Assessment of models to support community ownership of renewable energy in Ireland

Final report

Report for Sustainable Energy Authority of Ireland (SEAI)
Assessment of models to support community ownership of renewable energy in Ireland

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Contact:
Simon Morris
Ricardo Energy & Environment
Gemini Building, Harwell, Didcot, OX11 0QR, United Kingdom
t: +44 (0) 1235 75 3407
e: simon.morris@ricardo.com

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Authors:
Simon Morris, John Harvey, Tom Bruton, Gregory Vaughan-Morris

Approved By:
McNaught, Colin

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Executive summary

There is an increasing body of evidence showing that the benefits of community ownership of renewable energy extend beyond the financial returns that can be expected from investment in an energy asset. The additional benefits are:

- An increase in community support for a low carbon transition;
- Stimulation of innovative solutions, new technologies and new business models for renewable energy;
- Generation of local income, autonomy and resilience; and
- Development of local skills and capabilities.

Thus, key to the Energy White Paper Ireland’s Transition to a Low Carbon Energy Future 2015-2030 is the ambition for more citizen and community participation in and ownership of renewable energy generation. To deliver this, the White Paper sets the framework for a range of measures, including:

- Supporting community participation in renewable energy and energy efficiency projects;
- Providing funding and assistance to community-led projects in the initial stages of development, planning and construction; and
- Examining shared ownership opportunities for renewable energy projects in local communities.

This study, Assessment of models to support community ownership of renewable energy in Ireland, took place in the context of the preparation of the new Renewable Electricity Support Scheme (RESS) and sets out to address the community and citizen involvement measures in the Energy White Paper. It looks at practical actions to support community ownership and meaningful community participation, and should advance the development of a community-focused support scheme for renewable energy. Recommendations are made on a range of possible models to encourage community participation, investment and ownership of renewable energy projects in Ireland.

Defining community energy

Simply defining what is and what is not community energy is difficult, especially if the requirement for community involvement is a pre-condition to securing Government support. During stakeholder workshops and interviews, two key characteristics of community in the context of community renewable energy projects were evident:

1. There is some geographical element to ‘community’; and
2. It is likely that some minimum combination of stakeholders would be required to constitute a community (i.e. one SME acting alone would not constitute a community).

The agreed definition of community renewables used in this study, taking account of the views of different stakeholders, is:

‘A community renewable energy project encompasses some minimum combination of citizens, co-operatives, community groups, charities, educational bodies and SMEs (including farmers) within a certain distance of the installation, as well as municipalities and local authorities.’

However, this working definition should not be considered to be the formal definition of a community renewable energy project. A refined definition should be developed and will be considered further as part of a public consultation.

Methodology to identify policy options and measures

There are many international models of support for community ownership of renewable energy. These apply to developer-led community renewable energy projects (where a commercial developer has the largest equity share of the project) and community-led projects (where the community has the largest equity share of the project). The following diagram explains the different ways of categorising renewable energy projects.

Defining renewable energy projects by the level of community ownership of the project

[Diagram showing the categorisation of projects: Developer-owned projects, Utility-owned projects, Developer-led community projects, Community-led projects]

How a project is categorised is determined by the ownership of the project. For this study, community-led projects are defined as those typically initiated by a community group, where the community owns more than 50% of the equity (or other suitable ownership interest) in the project. Developer-led community projects are those projects typically initiated by a developer, where community investors have less than a 50% equity stake in the project (but some minimum equity stake or other suitable ownership interest).

This study took into account international experience, existing research on community energy in Ireland, and input from leading Irish stakeholders and experts. This enabled the development of a long list of policy options and supporting measures that could address barriers to community ownership of renewable energy. The actions were grouped into three categories:

1. **Primary policies**: policies that secure generation revenues for community projects;
2. **Enabling policies**: policies that assist communities during the feasibility and planning stages, and community-specific policies that offer additional benefits; and
3. **Supporting measures**: additional measures to support community ownership and address barriers to community ownership, such as the availability of expert advice for communities.

Methodology to select suggested policies and measures

Primary policies and enabling policies were assessed against a set of criteria including the effectiveness of increasing community ownership, the complexity of implementing the policy, the wider benefits to the community and the cost of implementation. The assessment was completed for community-led projects and developer-led projects. This assessment determined the recommended set of policies that could deliver increased ownership and participation in renewable energy while ensuring value for money for the consumer. The supporting measures were not ranked using the same criteria, but were assessed qualitatively, with some rejected as not being practicable or not being appropriate.

The diagram on the following page summarises the proposed optimal mix of primary policy options, enabling policies and supporting measures that will deliver increased community ownership of renewable energy assets.
Summary of recommended policies and measures to increase community renewable energy

Primary policy options to support community ownership of renewable energy

Few renewable projects are commercially viable if their only source of income is electricity sales at volatile wholesale market prices. This is why there have been various revenue support measures such as the Renewable Energy Feed-in Tariff (REFIT). The main primary policy recommendation from this study is that there is a mandatory requirement for all developers to offer some investment opportunities in their new projects to communities (however defined) to secure revenue through RESS. This would apply to all projects seeking support through the RESS, including developer-owned and utility-owned projects as set out in diagram above. Against the assessment criteria, if managed appropriately, this policy recommendation is intended to result in a significant increase in community ownership of renewable assets or community investment in projects. A similar approach has been successfully demonstrated in Denmark. The recommended approach for Ireland, that ownership by the community need not be secured, but investment options are offered to the community, is considered less complex to implement without requiring new primary legislation beyond the RESS. However, developers should follow defined rules to market the options for communities to invest in.

European State Aid guidelines require a competitive bidding process for revenue support for wind projects with an installed capacity of more than 6MW and for all other renewable technologies more than 1MW. This report recommends capacity auctions as the vehicle to do this with the cheapest bidders being selected. Different qualification requirements and winner selection processes were considered for the auctions, including ring-fencing auctions for developer-led and community-led projects. These ring-fenced auctions did not rank high in the assessment. Capacity auctions should be neutral with respect to technology/ownership to ensure the most economically efficient outcome.
For projects below the 6MW/1MW thresholds, Feed-in Tariffs (FITs) – a fixed payment per kWh of electricity generated per year that may rise by inflation – and Feed-in Premiums (FIPs) an additional payment above a market price for electricity sold, are the two main revenue support routes used internationally. These are easier to administer than capacity auctions and give much more certainty to investors in renewables. Therefore, they are recommended for these smaller scale projects. It is also likely that a large portion of community-led projects will fall into these brackets. The assessment determined that FIPs were more appropriate than FITs.

