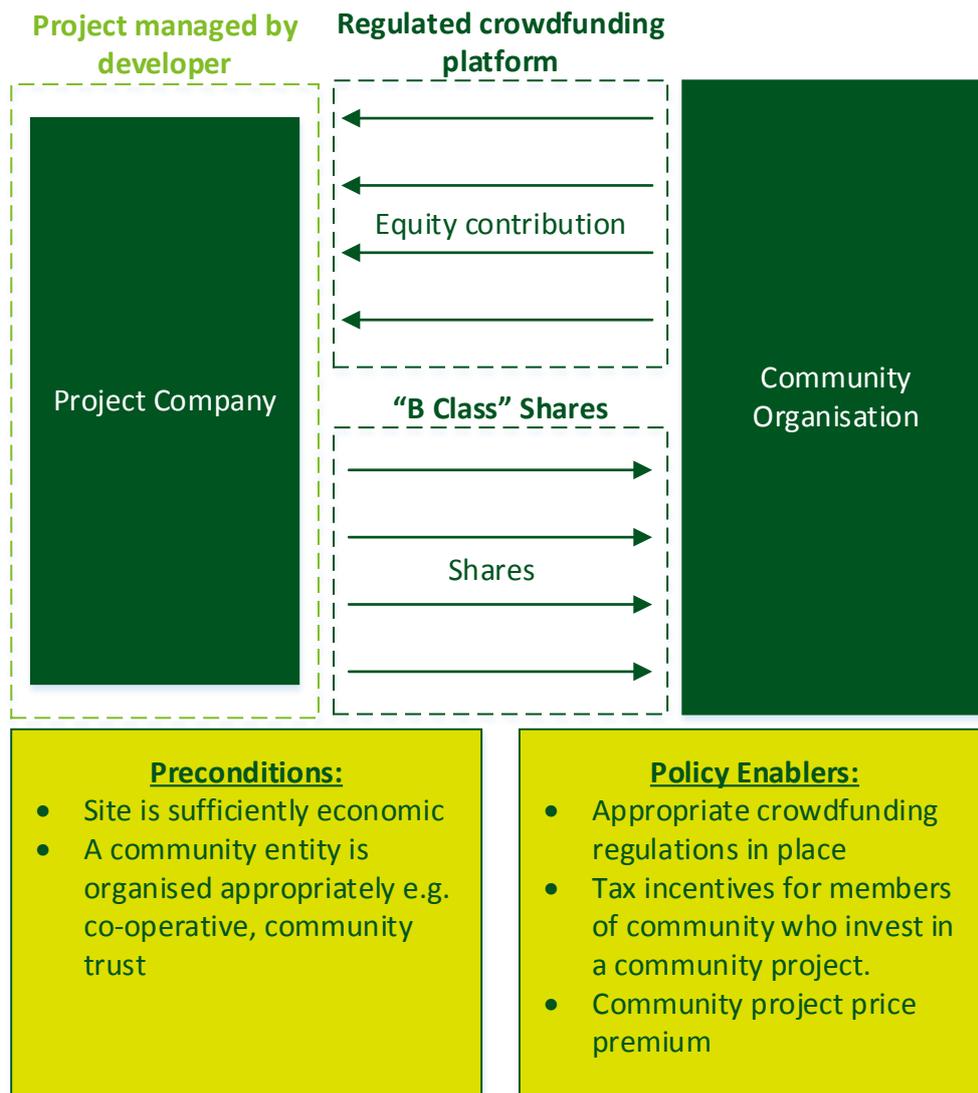


Figure 2: Summary of proposed community ownership model

It is worth noting that every solar PV project carries development risk i.e. a proposed project may not result in an installed project and investors may lose their money. This risk means that consideration needs to be given as to the appropriate time in the lifetime of a project when a community should or shouldn't invest.

Potential community offering

One model for implementing community ownership would be:

- i. The offer of shared ownership of a project should be restricted to a fixed radius of the project e.g. 10km.
- ii. The offer should be made at financial close. As discussed below under "Policy Enablers", the pricing support should give the developer the opportunity to avail of a premium on price, in return, for his seeking this local financial support.

- iii. Landowners of the development site should also be offered the opportunity to participate within the same arrangement.

