

ISEA SUBMISSION

**Response to Initial Public Consultation on the
National Energy & Climate Plan (NECP) 2021 - 2030**

November 2018



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FOREWORD

A message from David Maguire, Chairman of ISEA.

There is an urgent need to accelerate the process of decoupling our economic growth from carbon emissions. Various agencies of the State, including the Environmental Protection Agency and the Climate Change Advisory Council have highlighted this issue for the last few years. In recent times Ireland has experienced significant economic growth after the financial crisis which has been coupled with a dramatic increase in our Green House Gas (GHG) emissions. Policy to date has failed to decouple the economy from carbon emissions. This trajectory is unsustainable. The recent report by the Intergovernmental Panel in Climate Change (IPCC) has demonstrated that the target set in the Paris Agreement will be more difficult to achieve than originally envisaged and that more rapid implementation of climate change policy is urgently required if we are to limit global warming to 2% temperature increase.

The efficient deployment of solar can make a material contribution to meeting our 2030 targets and climate change objectives. As a responsible representative industry body, The Irish Solar Energy Association (ISEA) wants to ensure that the deployment of utility scale, ground mount and roof-top solar is carried out in a manner that delivers value for money to the consumer and gains broad public support. Since 2013 ISEA has been promoting the adoption of a sustainable policy support for solar PV in Ireland.

Renewable energy currently represents 'only' 12.1% of total global power output in 2017. In the last year, more solar capacity was installed than any other form of generation, in fact more solar capacity was installed than fossil fuels and nuclear combined. In the last decade, the adoption of solar generation globally has been a huge success story. The technology is cheaper to deploy than new CCGT, coal and nuclear power plants. 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 onshore-wind in Ireland. The industry in Europe is seeing consistent growth and is expected to contribute over €9.5bn in Gross Value Add (GVA) to the economy and sustain over 175,000 jobs (Full-time Equivalents or FTEs) by 2021. In Europe, solar currently meets 4% of the total electricity demand and is projected to meet over 15% of the demand by 2030. *Bloomberg NEF* estimate that by 2050 renewables will account for 66% of total installed generation capacity globally with solar accounting for 40% of total capacity. *Bloomberg* also estimates that within Europe, renewables will account for 87% of total generating capacity and solar 36% of the total generating capacity by 2050.

Within an Irish Context, on ground mounted projects alone, the industry can deploy 5GW on the basis of annual RESS auctions between now and 2028 which would deliver a total saving to the consumer of circa €313m. By deploying 5GW between now and 2030, the industry would deliver over €4 to the economy in GVA and taxes for every €1 in support. In terms of jobs, this level of deployment would create and over 9,733 FTEs.

In order to reduce our over-reliance on energy imports (currently the highest in Europe), we urgently need to develop our indigenous energy resources. Wind, solar and gas are all important to the future energy security of our Nation. Solar can contribute materially to achieving this goal.

If we wish to de-carbonise our transport sector and broader economy, we need to invest in renewable energy now. For Ireland to remain an attractive destination to Foreign Direct Investment, we need to satisfy the renewable energy requirements of large corporates and put supports in place now to deliver these requirements.

Ireland has shown little leadership thus far in reducing our GHG emissions and solar energy is a key component in meeting our renewable energy targets, de-carbonising our economy, enhancing energy security, contribution to the green economy and maintaining our green image and attractiveness for FDI. Solar can contribute to all the above while empowering the energy citizen and enabling real community involvement.

David Maguire
Chairman of ISEA

EXECUTIVE SUMMARY

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 70 members, ISEA is committed to highlighting the potential for solar energy's contribution to Ireland's economic and environmental future. ISEA is committed to contributing to the development of viable renewable energy policies that support the development of solar in Ireland via research, consultation, conferences and other fora that bring key stakeholders together to shape policy. ISEA is keenly aware that in order to build a long-term sustainable industry in Ireland, a stable regulatory framework is required. To achieve this, the industry must deliver value for money to the exchequer and consumer and gain popular support.

Solar is the fastest growing form of generation technology globally and is projected to represent over 40% of the total electricity generation capacity by 2050. Within Europe solar is projected to meet 36% of electricity demand by 2050.

Solar is the cheapest form of renewable generation after on-shore wind in Ireland and can make a significant contribution to Ireland's indigenous energy production. The industry in Ireland can deliver over 5GW of capacity between 2019 and 2030. In fact, recent analysis has shown that this target is not particularly ambitious for solar in Ireland. At this scale, and with a 20-year CFD, there would be a net saving to the consumer. That capacity quantum could supply the demand equivalent of over 1.2m households. Helping in a significant way towards meeting our 2030 targets.

From a technical perspective, the complementary generation profile of solar PV and wind in Ireland, means solar PV can increase the penetration of renewable electricity without requiring significant new grid infrastructure. Solar could have c2GW of generation available to bid for the first RESS auction. Currently c1,190MW of solar PV projects have planning consent and 922MW are within the planning system¹. 2,631MW of solar PV project have either signed connection agreements or are live and processing with the System Operators.