FIPs can have different forms, but often the Government support payment per kWh of electricity generated is linked to the wholesale price of electricity. Therefore, as electricity prices rise, the FIP reduces. There are also variants with minima and maxima caps. With recent European State Aid guidelines, there is a clear preference for a market-based instrument, so FIPs are recommended as the most appropriate option for Irish electricity consumers.

Eligibility criteria for projects to participate in the capacity auction and to receive FIP would require developers to offer some minimum share of equity or other beneficial interest in their project for investment by the community, or individual citizens within the community. This offer would follow predefined rules on marketing the investment. A target of 20% community investment is proposed, but there is no proposed minimum level of investment that the developer must secure.

**Considerations around requiring all developers to offer community investment opportunities**

The recommendation that all developers wanting to access the capacity auction market or FIPs will need to have actively marketed their opportunity to the wider community will require many rules to avoid developers ‘gaming’ the system (e.g. offering very poor returns in the hope that there will be very low take up). One of the supporting measures recommended is a ‘Trusted Intermediary’ which, as one of its roles, would monitor offers and need to confirm that the developer has indeed made reasonable efforts to secure community investment to receive the RESS support.

The option would be made to those within a certain geographic distance from the generator or within the same district electoral division. A minimum investment threshold for individuals should be set, such as €50, to allow opportunities for as many citizens to invest as possible.

To ensure higher take up, the Government may not want to be prescriptive as to the form the investment should take – whether that be an investment in an equity share of the project, investments into a right to a share of the net revenues in the project (the so called Shared Revenue structure) or loan notes. Loan notes investors (e.g. 15-year loans) would not have any voting rights, so the Government could not claim citizens own a certain percentage of a project, but have a number of advantages, including:

- Although they would not rank as highly as bank debt, they are less risky than equity investments because the loans would always have to be paid before the equity investor can receive dividends on their shares;
- They are easier for external parties to benchmark, potentially making the preparation of investment prospectuses easier; and
- They avoid the need for large annual general meetings and a sufficient quorum of investors to be present.

However, even to issue loan notes will be costly for developers, particularly for smaller developers, as any investment would need to be properly marketed to citizens, making citizens fully aware of the corresponding risks and rewards. While standardised templates would help, there would still be a role for legal and financial advisers to review prospectuses to make sure they do accurately portray the investment opportunity. For example, results from wind yield assessments would need to be checked against the developer’s financial model, and engineering, procurement and construction (EPC) contracts for construction and maintenance would need to be reviewed to make sure they correspond
to the developer’s financial model. These advisory and due diligence costs may be similar for a 500kW wind turbine project and a 10MW wind farm.

The appropriateness of this solution across different technology categories and scales of operation is expected to be the subject of consultation. It is recognised that there is a minimum threshold where community investment may not be financially viable or other cases where a mandatory community ownership requirement would not be relevant (e.g. auto production or other projects where a process is integrated into a manufacturing facility).

If requiring all developers to market their investment to communities is seen as too restrictive, another option could be ring-fencing part of a capacity market.

Enabling policy options to support community ownership of renewable energy

There are few ‘shovel ready’ community-led projects waiting for the RESS to start construction. Therefore, with the long queues for grid connection, the prospect of many community-led projects coming to market in the next few years is limited. Hence, to support community-led projects, a change is recommended to facilitate their access to a grid connection. As community-led projects are in the public interest, such changes could be beneficial, although these would require close working with the Commission for Energy Regulation (CER). It is recommended that the Department of Communications, Climate Action and Environment (DCCAE) continues to work with CER to determine an approach to enable community-led projects to secure grid connection. This may require an allocation of a portion of grid to community projects or a dedicated access route to grid. Further work by DCCAE and CER is required to determine the most appropriate approach.

A range of other policies were considered to facilitate grid connection, including options for direct supply from developer-led community projects and community-led projects to local consumers. While there are many efficiencies, benefits and cost savings from direct supply, there are a number of technical and legislative barriers that were too high and outside the scope of the RESS. These would require input from additional stakeholders so they were not taken forward. In particular, there would need to be changes to the Electricity Act that would require a long administrative process to implement. This makes these enabling policy options more suited to implementation in the medium term. Therefore, it is recommended that these two enabling policies should be revisited in due course.

Another recommended enabling policy specifically for community-led ventures is to offer grants for communities wishing to investigate the feasibility of renewable energy in their locality. There may be some configurations of community-led projects (e.g. a community partnering with a local small and medium sized enterprise (SME) or farmer) where grants may not be needed. However, in the majority of cases, a community group may have insufficient cash resources to investigate the opportunity.

Linked to this, given a lack of capital for the subsequent risky development stage (e.g. planning the project, applying for and securing planning permission, securing grid access, negotiating land arrangements and securing construction finance) soft Government-backed loans are recommended that could be written off if the project does not proceed. Very stringent checks and balances would be needed to make sure that loans are drip-fed for specific pieces of work (e.g. applying for planning, undertaking wind yield assessments) and that potentially abortive works (e.g. going through the whole planning process before agreeing heads of terms for land leases) are minimised. EU State Aid rules allow for up to €200,000 of de minimis assistance. Soft loans may also be required for the construction phases if a project cannot secure finance from other sources. This is particularly relevant for smaller (i.e. less than €2 million) projects where banks may not lend as their due diligence costs would be prohibitive (the due diligence for a €1 million project is not dissimilar to that for a €10 million project). However, soft loans for construction phases will need to be scrutinised to ensure State Aid compliance.
Supporting measures for community ownership of renewable energy

For community-led and developer-led community projects, community ownership and participation requires an independent Trusted Intermediary that would play a number of key roles including:

- Increasing public awareness of community renewables;
- Acting as an independent broker between developer and community;
- Setting the standards and guidelines for liaison between communities and commercial developers, and
- Administering any grants or other awards; and
- Supporting communities aspiring to own and operate their own renewable energy project.

A Trusted Intermediary would also be the lead party engaging with Trusted Advisers in the renewable energy sector who will have a crucial role in supporting communities with their investment decisions in developer-led community projects or when developing their own renewable energy project. Trusted Advisers are technical, legal and financial experts specialising in developing renewable energy projects. They would support communities in developing community-led projects or with their investment in developer-led projects. This support could potentially come from consultancies, local energy agencies or business advisers.