Crowdfunding

Crowdfunding seems to be a growing mechanism for funding energy projects across Europe. A study from CrowdFundRes⁶, an initiative funded under Horizon 2020 to accelerate renewable development via crowdfunding mechanisms, presented:

- i. Examples of different types of energy technologies ranging from ground mounted solar to rooftop solar, CHP and wind projects that were funded (partially or fully) via crowdfunding. These projects occurred across France, Germany, Austria, Belgium and the UK.
- ii. The quoted levels of successful community ownership across these projects ranged from 7.89% up to 100%.

Preconditions

The following preconditions are necessary for the implementation of the proposed community ownership model.

- i. **Site economics** – the model requires a more economically advantageous site on which to work; there needs to be a sufficient return for both the community and the developer. The required level of engagement and more complex nature of transaction increases the development costs of the project and the perceived risks of same to a capital provider, (based on past experience with solar and wind projects). **It suggests that the policy should not mandate ownership, but encourage it for larger sites, and designate smaller sites as being more suitable for benefit rather than ownership.**
- ii. **Community entity** – if debt is needed to finance the build out of the project, there should be a single entity that holds the community's share. In addition, to ensure efficient project operation there should be a single entity representing the community. Examples of possible structures include: a community co-operative, a community trust or perhaps an Irish-based adaptation of the UK Community Interest Companies (CIC) model

⁶ http://www.crowdfundres.eu/wp-content/uploads/2016/09/CrowdFundRES_Case_Studies.pdf

Policy Enablers

Solar projects generally provide limited but predictable returns in comparison to other investment classes, and on the basis of current models and estimates of potential competitive Renewable subsidies, will not yield much more than 6-7% IRR, (on an unleveraged basis). Given the possible risk to community investors and the comparatively low rates of return, mechanisms should be put in place to enable them and to make them more attractive. In order for community ownership models to work, a number of policy interventions are required. Below are set out some suggestions:

- a. **Crowdfunding regulations** – In order to develop the model above and give adequate comfort to communities, the group is proposing the use of a regulated crowdfunding platform with a passport to sell shares in Ireland. It may be sensible to use a single national platform. In the longer term we would support the development of facilitative crowdfunding regulations as there are challenges in relation to the current crowdfunding regulations in Ireland⁷.
- b. **Tax incentives** – with the limited returns potentially on offer from a solar project, and if the future support mechanism for solar is auction-based resulting in the projects bidding as low a price as possible to secure support, there should be additional incentive to make investment in a project attractive for a community. The group is proposing the development of tax incentive for investors within a community project to encourage their participation, which could take the form of including community solar PV schemes into an Employment Incentive and Investment Scheme (EIS) type structure, or allowing returns on investment to have a reduced tax liability. The comparable mechanism adopted in the UK availed of tax relief of investment into CIC schemes in solar projects.
- c. **Community project price premium** – where a developer was to have community participation as discussed above under “Potential community offering”, the developer should have access to a premium on the price available under the support mechanism, in order for seeking local financial support. Where the developer opts to not make the community offer, they cannot avail of the premium. The group is proposing the Government include such a premium within the support mechanism framework. It would be consistent with practice in a number of other jurisdictions, for example in Ontario Canada there is a “community adder” within the support mechanism for community projects.

⁷ As per the Central Bank notice of June 2014 - <https://www.centralbank.ie/press-area/press-releases/Pages/ConsumerNoticeCrowdfunding.aspx>

The addition of a specific uplift in price paid per kWh generated for a solar PV project that has Community Ownership above a certain percentage, (e.g. 5%) would potentially address the costs of Community Ownership. This uplift would provide for the additional challenges, administration, and work associated with getting the community onboard, setup and administration facilitated. An estimate of uplift quantum, (in the form of an additional e.g. 1.5 per kWh), would need to be calculated based on the final Community Ownership model and the future RESS for solar PV.

CONCLUSION

This document is a consultation paper to contribute to the policy discussions around community participation in renewable energy projects. It proposes three models: a community benefit approach; a Community Energy Investment Fund; and a potential community ownership model. ISEA would hope to engage further with DCCAE and stakeholders on the contents of the above as those policy discussions develop. ISEA welcomes any contribution to this document before 1st January 2017.

Should you wish to participate in this consultation, please email your comments to info@irishsolarenergy.org referencing “Community Consultation”.