Solar creates more local employment than any other form of renewables and could deliver over 9,200 jobs between now and 2030. The net contribution to the economy of 5GW between now and 2030 would exceed over €6.5bn.

In terms of citizen empowerment and fuel poverty with the correct support in terms of a suitable Feed-in-Tariff for roof-top solar, this would help alleviate fuel poverty. In addition, solar offers a real opportunity for community involvement and engagement in a positive manner with renewable energy. It enjoys overwhelming public support in the UK and other EU countries.

¹ A report on solar planning statistics have been commissioned by ISEA and can be made available upon request

There are several barriers to market for solar in Ireland and despite the recent announcement of RESS, many of these barriers fall outside of its remit. The ISEA welcome the consultation document and have several key points to raise:

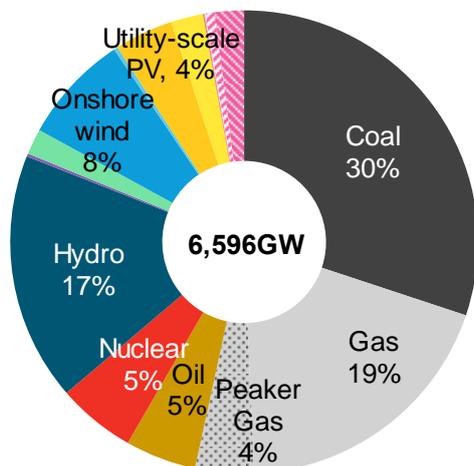
- **Ireland shall not meet the EU wide increase in 2030 targets to 32.5%** unless there is a radical change in current policy.
- We are supportive of a broad and incremental **carbon tax** increase in each budget up to 2030.
- Rather than 55% renewables by 2030, Ireland should target **70% of our electricity to be provided by renewable electricity by 2030.**
- **Biomass** for electricity generation only, should not gain additional policy support. Biomass as Combined Heat and Power (CHP) should benefit from support.
- The practice of **peat burning** for electricity generation should not be supported by government.
- In addition to auctions for large scale solar, ISEA is calling for **Feed-in-Tariffs for roof-top, commercial and Domestic solar.** The combination of these sectors could see 5GW of solar generation capacity deployed by 2030. Roof-top solar of less than 1MW does not require EU State Aid approval.
- Roof-top solar of less than 500kW should be **exempt from requiring planning** permission.
- ISEA call for the standardisation of **development contributions** and local authority **rates.**
- There is a growing demand for renewable energy from large energy consumers in the Irish economy. **Private wire across third party land** should be permitted to enable generators supply large consumers directly behind the meter.
- **Community Benefit** payments from renewable generators should be invested in deploying roof-top solar on local schools and community buildings.
- **Community Investment** is welcomed but should be based on a regulated crowdfund platform and the investment should be underwritten by, and liquidity initially provided by ISIF.
- The presentation of the **PSO needs to be revised** to factor in the cost saving on power prices due to renewable deployment and the community benefit contribution.
- ISEA call for a full **review of grid connections costs** on the distribution and transmissions network as they are the highest in Europe.

These key issues are developed further in our submission.

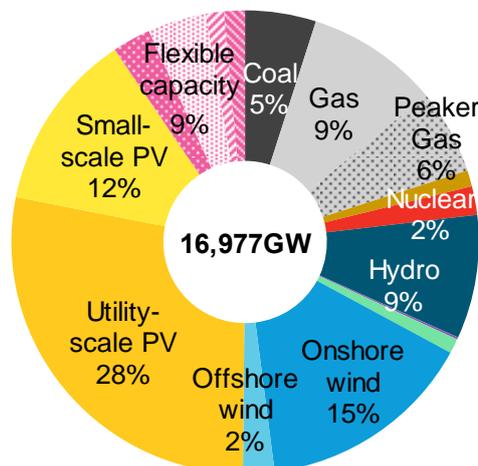
1. THE SOLAR MARKET

In recent years, there has been more investment in solar than coal and gas combined and more than wind in the last six years. Solar PV is set to become the dominant form of new generation globally by 2030. *Bloomberg NEF* estimate in their *2018 New Energy Outlook Report* that by 2050, renewables will account for over 79% of all new generating capacity. Solar PV is expected to account for 40% of all new generation in the same period.