For those who are not able to invest in renewable energy, a strong case can be made that they should still receive some benefit from the development of a renewable energy project in their area. Hence, continued support for community benefit payments is recommended. International examples show a range of different mechanisms and payment levels for community benefit. Some jurisdictions have mandated community benefit payments, while others have introduced good practice principles and engaged with key stakeholders within the community, industry and public sector bodies (including planning authorities) to ensure good practice principles are followed. Experience from other jurisdictions shows that good practice principles, supported by a community benefits register allowing commercial developers to demonstrate the level of payments being made to the community, can result in higher community benefit payments than mandating a particular level of community benefit payment. Monitoring by an independent organisation, such as the Trusted Intermediary, is also required. Hence, mandating community benefit payments is not considered a requirement if these measures are put in place.

Additional supporting measures to facilitate investment in renewable energy were considered including tax incentives, green bonds and a regulatory framework for crowdfunding. Tax incentives have already been successful in Ireland for incentivising investment in renewables, but this will require further studies since introducing a tax break would likely require increased taxes elsewhere to address any shortfall. Crowdfunding and green bonds are newer developments in the financial market. Wider stakeholder engagement would be required to determine the potential impact these might have. Ongoing monitoring of developments in the sector for both supporting measures are encouraged.

Addressing the barriers to community ownership

The barriers to community ownership of community-led projects or developer-led projects shown on the following page were identified during the literature review and stakeholder engagement stages carried out as part of this project. These barriers were considered as part of the identification of policies and supporting measures. How the mix of primary and enabling policies and supporting measures addresses these barriers is shown in the following table.
<table>
<thead>
<tr>
<th>Developer-led project barriers</th>
<th>Recommendation to address barrier</th>
<th>Community-led project barriers</th>
<th>Recommendation to address barrier</th>
</tr>
</thead>
</table>
| Limited incentive for developers to partner with community groups | - Mandated investment offer to community will facilitate partnering  
- Trusted Intermediary will provide advice and act as intermediary | Community groups have limited skills and experience in renewables project development and management | - Trusted Intermediary to provide guidance on procuring technical support  
- Trusted Adviser to deliver technical and project management support |
| No policy or regulatory framework that sets out rules, guidance or support for shared ownership | - Mandated investment offer to community will set policy  
- Trusted Intermediary will develop guidance and support | Negative public perception of renewable energy sources projects | - Trusted Intermediary to raise profile of community renewables |
| Commercial and legal structure of shared ownership in Ireland is not well defined (and complex) | - Mandated investment offer to community will use current commercial and legal structures  
- Trusted Intermediary will develop guidance and support on the implementation of these | Establishing cooperation and consensus in a community group | - Trusted Intermediary to provide guidance |
| Communities do not trust developers, planners or each other | - Trusted Intermediary will mediate | Community groups are often confined to one (local) project option | - Mandated investment offer to community (potentially allows investment by community in projects in neighbouring communities) |
| Inclusion of all citizens | - Mandated investment offer to community will provide opportunities for wider community to invest | Limited access to development capital | - Grants and loans for development capital available  
- Trusted Intermediary to administer grants and loans |
| Options for raising finance are not well understood/achievable | - Trusted Intermediary to provide guidance  
- Trusted Adviser to support raising finance | Additional cost for community projects | - Trusted advisers to support communities developing projects  
- Grants available  
- Feed-in-premium |
Conclusions

The recommendations set out in this report could have a profound effect — boosting community ownership and involvement in the renewable energy transition of Ireland. However, all the policies and recommendations will have a cost either to the electricity customer (through the Public Service Obligation (PSO)) or to the taxpayer. There is a balance to be struck since, depending on the level of ambition with regards to community renewable energy projects, the total costs could be significant.

The recommended solutions, namely mandating that developers offer an investment opportunity to communities to access RESS support, with a capacity auction for larger projects (more than 6MW wind and 1MW all other renewable technologies) and FIP for the smaller projects, will help realise the ambition. Setting appropriate FIP levels and caps will support community investment at lowest cost to consumers.

This, combined with extra enabling policies for community-led projects (grants, soft loans and, pursuing options for grid access for community-led projects) and supporting measures to stimulate the sector (a Trusted Intermediary to promote community energy, facilitate developer/community dialogue, distribute grants and loans, and have oversight of the sector; a framework of accredited Trusted Advisers to help communities; and good practice guidelines and Community Benefits Register) will help broaden the appeal of renewable energy. This will create an opportunity for citizens to invest in green projects and provide local benefits to those with insufficient cash resources to invest.

If realised, all the recommendations could make Ireland an exemplar in community energy. The next stage is wider stakeholder consultation on all the proposed policies and measures. This should be carried out within the sector, with public and private sector organisations, and with regulators and the public. The proposed policies and measures will need to be incorporated into the design of the new RESS which will be subject to approval by government and state aid clearance.
Table of contents

1 Introduction .............................................................................................................. 1
  1.1 The case for community energy ........................................................................ 1

2 Methodology and sources .................................................................................... 5
  2.1 Task 1: National and international literature review ........................................ 5
  2.2 Task 2: Stakeholder engagement ..................................................................... 5
  2.3 Task 3: Assessment of solutions .................................................................... 6
  2.4 Task 4: Policy design ...................................................................................... 6
  2.5 Task 5: Report and recommendations ............................................................. 6

3 Irish policy context ............................................................................................... 7
  3.1 Current renewable energy policy ..................................................................... 8
  3.2 Future policy developments .......................................................................... 8
  3.3 European State Aid ......................................................................................... 9

4 International policy support for community ownership of renewable energy .... 11
  4.1 Canada ............................................................................................................ 12
  4.2 Denmark ......................................................................................................... 12
  4.3 Germany ......................................................................................................... 15
  4.4 United Kingdom ............................................................................................ 17

5 Community energy and investment ...................................................................... 19
  5.1 History of community investments in different sectors ................................... 19
  5.2 Defining community in the context of renewables projects .............................. 20

6 Identifying policy options ..................................................................................... 25
  6.1 Challenges to investment in community renewable energy projects .............. 25
  6.2 Policy options – addressing the challenges to community energy investment ...... 29

7 Assessment of policies ......................................................................................... 34
  7.1 Primary policies .............................................................................................. 37
  7.2 Enabling policies ........................................................................................... 40
  7.3 Supporting measures ...................................................................................... 42

8 Detailed model design for delivering community investment in renewables .... 55
  8.1 Overarching primary policy - Capacity auctions .......................................... 58
8.2 Developer-led community primary policy – Mandated option for community investment into projects ........................................................................................................... 60
8.3 Developer-led and community-led primary policy - Feed in Premium ....................... 65
8.4 Community-led enabling policy – Grants and soft loans ........................................... 68
8.5 Community-led enabling policy – Grid access .......................................................... 73
8.6 Supporting measures recommended ........................................................................ 74
8.7 Supporting measures not recommended ..................................................................... 76
8.8 Conclusion ................................................................................................................. 77
Appendices .................................................................................................................... 79

Appendix A CEPA Technology bands and discount rates .................................................. 81
Appendix B List of stakeholders ..................................................................................... 85
Appendix C Interview questionnaire .............................................................................. 86
Appendix D Workshop content ..................................................................................... 88
Appendix E State Aid ..................................................................................................... 89
Appendix F International models for community energy ............................................... 92
Appendix G Definitions of community .......................................................................... 114
Appendix H Recommendations by Irish community energy stakeholders ................. 116
Appendix I Stakeholder policy design considerations ................................................... 118
Appendix J Stakeholder developer-led community policy options ................................ 119
Appendix K Stakeholder community-led policy options .............................................. 121
Appendix L Management of community benefit ......................................................... 122
Appendix M Bibliography ............................................................................................ 125
1 Introduction

The 2015 Energy White Paper highlights a new focus on encouraging citizens and communities to be active participants and agents of change in how energy is generated, transmitted, used, stored and conserved.

"The energy system will change from one that is almost exclusively Government and utility led, to one where citizens and communities will increasingly be participants in energy efficiency and in renewable energy generation and distribution".


This focus will have a number of benefits. National benefits include engaging citizens in decisions and investments in the energy system, supporting the transition to a low carbon economy, while citizens can reduce energy costs and/or earn income from participation.

To deliver this the White Paper sets out ambitions for a range of measures, including:

- Working with energy agencies, community experts and local government to ensure that information is provided to citizens in a timely and accessible manner;
- Supporting community participation in renewable energy and energy efficiency projects, via Sustainable Energy Authority of Ireland (SEAI) to share best practice, provide information and ensure that local strategies align with broader Government policy;
- Facilitating access to the national grid for designated renewable electricity projects, and developing mechanisms to allow communities to avail of payment for electricity, such as the ability to participate in power purchase agreements;
- Providing funding and supports for community-led projects in the initial stages of development, planning and construction;
- Developing a framework for how communities can share in the benefits of substantial new energy infrastructure which is located in their area;
- Examining shared-ownership opportunities for renewable energy projects in local communities;
- Supporting, in particular, the emerging energy co-operative movement as one means of facilitating community participation;
- Ensuring that grid connection policy will have due regard to current and future renewable energy policy, including in relation to community renewable energy projects.

This study is taking place in the context of the preparation of the new Renewable Electricity Support Scheme (RESS) and sets out to address the community and citizen involvement measures in the White Paper. It looks at practical actions to support community ownership and meaningful community participation and should advance the development of a community-focused support scheme for renewable energy. Recommendations are then made on a range of possible models to encourage community participation, community investment, and community ownership of renewable energy projects in Ireland.

1.1 The case for community energy

Community ownership of, and participation in, renewable energy projects offers the potential for financial returns to investors as well as wider direct and indirect economic and social benefits. The rate of financial return a community might expect from a renewable project varies with the risk and level of responsibility taken on by the community, as shown in Figure 1 below.
As shown in Figure 1, at the lower level (community benefit from developer owned projects) the risk taken on by a community is low, consequently, the financial return to a community is also low. In this case, financial return to the community could be in the form of a community benefit payment or development of local infrastructure (section 7.3.3.1). Community benefit payments refer to a range of both monetary and non-monetary payments.

At the middle level, there are opportunities for shared ownership of renewable projects, where the ownership of the project is shared between a commercial developer and a community – developer-led community projects or community-led projects (section 5.2.2). From the community's perspective, this allows the project risk to be shared and potentially mitigated by partnering with a commercial developer.

At the highest level (i.e. 100% community owned), the community shareholders benefit from the shares they own, with any profit being available for wider ‘community benefit’. However, the community may also have to manage the development, construction and operational risk in the project, so financial returns are less certain.

It is recognised that creating local value is more effectively done through community ownership rather than community benefit, and this has been identified as an important area of focus in Ireland (SLR, 2014). It is also recognised that there may not be a demand for community ownership, without the benefits of community ownership being provided and demonstrated in Ireland (Hyland & Bertsch, 2017).

In Scotland, with over 8 gigawatts (GW) of installed capacity across the renewable sector, commercial developers contribute over £10 million of community benefit payments each year (averaging £1,241/MW). Locally owned renewable capacity is over 595 MW, of which 67 MW is community-led. The estimated Internal Rate of Return (IRR) of community-led wind projects in Scotland has been calculated as 9.2%, which would be in excess of £35,000/MW per year if the community were able to finance 100% of the project with a community share offering at 6% per year.

Beyond the financial returns of community ownership of renewable projects, the wider benefits are well understood and documented, and include:

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**Figure 1: Risk and reward with community renewable projects**

[Diagram illustrating risk and reward with community renewable projects]

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3 http://www.localenergyscotland.org/view-the-register/

4 Summary of the definition of locally owned renewables for Scotland: community and locally owned renewable energy is defined as technologies producing heat and/ or electricity from a renewable source, where the owner of the installation is in one of the following categories: a community group; a local Scottish business; a farm or estate; a local authority; a housing association; or other public sector and charity.

5 Calculation assumption based on figures in an IEA-RETD report for the UK (IEA-RETD, 2016), where the development and construction cost of wind projects is assumed at approximately £1,500,000 / MW installed in 2014/2015. Given a 35% capacity factor and a 9.2% pre-tax IRR arises.

6 Note that the UK Government incentives for wind energy were reduced from January 2016 and have depressed every quarter since then, resulting in lower project returns - the potential IRR for projects in Ireland may be lower than in the UK.
Increased levels of community involvement in the low carbon transition enables community discussion on concerns regarding specific project proposals, which can help work through potential opposition. A progressive approach to fostering greater levels of community support is essential (SQW, 2012) given that Local discontent with renewable projects can be highly costly and indeed fatal for projects, and has been shown to be a key contributor to planning failure of wind projects in Ireland (Rensburg, Kelley, & Jeserich, 2015).