Total installed capacity, 2017 (GW)



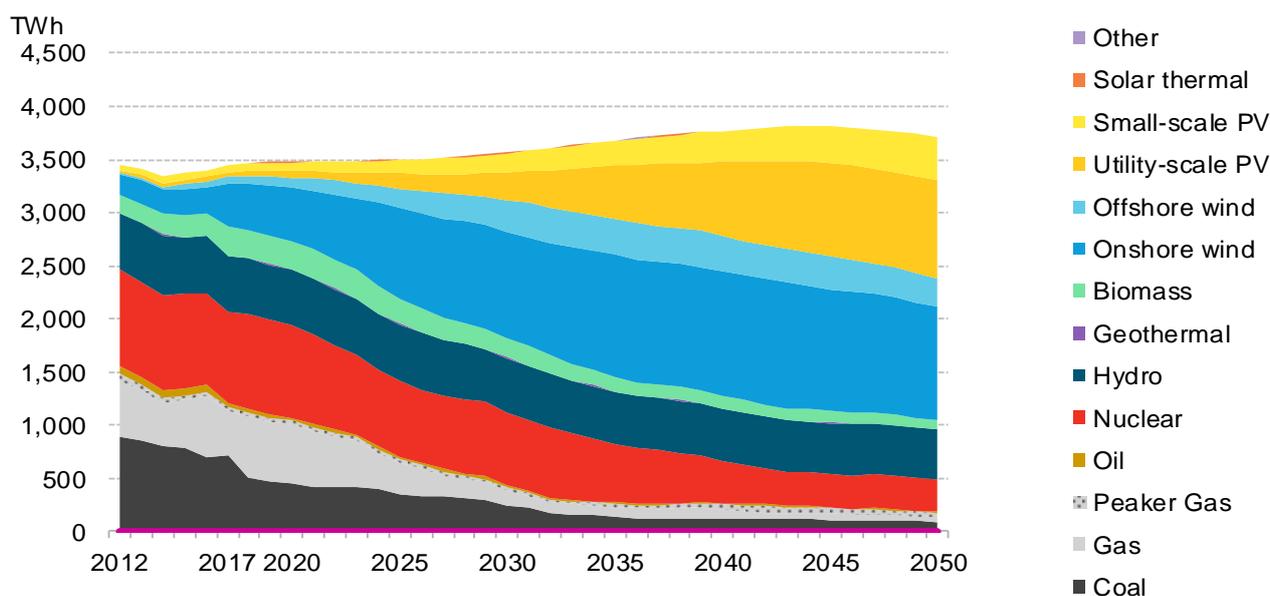
Total installed capacity, 2050 (GW)



These recent projections produced by *Bloomberg* clearly demonstrate a dramatic shift towards renewables and in particular solar and storage. In a European context they estimate that Solar is likely to meet over 36% of Europe's energy demand with renewables and storage meeting 87% of the demand.

Generation in Europe, 2012-2050

PV generating 36% of Europe's electricity by 2050
Renewables 87% (variable renewables 72%)



2. THE POTENTIAL SOLAR MARKET IN IRELAND

Despite the rapid uptake of solar PV across the globe, Ireland has been slow to adopt this technology. Yet this does give us a late mover advantage. Ireland has the opportunity to adopt supports for solar PV at a time of historically low cost of capital and low cost of solar. The cost of funding infrastructure has never been cheaper and the cost of solar has never been as low. Annual auctions will allow policy makers to capture the benefit of ongoing cost reductions in the solar market. Furthermore, we can adopt best practice in support design, planning, system design and community participation by learning from the mistakes of other markets.

As Ireland begins to adopt solar PV by way of RESS auctions in 2019 and grant aid for domestic systems, the market in Ireland is set to grow. As currently proposed, the RESS Auctions should deliver a reasonable capacity of up to 13.5 GWhr. Between 2019 and 2030. This is a reasonable but modest ambition. The auctions represent the route to market for large scale and ground mount solar projects. Assuming a deployment of 4GW of solar generation capacity in this period, this would represent just over a third of the proposed capacity. It is projected that the average annual cost to the consumer to deploy this quantum of solar is minimal at an estimated cost of €65m if awarded in the first three auctions with a 15 year CFD. With a 20-year CFD the costs would be considerably less. However, if annual auctions continued up to 2028, and 5GW or 8GW of solar was deployed this would save the consumer between €313m and €1.8bn respectively.

Year	Auction	Installed Capacity	15 Year CFD			20 Year CFD		
			Total Cost/Benefit to Consumer	Average Annual Cost/Benefit to Consumer	Subsidy/Saving per kwh	Total Cost/Benefit to Consumer	Average Annual Cost/Benefit to Consumer	Subsidy/Saving per kwh
2020	Auction 1	500	€253,834,697	€16,922,313	€ 0.039	€175,333,663	€8,766,683	€ 0.020
2021	Auction 2	1500	€472,489,079	€31,499,272	€ 0.024	€126,998,603	€6,349,930	€ 0.005
2022	Auction 3	1500	€284,217,372	€18,947,825	€ 0.015	-€107,398,722	-€5,369,936	-€ 0.004
2024	Auction 4	1500	-€37,727,248	-€2,515,150	-€ 0.002	-€508,218,147	-€25,410,907	-€ 0.019
2026	Auction 5	1500	-€273,797,377	-€18,253,158	-€ 0.014	-€802,124,264	-€40,106,213	-€ 0.031
2028	Auction 6	1500	-€304,683,001	-€20,312,200	-€ 0.016	-€678,647,542	-€33,932,377	-€ 0.026
Total 5 GW		5000	€972,813,899	€64,854,260	€ 0.076	-€313,284,602	-€15,664,230	€ 0.001
Total 8 GW		8000	€394,333,521	€26,288,901	€ 0.008	€1,794,056,408	-€89,702,820	-€ 0.009

The solar industry has been active in developing projects in anticipation of the RESS auctions and could **have c2GW of generation available to bid for the first RESS auction**. Currently c1,190MW of solar PV projects have planning consent and 922MW are within the planning system². 2,631MW of solar PV project have either signed connection agreements or are live and processing with the System Operators. This quantum of projects will ensure a price competitive auction. Furthermore, it shows that industry is willing and able to invest more, if clear market signals are delivered.

With respect to roof-top solar, both domestic and commercial little or no support is yet in place. The limited grant aid for the domestic market is not sustainable in the long term.

² A report on solar planning statistics have been commissioned by ISEA and can be made available upon request

3. THE BENEFITS OF SOLAR IN IRELAND

The following drivers outline the reasons to progress and rapidly implement an ambitious target for renewable energy and solar deployment under the National Energy and Climate Plan.

3.1. Supporting the Green Economy

The development of the Green Economy represents a major opportunity for Ireland to secure sustainable economic growth, for the development of indigenous enterprises and for job creation. The Irish government recognises the importance of the Green Economy as a key driver of economic growth, job creation and in meeting our international emissions reductions target. The development of renewable energy is central to Irelands energy and green economy polices.³

The potential investment in solar in Ireland is expected to exceed €2.8bn between now and 2030 on the assumption that 4GW of capacity is delivered as a minimum. According to KPMG, this economic activity would delivery over €3 net to the economy in Gross Value Added for every €1 in support. They estimate a total net benefit to the economy of €3bn. ISEA believe that the GVA could be a greater contribution to the economy.

3.2. Job Creation

A major policy goal and challenge of the Irish government in the aftermath of the global financial crisis, has been to return Ireland to positive economic growth and to create jobs. Policy documents such as Irelands *Action Plan for Jobs 2017* highlight how transitioning to a low carbon society, with investment in renewable energy can lead to major job creation. Creating policy measures and schemes which encourage the use and development of renewable energy resources and lead to a diversification of Irelands renewable energy portfolio are extremely important.⁴

KPMG recently estimated in their report, *A Brighter Future*, that over 7,300 jobs would be created and sustained on the assumption that 3.75GW of solar capacity was deployed in Ireland prior to 2030. Solar creates more local jobs than any other form of renewable generation.

3.3. Supporting FDI

The National Competitiveness Council (NCC) and the Industrial Development Authority of Ireland (IDA) have both highlighted the importance of improving Irelands energy infrastructure as essential to maintaining Irelands ability to attract and retain FDI.

There is a growing demand from many of the multinational companies (MNC) attracted to Ireland, such as Apple and Google, to engage in green practices. Key corporate goals for MNC's in Ireland are clean energy and high quality living urban environments, with a shift to using renewables for their data centres. Solar can meet a large proportion of the growing demand for renewables from corporates and data centres in Ireland.

³ Growth and Employment in the Green Economy in Ireland. 2013. Weblink:

<https://dbei.gov.ie/en/Publications/Publication-files/Green-Economy-Progress-Report-2013.pdf> Pages. 3+21

⁴ Action Plan for Jobs 2017. Weblink: <https://dbei.gov.ie/en/Publications/Publication-files/Action-Plan-for-Jobs-2017.pdf> Page. 83

3.4. Energy Security and Diversity

The SEAI, ERSI and IEA have all highlighted energy security as a critical policy issue. Ensuring Ireland has a reliable and predictable energy supply in the present and in the future, is of critical importance to the Irish economy. One of the key objectives stated within the *Statement of Strategy 2016-2019* by the Department of Communications, Climate Actions and Environment is to achieve a diversity of renewable energy sources to ensure the security of Irish energy supply for the economy and society⁵. To enhance Ireland's energy security the Irish government has highlighted the importance of diversifying the electricity generation fuel mix by increasing indigenous renewable electricity production.