- Strengthening community cohesion and serving as a source of community pride (IEA-RETD, 2016);
- The creation of local jobs helping to keep money in the local economy. For example, a UK Department of Energy and Climate change report states “The community projects installed will offer between 12-13 times as much community value re-invested back in to local areas as would be achieved through 100% commercial models” (Capener, 2014);
- Behavioural change, including energy efficiency in homes and adoption of innovative energy saving solutions 7;
- Generating local income, autonomy and resilience. For example, community ownership can provide long term income and control over finances in areas where there are few options for generating sustainable wealth. Project cash flow can be used to leverage further public sector support to reinvest in community projects. Revenues can be reinvested locally to increase energy efficiency of local homes, protect against fluctuating fuel prices and boost the local economy (Walton, 2012) (Yildiz, 2014);
- Development of local skills and confidence (College, 2011);

Figure 2 summarises the breadth of wider benefits.

Figure 2: Wider benefits of community renewable energy projects (Singh, 2001)

Investment in and development of community renewable projects continues to increase internationally. Countries leading the way in this include the UK, Denmark, Germany and Canada, enabled by a variety of supports. As can be seen in Table 1, which presents figures from 2016, community ownership of renewables in these countries, either wholly owned by a community or through a shared ownership arrangement, extends to many thousands of MW of capacity.

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Table 1: Approximate installed capacity of renewable energy project with some level of community involvement or community ownership

<table>
<thead>
<tr>
<th>Country</th>
<th>Installed Capacity MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>&gt; 595</td>
</tr>
<tr>
<td>Denmark</td>
<td>~ 2,500</td>
</tr>
<tr>
<td>Germany</td>
<td>~ 7,400</td>
</tr>
<tr>
<td>Canada</td>
<td>~ 850</td>
</tr>
</tbody>
</table>

Community energy is supported in these countries through a mix of financial support mechanisms, policy and regulations, and in some cases access to independent technical support and guidance in the development of projects (IEA-RETD, 2016). These measures are explored in detail in section 4 of this report.

In Ireland, community ownership of renewables has to date not been supported in such a structured way, so the level of community investment in renewables is much lower. There is significant potential for community ownership in Ireland, building on the positive progress that has been made including the growing engagement in SEAI’s community programmes, the increasing role of energy co-operatives in mobilising communities, and early success stories such as the Templederry\(^{11}\) wind farm.

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8 Calculation based on data provided in (Delft, 2016)
9 “Co-operatives constitute 21% of the 34 GW installed capacity under citizen ownership” (Hall, 2016)
11 The largest and most prominent community renewable project in Ireland: 4.6MW wind farm (see section 3.1 for more detail)
2 Methodology and sources

Ricardo Energy & Environment (Ricardo), working with BioXL, was commissioned by SEAI to propose a framework of measures designed to support community ownership of, and participation in, renewable energy projects. This work is being carried out in the context of the development of the new RESS. Recommendations are built upon international experience – particularly the UK, Germany, Denmark and Canada which have strong records of supporting community participation – as well as input from experts in Ireland gathered through stakeholder engagement, and through existing research on this topic.

Figure 3 shows the various tasks delivered to complete this study with examples of key features.

Figure 3: Overview of project methodology

The following sections summarise the five step methodology and the data sources used in the analysis.

2.1 Task 1: National and international literature review

A literature review of international literature, several Irish studies on community renewable opportunities (to ensure that current thinking by Ireland’s leading experts is understood and incorporated into the design of policy options) and Trade body publications were reviewed. The literature review concentrated on the following topics:

- How community renewable energy projects are defined in different countries;
- Challenges to the deployment of community energy projects in other countries; and
- The policies and other mechanisms that support community renewable energy projects in these jurisdictions, and insight into the particular groups that are targeted.

2.2 Task 2: Stakeholder engagement

Using the existing knowledge of stakeholders is vital to the design of a successful new community renewables support scheme. Stakeholder engagement consisted of two components: telephone interviews and a half day workshop.
2.2.1 Interviews

Telephone interviews (see list of interviewees in Appendix B) were carried out to verify and build upon the barriers identified during the literature review (e.g. to community ownership of renewable energy projects) and drew insight from other countries where community energy is prevalent (e.g. Scotland and Canada). The full questionnaire can be found in Appendix C.

2.2.2 Workshops

A half-day workshop was held on 2nd February 2017 at Portlaoise Heritage Hotel entitled ‘Community Ownership of Renewable Energy: An Expert Stakeholder Workshop’. The workshop drew together almost 50 experts (including some of the interviewees) across 13 different sectors with knowledge of community ownership of renewables. Details of the workshop content are provided in Appendix D.

2.3 Task 3: Assessment of solutions

A long list of policy options, for addressing the barriers identified was developed from the literature review, stakeholder engagement, and Ricardo’s own knowledge from its support to community renewables projects and programmes in Scotland and Wales.

Firstly, these policies and measures were matched up against the identified barriers to community participation. Secondly, they were grouped into the following categories:

- Primary policies: policies that secure generation revenues for community projects;
- Enabling policies: policies that assist communities during the feasibility and planning stages, and community-specific policies that offer additional benefits; and
- Supporting measures: additional measures to support community ownership and address barriers to community ownership, such as the availability of expert advice for communities.

Following this a multi-criteria analysis of the policies was completed to enable a range of policy options to be assessed across a consistent set of criteria and a comparison to be made. Through the multi-criteria analysis, the policies were scored high/medium or low, with a weighting given to each criterion. This provided a final ranking for each of the policies, determining which should be the most effective.

2.4 Task 4: Policy design

Those policies with the highest ranking were then brought together with the most appropriate supporting measures, to address the complex multi-factorial barriers to ownership of renewables by communities. The correct mix of policies and additional support measures is required to address all the barriers to community ownership, with no one policy addressing all barriers. This policy design task looked at the overall outline design of the model of support.

2.5 Task 5: Report and recommendations

Sections 7 and 0 bring together the policy recommendations of this report.
3 Irish policy context

Under the 2009 Renewable Energy Directive, Ireland is committed to produce from renewable sources at least 16% of all energy consumed by 2020. This target will be made up of a 40% contribution from renewable energy to the gross electricity demand by 2020.

Figure 4 shows that as of October 2015 2,400MW of wind generation was connected and 3,500MW was contracted for connection. In addition, approximately 15,500MW of further applications from wind projects had been submitted for connection under the group processing approach (GPA) by that date. The volume of solar generation contracted for connection to the grid was approximately 90MW. In addition, approximately 4,300MW of further solar applications had been submitted for connection, following a different non-GPA application process than the wind projects. All figures above have since increased. The volume of connection applications exceeds system requirements for some period of time; the amount of future interconnection will be a key factor determining the volume of variable renewable generation that will be viable in the future.