Wind has provided a good source of indigenous energy in Ireland for over a decade. With one of the strongest wind resources in Europe this has been an obvious technology to deploy in Ireland and has greatly enhanced our energy security. Solar which is the next cheapest form of renewable generation, must be the next obvious choice in order of merit. Solar can greatly contribute to energy security in Ireland and helps with balancing a network with considerable wind on the system. Due to Ireland's climatic conditions we tend to experience high wind conditions in periods of low light intensity and visa-versa. Solar can help off-set the variability of renewables on the overall system. Solar output due to its seasonal nature can be predicted very accurately on a monthly basis. On an intraday basis peak solar output occurs during the middle of the day when demand is relatively high. Wind energy on the other hand reaches peak output during the end of the day during the period of time in which solar output declines and electricity demand peaks. Therefore, a balanced mix of solar and wind technologies would facilitate a reduction in the need for energy generation from fossil fuel sources.⁶

3.5. Combatting Climate Change

The *Intergovernmental Panel on Climate Change (IPCC)* published their *Global Warming of 1.5°C* report this October. The Report outlined in very unambiguous terms that there must be rapid, far-reaching and unprecedented change in global energy systems if the impact of climate change is to be limited to 1.5°C. At the moment we are on a 3°C trajectory with catastrophic impacts on coastal communities and deep negative impacts on the global economy. Climate change is already having a clear and widespread impact upon Ireland's society, environment, economy and natural resources. Ireland is increasingly faced with extreme weather events. The Department of An Taoiseach in their *National Risk Assessment 2017* stated that climate change caused extreme weather events, are forecast to increase in the coming decades with the past seven years clearly illustrating the increased risks posed by extreme. Ireland must devise strong strategies to reduce and manage climate change risks, through a mixed combination of mitigation and adaptation.

The EU have this year agreed to increase the 2030 targets for the Union overall to 32% by 2030. This has placed additional pressure on Ireland to deliver on climate change policy where we are currently ranked second from bottom in terms of meeting our current 2020 targets. There are clear financial levies in the event, that we do not achieve our targets.

⁵ Department of Communications, Climate Action & Environment. Statement of Strategy 2016-2019. Weblink: <http://www.dccae.gov.ie/en-ie/news-and-media/publications/Documents/20/Statement%20of%20Strategy%202016-2019.pdf>

⁶ ISEA. Submission for Green Paper on Energy Policy in Ireland. 2014. Page. 7

Solar and wind can materially assist Ireland in meeting its climate change targets directly and keep Ireland on a positive trajectory to 2030. In combination with energy efficiency and consumer behavioural change, the deployment of 70% renewables on the electricity system can help Ireland reach most of its 2030 targets. As more corporates insist on sourcing renewable energy and the growing likely demand from the electrification of the transport fleet there will be a material increase in the demand for renewables.

Furthermore, with a rising cost of carbon due the Market Stability Mechanism introduced in Europe in the last few months, the increasing price of carbon and cost reductions in renewables will make fossil fuel generation less competitive with renewables. This will in turn drive the case for a greater proportion of electricity coming from renewables and thus will assist in combating climate change.

The deployment of solar will directly displace fossil fuels in our system instantly reducing our carbon emissions. The dual use of land for solar and agriculture will also provide for a more efficient use of land in carbon abatement.

3.6. Community Empowerment and Fuel Poverty

There are many social benefits associated with solar PV which would be welcomed by the wider public. The installation of domestic rooftop solar PV helps to alleviate fuel poverty and empowers consumers to take control of their energy security. Community ownership of solar PV projects has many benefits on an individual, community and government level, as it provides sustainable energy and income, while also reducing costs across the social spectrum.

- Solar PV is the perfect solution to help individuals and business take control of their energy security.
- Community solar project schemes can benefit isolated and vulnerable communities while reducing dependence on externally supplied electricity and creating income.

3.7. Positive Public Perception

In terms of public perception, solar PV has the highest public support out of the renewable energy technologies with 84% public support.⁷ Solar PV which is increasingly cost effective, faces less planning issues, can be located closer to major population centres, has a higher positive public perception. Rooftop PV is visually unobtrusive, can be located close to its generation source, has minimal impact of the electricity network and allow consumers, businesses and communities invest in a viable renewable technology.

- Solar enjoys 84% public support in the UK due to its minimal negative impact.
- Solar energy is perceived positively by many conservative groups who support deployment of solar plants such as WWF, RSPB, Friends of the Earth and Greenpeace.
- Solar projects have relatively no visual impact on the landscape as they are generally below 2.5 metres in height and are easily hidden by hedgerows. Solar projects also cause no noise pollution or air, soil and water emissions.

⁷ DECC, 9th Wave, April 2014

4. RECOMMENDATIONS

Building on ISEAs original submissions to the Energy Green and White Papers, ISEA set out below a series of priority recommendations.

4.1. 2030 RE Target

ISEA recommends that the NECP set an ambitious target of 70% renewable electricity by 2030. While the recent paper on the High Level Design of the Renewable Electricity Support Scheme sets out a clear roadmap for the deployment of circa 13.5GWhrs by 2030 of renewable energy based on a target of 55% renewables in the electricity mix, this does not take into account the projected demand of a rapidly growing economy and electrification of the transport fleet and only represents 40% of the electricity requirement by 2030 in a 'business as usual' economic outlook.

A 70% deployment is not only technically feasible but will lead to a lower cost of electricity to the consumer. The recent *Baringa* analysis in the *2030 Vision Report* commissioned by IWEA clearly demonstrates that a more ambitious target of 70% of RE in the electricity mix will not cost the consumer more than a fossil fuel scenario. ISEA believe that assumptions in this analysis are conservative on both the cost of capital and the LCOE of wind and solar and thus believe, that the 70% target would achieve savings for the consumer on the cost of electricity.

Furthermore, recent analysis carried out by ISEA (and presented to DCCA) shows that a 20-year Contract For Difference (CFD) auction could deliver 5GW of solar between 2019 and 2030 and would actually deliver a consumer saving of circa €313m. A deployment of 8GW of solar between 2019 and 2030 could deliver savings to the consumer of over €1.8bn provided that the State continue to run auctions in the years up to 2028. Certainty is more important than subsidy and renewable generators will drive down the wholesale cost of power materially in a competitive auction scenario where they gain long term contracts.

4.2. Biomass

ISEA recommends that Biomass not be used for the centralised production of electricity. ISEA urge the Government to support Biomass as Combined Heat and Power behind the meter.

The use of Biomass as a form of electricity generation is a flawed policy headed for failure. No EU member State provides support for Biomass as a form of electricity generation. Support is widely given for the use of Biomass as CHP behind the meter, where both the electricity and heat are used in situ. The EU is moving to ensure that all biomass generators provide a full audit of the carbon footprint for its production. Not only is biomass 'young coal' and instantly releases carbon dioxide to the atmosphere but the carbon foot print of the supply chain is material.

From a purely economic perspective, the cost and security of supply of this feed stock is highly likely to rise considerably and supply is uncertain. With the new stability support mechanism for carbon credits in Europe the cost of this fuel source will rise. There is no business case for Biomass without CHP.

4.3. Peat Burning

The practice of burning peat for electricity generation must cease as a matter of some urgency. Peat meets less than 7% of the nation's electricity demand yet it accounts for more than 35% of the GHG emissions from the sector. This is simply untenable and should no longer be supported by government. A growing renewables sector will require a new work force and the jobs lost by the closing of peat fires stations will be quickly replaced by the renewables sector. With the new stability support mechanism for carbon credits in Europe the cost of this fuel source will rise. There is no business case to continue this practice.

4.4. Definition of Microgeneration

There is a great deal of confusion over the definition of microgeneration as there is a view that it refers to all 'behind the meter' generation. This invariably covers a potentially large range of projects from a domestic installation to a large commercial rooftop installation supplying a business premises. The commercial implications of these different types of projects is vast, and therefore ISEA believe that greater clarity should be provided. This could be completed by defining Microgeneration as 0-50kWp installations, introducing a new definition of Small-Scale Generation (SSG) representing 51kWp – 1,000kWp installations and defining Large Scale Generation (LSG) as anything over 1,000kWp.

4.5. FIT for Roof-top-solar

A Feed-in-Tariff should be introduced for both domestic and commercial roof-top solar. This tariff should be set at a level that encourages self-consumption and digresses every six months in line with cost reductions. A proposed 15-year Generation Feed in Tariff (FIT) should be introduced to support rooftop projects. This tariff should be banded on project system size and digressed annually over a 5-year period. Rooftop PV can deliver 100MW per year over the next 5 years and meet many of the DCCAE policy objectives in line with the 2015 Energy White Paper and the 2016 Programme for Government commitments. Furthermore, under current State Aid regulations this could be implemented immediately without the requirement for State Aid clearance as generators of less than 1MW are exempt.

ISEA believes a generation-based tariff can and should be introduced for Rooftop PV projects up to 1MW within EU State Aid guidelines, rewarding the consumer for all electricity generated, not just electricity which is exported. This form of support will encourage consumers and businesses to self-consume the electricity generated, reducing the impact on the electricity network. The generation is close to the usage point thereby reducing system losses in distribution and transmission lines. In time, our energy system will become more decentralised, altering many traditional assumptions about demand and supply⁸. Facilitating connections of behind the meter PV projects on a local level would progress Ireland's transition to a low carbon economy and reduce CO₂ emissions. Please consult our RESS submission paper of November 2017 for details of the proposed FIT and banding.