For context, the peak electricity demand in 2014/15 was 4,700MW (CER [1], 2016). There is future potential to export additional capacity via the interconnectors.

Figure 4: Connected and contracted for connection wind and solar projects in Ireland (CER [1], 2016)

---

12 The GPA has been designed for larger, renewable and conventional generators. Under the GPA, system operators have issued connection offers to these generators in batches, called “gates”. The last iteration was gate 3 and provided for approx. 6,000MW of connection offers; 4,000MW to renewable generators (mostly wind) and 2,000MW to conventional generators.

13 The non-GPA is the process to connect small, renewable and low carbon generators that fulfill public interest criteria. While under the GPA, generators included in a given gate have always been processed together as a group, non-GPA applicants are processed individually and sequentially. (CER [3], 2009)

14 Note that this chart does not distinguish between received and contracted solar PV.
3.1 Current renewable energy policy

The main support to renewable energy in Ireland has been through a Feed in Tariff (FIT) under the Renewable Energy Feed-in Tariff (REFIT) programme. An extension to the REFIT 2 connection deadline to 31 December 2019 was announced in December 2016 and is the main assistance for renewable projects. REFIT 2 covers small and large scale onshore wind plants, small hydro installations (≤ 5MW) and biomass landfill gas plants. REFIT 3 covers only biomass technologies.

Investment and involvement in renewable energy projects to date has been led by commercial developers, and to date no specific revenue support has been made for projects that have some form of community ownership.

There is however support available for community projects at the development stage, as communities often lack the technical ability to lead renewable energy projects. This includes:

- A ‘Sustainable Energy Community’ (SEC) Network to catalyse and support a national movement of SECs operating in every part of the country. This is being promoted by SEAI. At present there are 84 registered SEC groups, although a SEC may not own any renewable energy infrastructure.
- Community energy efficiency grants through the Better Energy Communities programme, with over 300 community energy efficiency projects supported in the last 5 years.
- The European LEADER programme which provides rural communities resources to enable local partners to actively engage in community-led development.
- Energy Co-operatives Ireland who support community based renewable energy co-operatives at every stage of their development, guiding them through the legal process of setting up a co-operative, advising them on their dealings with state agencies, introducing them to a network of co-operatives where they can learn from best practice examples, and helping them communicate their message.
- Advice from local energy agencies and enterprise development boards.

These supports can facilitate community projects and community engagement to a degree, but they are not sufficient to deliver meaningful community ownership of renewable projects.

The largest and most prominent community renewable project in Ireland, the Templederry 4.6MW windfarm, received funding from a variety of sources including Leader (RDP) grant aid, SEAI funding for feasibility, a bridging loan from the turbine supplier Enercon, Business Expansion Scheme funding (BES, €1.2M, see section 5.1) and project finance from De-Lage Landen (a subsidiary of Rabo-Bank). If the project generates as expected, it will result in perhaps €200,000 per annum for distribution among the shareholders including the local community after loan repayments. The project has declared no dividends during its initial years of operation, prioritising repayment of BES capital and other loans.

3.2 Future policy developments

There are currently no targets for community ownership of renewables and apart from the Templederry project, limited examples of community ownership of renewable projects. However, the Energy White Paper (DCCAE, 2015) now sets out a framework to guide policy and the actions that the Government in Ireland intends to take in the energy sector from now up to 2030. The paper takes into account European and international climate change objectives and agreements, as well as Irish social, economic and employment priorities.

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15 http://www.seai.ie/SEC/
16 http://www.seai.ie/Grants/Better_Energy_Communities/
17 https://www.pobal.ie/FundingProgrammes/LEADER/Pages/LEADER.aspx
18 http://www.energyco-ops.ie/
The White Paper refers to strengthening community and citizen engagement in the development of new energy infrastructure. The definition of energy citizens is wide ranging as all citizens are energy citizens, interacting with the energy system as consumers, employees, transport users, householders and landowners. The White Paper includes the vision for 2030 where:

"Citizens and communities will be active participants in the energy transition, with robust public and stakeholder engagement in energy policy, and effective community consultation on energy infrastructure developments".

Specific White Paper actions for supporting communities are covered in the Introduction in Section 1.

Parallel to this study assessing community ownership of renewables, the Department of Communications, Climate Action and Environment (DCCAE) is designing the new RESS to support deeper decarbonisation of the electricity system into the future. In addition, The Commission for Energy Regulation (CER) is currently reviewing Ireland’s grid connection policy (CER [2], 2016). Grid connection is a barrier for all renewable generators in Ireland, especially Community-led renewable projects – out of all the renewable generators who have submitted a grid application and received an offer, none of these are Community-led renewable projects. As such, Community-led renewable projects who have submitted grid applications currently sit at the back of the queues and will not be developed in the short to medium term.

The CER notes that there are local schemes to establish and develop community-led projects, and considers that such schemes may be beneficial for the communities involved and promote the sustainable development and connection of new generation (CER [1], 2016).

A further consultation on enduring connection policy is expected in Q3 2017. Given the status of the current grid connection queues in place, there are limited opportunities for new renewable electricity projects, including community projects, to secure grid access. Hence, there are two potential options for community ownership of renewables:

1) Supporting community investment in projects that have already secured or applied for a grid connection; and

2) Seeking changes to the grid connection process to allow community projects priority access to the grid.

This important point is factored into the policy analysis.

### 3.3 European State Aid

Any future policy developments to support community renewable projects must achieve State Aid clearance from the European Commission. The policies will be subject to the new rules on public support for projects in the field of energy, adopted by the European Commission in 2014, which seek to promote a gradual move to market-based support for renewable energy. EU guidelines for Member States\(^\text{19}\) designing and reforming renewable energy support schemes suggest that:

- Financial support for renewables should be limited to what is necessary and should aim to make renewables competitive in the market; and
- Support schemes should be flexible and respond to falling production costs. As technologies mature, schemes should be gradually removed. For instance, feed in tariffs should be replaced by feed in premiums and other support instruments that incentivise producers to respond to market developments.

\(^{19}\) Refer to guidance provided on EC State Aid page ([http://ec.europa.eu/competition/state_aid/legislation/legislation.html](http://ec.europa.eu/competition/state_aid/legislation/legislation.html))
Appendix E explains the different EU articles to which different policy measures must comply. There are three stages in the renewable project development where State Aid needs to be considered, notably developing the project, constructing the project and operating the project. Each are considered below.

3.3.1 Project development

For project development support, the rules of de minimis would apply. The de minimis exemption permits aid of up to €200,000 to an individual undertaking whether that be a project by a community group or a commercial renewable developer in any rolling three-year fiscal period. If the potential recipient is receiving any other de minimis aid from another source, they must declare this. It is the recipient’s responsibility to ensure that they do not breach the €200,000 ceiling, and not the funder’s responsibility. Hence any project that receives any project development funding, must consider their own de minimis level. Project development funding can also be offered under Article 41.

3.3.2 Project construction

Article 41 (Investment aid for the promotion of energy from renewable sources) allows for grant funding awards of up to €15 million for new renewable energy installations, with an aid intensity of 35-45% of eligible costs (depending on the type of installation), with some potential uplifts in certain areas of Ireland (refer to map of Ireland in Appendix E). However, any EU investment aid does need to be refunded should a project wish to avail of any operating aid.

3.3.3 Project operation

In terms of operational support, the main article is Article 42 (Operating aid for the promotion of electricity from renewable sources). Article 42 allows funding awards of up to €150 million per project for generators of renewable electricity provided there is a competition for the aid. This competitive process can be limited to specific technologies, which requires an additional submission to the European Commission. Aid shall only be granted until the plant generating the electricity from renewable sources has been fully depreciated.

Any investment aid previously received must be deducted from the operating aid, so a plant that has received capital funding for construction cannot receive operating aid without accounting for the capital aid (either by repaying the capital aid, or by deducting this amount from the operating aid).

There are specific provisions for small electricity producers:

- Aid of up to €15 million per project may be granted in the absence of a competitive bidding process to installations with an installed electricity capacity of less than 1 MW for the production of electricity from all renewable sources except for wind energy. As such, in this case, FIT support for projects over 1MW is not possible.
- For wind energy aid, up to €15 million per project may be granted in the absence of a competitive bidding process to installations with an installed electricity capacity of less than 6 MW or to installations with less than 6 generation units\(^2\). As such, in this case, FIT support for projects over 6 MW is not possible.

\(^2\) The intention of this requirement is to ensure that only large scale commercial sites are made to compete under calls for tender, to avoid unnecessary transaction costs. However, it is unclear from the EU guidelines the definition of 6 generating stations as it does not set a capacity for each station. It is assumed that the proposed principle is to limit auctions to wind projects of greater than 6MW capacity, however if a generating station is assumed to have a 3MW rated capacity, this could increase the threshold to 18MW. There is no precedent yet set to determine which threshold is correct, so further guidance from the EU should be sought.
4 International policy support for community ownership of renewable energy

Evidence from other countries presented in this section shows that the greatest impact on the ownership of renewables in other countries has come from shared ownership. For example, as was presented in Table 1 in section 1.1, community ownership of renewables has delivered >595MW of community ownership in the UK and > 7,400MW in Germany, the majority of which were shared ownership projects.

The bulk of any additional community ownership of renewables in Ireland may therefore result from shared ownership projects in Ireland, although the recent working paper by the Irish Economic and Social Research Institute does have to be considered (Hyland & Bertsch, 2017).

Mechanisms to support community energy are generally designed to address certain barriers, whether they be driven at a national level or based on individual interests (e.g. Trusts). Support mechanisms can vary according to the project stage to which they apply (e.g. development, construction, operation, etc.), the type of support provided (e.g. grants, finance, impartial advice, etc.) and the eligibility criteria (e.g. geographical, ownership, etc.).

Insights from the literature review were used to inform topics discussed during the stakeholder workshop, and used in the formation of the policies analysed as part of this study.

An indication of how support varies by project stage, support type, and country is provided in Table 2.

The following sections provide an overview of the level of community energy in each country and highlight some of the key support mechanisms available. The full results of this analysis - for Canada, Denmark, Germany, Wales, England and Scotland - are provided in Appendix F.

Table 2: Summary of support type by project stage

<table>
<thead>
<tr>
<th>Country</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grant</td>
<td>Finance</td>
<td>Incentive</td>
</tr>
<tr>
<td>Canada</td>
<td>✓✓✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
</tr>
<tr>
<td>Denmark</td>
<td>✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
</tr>
<tr>
<td>Germany</td>
<td>✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
</tr>
<tr>
<td>UK</td>
<td>✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
</tr>
</tbody>
</table>

21 Grants typically refer to a one off payment from a beneficiary and does not need to be repaid.
22 Feed-in-tariff payments are an example of an incentive where monetary payments (e.g. made quarterly for a fixed period) are paid to a beneficiary for operating a renewable energy installation in line with the relevant policy requirements.
23 Access to guidance documents is an example of “support” that may be provided.
4.1 Canada

There are over 850 MW of community owned renewable energy capacity in Canada\(^\text{24}\).

There are a variety of support mechanisms and policies led and funded by Federal, Provincial, Municipal and Regional governments as well as private (and public-private) entities. Support mechanisms include grants, low interest loans, financial incentives, tax rebates and advantageous Power Purchase Agreements (PPAs) as well as expert support, contractual templates, etc. Each support mechanism is subject to its own eligibility criteria. For example, investor tax relief and higher Feed in Tariffs (FITs) for community-owned projects were key feature of the Nova Scotia scheme.

Shared ownership is legislated: specifically, the Provinces of Nova Scotia, New Brunswick and Quebec mandate utility companies to procure a percentage of electricity from clean energy sources, and other rules require a certain percentage of this renewable electricity to come from projects that are majority owned by community-based entities.

Funding programmes for capacity building projects led by municipalities (e.g. the Local Government Infrastructure Planning Grant Programme\(^\text{25}\)) have a strong emphasis on developing plans and infrastructure that will enable the development of sustainable community infrastructure (e.g. community energy projects). By allowing renewable energy schemes in defined areas planning complaints are reduced.

The Green Municipal Fund in Canada provides grants to develop plans, conduct feasibility studies and pilot projects, and low interest loans to implement capital projects. Local groups / organisations must be partnered with a municipal government to benefit from this fund.

Table 3 on the next page provides an indication of support provided across the project lifecycle in Canada.