⁸ Government White Paper - Ireland's Transition to a Low Carbon Energy Future - 2015-2030

4.6. Planning Change for Roof-top Solar

One of the main barriers/challenges to rapid deployment of Rooftop PV is the requirement for planning approval. While ISEA acknowledge that a process is required and should be adhered to; consideration must be given to certain size (m²) of Rooftop PV being exempt from the planning. At present, in accordance with Statutory Instruments SI 235, 2008 Planning and Development Regulations 2008, "*The total aperture area of any wall mounted panel, or free-standing solar array shall not exceed 50 square metres*"⁹. This equates to approx. 8kWp of Rooftop PV. Many commercial premises have parapets around their perimeter of their roofs and solar would therefore not be visible from the ground. The height of the solar array equates to approximately 80mm (in-plane) and 350mm (tilted). ISEA believe that planning should be exempt for any system under 3,500 (m²). This equates to approximately 500kWp. Due to advancement in solar technology by placing an area restriction as oppose to a kWp restriction will allow businesses install the most advanced technology, at that point in time.

In order to ensure the efficient deployment of roof-top solar, ISEA urges the Department of Housing, Planning and Local Government (DHPLG) to propose a change in the planning legislation to exempt roof-top solar schemes of less than 500kW capacity from planning requirements.

4.7. Standardisation of Development Contributions

There is a massive range of development contributions required from different local authorities with respect to granting of planning permission on solar projects. The current requirement imposed by various local authorities ranges from €250 per MW to over €10,000 per MW. Solar projects have a light touch on the land and do not put a strain on local infrastructure. They do not require utility services and have a very light road use after construction. In a competitive auction these dramatic ranges mean that some counties put projects within their jurisdictions at a competitive disadvantage.

In order to create a level playing field, ISEA believe that a development contribution of €1,500 per MW AC should be applied nationally. ISEA would urge the relevant Minister and the DHPLG to issue a guidance to local authorities standardising the contribution.

4.8. Standardisation of Local Authority Rates

The ISEA would urge the Department to request a standardisation of local authority rates to be imposed on solar schemes. There is currently no guidance from the Valuations Office as to what the local authority level rates are likely to be imposed on solar schemes. This lack of guidance is likely to lead to speculation in the upcoming RESS auction. ISEA calls for the application of a modest rate in order not to deter the deployment of renewable energy capacity across the country.

⁹ SI 235, 2008 – Planning and Development Regulations 2008

4.9. Enabling Private Wire Projects

Currently in Ireland generation projects are precluded from connecting directly to demand centres or consumers if the connection (cable or overhead line) is required to cross third party land. This is permitted in many EU countries including the UK. By direct wire or private wire to consumers the generator can supply power directly to a consumer behind the meter. There is no requirement to use the local distribution or transmission infrastructure and thus electricity can be supplied in a cost efficient manner. Many UK projects supply electricity directly to consumers on this basis.

ISEA call for a reform of the legislation that would allow the deployment of private wire solutions. ISEA urge the CRU to consider this change in legislation.

4.10. Community Benefit

ISEA, since its foundation has been a strong advocate of encouraging community buy-in for all solar projects developed by its members. Solar is a low impact technology versus some of the alternative renewable technologies and where there has been deployment at scale in other jurisdictions including the United Kingdom, solar energy has consistently come out ahead of other renewable technologies in successive surveys in terms of levels of public support¹⁰. Notwithstanding this, ISEA is keenly aware of the need to listen to the needs of project stakeholders and therefore is strongly in favour of community participation and buy-in.

The recent High Level Design of RESS proposed a €2 contribution per MWhr generated from renewable energy projects. This contribution is paid into a nationally administered fund. ISEA would call for this fund to be deployed directly in renewable energy projects locally and in energy efficiency schemes locally. In the first instance ISEA would urge that these funds be used to install solar PV on the roof-tops of schools and community buildings within the proximity of the projects in the first instance.

4.11. Community Investment

ISEA is supportive of community investment in renewable energy projects. However, ISEA is acutely aware of the additional costs that this may cost projects and subsequently the level of support required. ISEA recommends an additional support in addition to the successful CFD bid achieved by a project if it qualifies as a community project (i.e. over 5% equity holding). Furthermore to minimise on funding costs, a National Crowdfund platform be appointed to administer this investment. Thereby allowing individuals to invest as little or as much as they want. EIIS tax shelter should also apply to these investments to encourage public and community participation. The first tranche of shares can be reserved for residents living in a five mile radius of a project. This radius can expand until the full funding is required. In order to avoid costly delays in funding, a body such as Ireland Strategic Infrastructure Fund (ISIF) could underwrite this funding and provide the initial liquidity on a revolving basis.

¹⁰ UK DECC survey shows 84% of the general public support the development of solar power. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/656549/Wave_2_3_Summary_Report.pdf

4.12. Revision of the PSO presentation

ISEA is aware that a great deal of the public resistance to the deployment of renewables is the perceived cost. The Public Service Obligation (PSO) Levy as a mechanism is successful in fully socialising the cost of renewables and currently peat burning however it fails to reflect the true cost of renewable generation. It should take into account the impact of renewables on reducing the cost of the wholesale price of power. Going forward it should take into account the cost impact on the price of power together with the community contribution from renewables.

ISEA would urge the Department to review the presentation of the PSO to reflect the savings in the wholesale cost of electricity and reflect community contributions.

4.13. Review of Grid Connection Costs

ISEA is concerned at the cost of connecting generation stations to the Irish transmission and distribution network. Ireland has the highest grid connection costs in Europe. Only some of these costs can be attributed to the nature of the Irish distribution network. The basic grid connection application costs are the highest in Europe and these costs are to cover the cost of the application. The CRU recently approved a material cost increase request from ESB. ISEA did not see any justification for these cost increases which were already the highest in Europe.

In terms of grid connection costs, Ireland has some of the highest costs in Europe and only part of the difference can be justified. There are fundamental issues of inefficiency with the planning standards applied to grid connection infrastructure in Ireland. Many of these requirements are simply 'over engineering' and are simply not a necessity.

With respect to the modelling of renewables on the system and the requirement for suitable protection measures, these models appear to be outdated and do not address the new technologies connecting to the system. ISEA believe that the protection requirements of ESB may be excessive in many instances.

All of the above mean that ultimately the LCOE of wind and solar in Ireland is greater than it needs to be and is ultimately costing the consumer. ISEA urge the Department to establish a task force of the CRU, DSO, TSO and industry to work on these issues and recommend changes accordingly. ISEA would call upon government to adequately resource the CRU to fulfill its role in this regard.

5. RESPONSE TO EMERGING OPTIONS & PUBLIC CONSULTATION

QUESTIONS

Question 1: Taking into account the National Mitigation Plan¹⁷, the National Development Plan 2018-2027 and Ireland's target under the Effort Sharing Regulation, what further measures to reduce non-ETS emissions do you believe Ireland should take?

Question 2: How do you believe Ireland's national contribution towards the EU's 2030 renewable energy target of 32% should be determined? Please include your reasoning.

Question 3: How do you believe the contribution to be made from the individual sectors (i.e. electricity, heat and transport) should be determined? Please include your reasoning.

Question 4: What policies and measures do you believe Ireland should adopt to achieve its renewable energy contribution and what are the grounds for your recommendations?

Question 5: Bearing in mind Ireland's current state of progress on energy efficiency, what contribution do you believe Ireland should make to the EU indicative energy efficiency target of 32.5% by 2030, and why?

Question 6: What indicative national milestones for energy efficiency do you believe that Ireland should set for 2030, 2040 and 2050, and why?

Question 7: What policies and measures do you believe Ireland should adopt to achieve its energy efficiency contribution and what are the grounds for your recommendations?

Question 8: In terms of the areas of energy security identified in the template, are you satisfied with the resilience of Ireland's national and regional (with other Member States) energy systems and if not, what suggestions would you make for improvement?

Question 9: What policies and measures do you believe Ireland should adopt to achieve its energy security objectives and what are the grounds for your recommendations?

Question 10: Taking into account the EU electricity interconnection target, what do you believe should be Ireland's priorities in terms of further electricity interconnection, and why?

Question 11: What policies and measures do you believe Ireland should adopt to achieve its electricity interconnection objective and what are the grounds for your recommendations?

Question 12: What electricity and gas transmission infrastructure projects would you consider to be of greatest importance in terms of Ireland's achievement of the objectives, targets and contributions under the 5 dimensions of the Energy Union strategy?

Question 13: What policies and measures do you believe Ireland should adopt to achieve its energy transmission objectives and what are the grounds for your recommendations?

Question 14: Noting considerable progress on the regional integration of Ireland's wholesale electricity and gas markets with neighbours, for example via physical interconnection and changes to market arrangements and rules, what further objectives do you believe Ireland should set in the area of energy market integration as set out above and why?"

Question 15: What policies and measures do you believe Ireland should adopt to achieve market integration objectives and what are the grounds for your recommendations?

Question 16: Ireland currently has an energy poverty strategy 2016-2019. Do you believe that a new strategy is required to cover the period up to 2030 and what objectives should it contain?

Question 17: What policies and measures do you believe Ireland should adopt to achieve its energy poverty objectives and what are the grounds for your recommendations?

Question 18: What objectives do you believe Ireland should set for the funding of research covering the five dimensions of the energy union, and why?

Question 19: What policies and measures do you believe Ireland should adopt to achieve energy research objectives and what are the grounds for your recommendations?

Question 20: Are there any other comments or observations that you wish to make?

6. CONCLUSION

There is no debate that urgent policy implementation is required if Ireland is to have any hope of meeting its binding 2030 Climate Change targets and satisfy the Climate Change Directive.

This submission has illustrated that solar energy must be considered a major part of the renewable energy technology mix if Ireland is to actively commit to achieving its EU directed 2030 carbon reduction targets. As the dominant form of new generation being deployed globally and in Europe, solar has many economic and societal benefits that Ireland can capture going forward to 2030 and 2050.

ISEA look forward to this continuing engagement.