4.2 Denmark

More than 35% of Denmark’s electricity comes from wind, and 85% of that is owned by the residents of Danish communities. There are two community specific policies in Denmark:

- In 2008 the Danish Parliament passed the Promotion of Renewable Energy Act, which requires developers to offer 20% of overall ownership shares of wind projects larger than 25 meters in height to eligible persons\(^\text{26}\).

- To help with the costs of feasibility studies communities can access convertible loan guarantees of up to 500,000 DKK (€67,000) per project. Should the project not proceed the loan is converted to a non-repayable grant.

Table 4, on page 14, provides an indication of support provided across the project lifecycle in Denmark.

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\(^{24}\) Only Ontario, Quebec, Nova Scotia and New Brunswick have been included for this calculation.

\(^{25}\) [http://www.csdd.gov.bc.ca/lgd/infra/infrastructure_grants/infrastructure_planning_grant.htm](http://www.csdd.gov.bc.ca/lgd/infra/infrastructure_grants/infrastructure_planning_grant.htm)

Table 3: Canadian support for community projects at different stages of project development and typical cash inflows (+) and outflows (-)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical elements within each stage</td>
<td>- Finance to pay for, e.g. grant, equity (+)</td>
<td>- Finance to pay for, e.g. grant, equity (+)</td>
<td>- Finance, e.g. loans, share offers, equity investment (+)</td>
<td>- Sale of energy (+)</td>
</tr>
<tr>
<td></td>
<td>- Renewable energy resource estimates (-)</td>
<td>- Full feasibility (-)</td>
<td>- Equipment (-)</td>
<td>- Renewable incentives (+)</td>
</tr>
<tr>
<td></td>
<td>- Select site (-)</td>
<td>- Bankable renewable generation estimates (-)</td>
<td>- Civils (-)</td>
<td>- Feedstock cost for biogas (-)</td>
</tr>
<tr>
<td></td>
<td>- Outline costs and benefits (-)</td>
<td>- EIA studies (-)</td>
<td>- Grid connection (-)</td>
<td>- O&amp;M contracts (-)</td>
</tr>
<tr>
<td>Policy measures for any renewable project</td>
<td>- Grants available across Canada through Energy Innovation Programme: Clean Energy Innovation (+)</td>
<td>- Grants available across Canada through Energy Innovation Programme: Clean Energy Innovation (+)</td>
<td>- Grants available across Canada through Energy Innovation Programme: Clean Energy Innovation (+)</td>
<td>- Ontario Feed in Tariff (+)</td>
</tr>
<tr>
<td>Examples of community specific policy measures in Canada</td>
<td>- Variety of grants available in some provinces. Eligibility varies (+)</td>
<td>- Low interest loans for not-for-profit organisations and not-for-profit partnerships with municipal government (e.g. Green Municipal Fund) (+)</td>
<td>- None</td>
<td>- Banff Feed in Tariff (+)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Variety of grants available in some provinces. Eligibility varies (+)</td>
<td></td>
<td>- Net metering programme (British Columbia) and Enhanced Net Metering (Nova Scotia) (+)</td>
</tr>
<tr>
<td>Examples of other community support</td>
<td>- Variety of foundation grants available. Eligibility varies (+)</td>
<td>- Variety of foundation grants available. Eligibility varies (+)</td>
<td></td>
<td>- Rebates, e.g. Alberta Municipal Solar Programme (+)</td>
</tr>
</tbody>
</table>
Table 4: Danish support for community projects at different stages of project development and typical cash inflows (+) and outflows (-)

<table>
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<td>- Legal costs (-)</td>
<td>- Commissioning (-)</td>
<td>- Land rent (-)</td>
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<td></td>
<td>- Planning fees (-)</td>
<td></td>
<td>- Insurance (-)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Deposits (grid &amp; equipment) (-)</td>
<td></td>
<td>- Finance payments – interest, dividends, etc. (-)</td>
</tr>
</tbody>
</table>
| Policy measures for any renewable project | None                                             | None                                      | Government grants to municipalities that allow wind turbine projects for parks and sports facilities (at no cost to investor) | - Premium tariffs (+):  
|                                        |                                                   |                                           | - Competitive tenders                        |
|                                        |                                                   |                                           | - Fixed premiums                          |
|                                        |                                                   |                                           | - Sliding premiums                        |
|                                        |                                                   |                                           | - Subsidies for strategic small renewables (+) |
|                                        |                                                   |                                           | - Statutory compensation for citizens living within 6x height of turbines (-) |
| Examples of community specific policy measures | 500,000 DKK loan for feasibility studies | None                                      | None                                    | Promotion of Renewable Energy Act of 2009 with requirement for 20% local share ownership (-) |
| Examples of other community support | None                                             | None                                      | None                                    | Community energy broker to maximise sale price of electricity (+) |
4.3 Germany

There are approximately 1,000 renewable energy cooperatives in Germany. There is more than 25 GW of community energy (including citizen ownership projects), which constitutes more than 35% of the total installed capacity of renewable energy in Germany.

In Germany there is considerable policy support for renewable energy, but nothing additional or specific for community renewable energy. There is some regional and state governmental community policy support including:

- Evidence that some regional and state governments provide assistance to communities developing rooftop solar projects or other renewable projects (IEA-RETD (Ger), 2016); and
- The State of Mecklenburg-Vorpommern’s “Citizen and Municipal Participation Law” of April 2016 stipulates that wind farm developers must offer either an equity stake of up to 10% of the project or interest bearing bonds to citizens living within 5km of the project. Another of the other 16 States, Thuringia, has issued voluntary guidelines for all wind farm developers to offer shares, savings bonds or participation certificates (Gotchev, 2016).

This is evidence that the community renewable sector is often competitive with commercial developers, and testimony to the maturity of the community renewable energy sector.

One reason why community projects are successful in Germany is because other countries define community projects as giving direct benefit to local communities, e.g. by supporting households improve their energy efficiency of their properties or supporting local charities. However, in Germany community investors are often different, commonly a group of farmers or community members but rather than the profits being used for community benefit activities, the profits are given to the investors.

As a result of the Energiewende and the ability for residents to become involved in the energy revolution by installing solar PV panels on their roofs there is widespread acceptance of renewable energy generation, with citizens becoming particularly supportive of civic participation.

Table 5 provides an indication of Germany support provided across the project lifecycle.
Table 5: German support for community projects at different stages of project development and typical cash inflows (+) and outflows (-)

<table>
<thead>
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<th>Feasibility</th>
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<td></td>
<td>- Deposits (grid &amp; equipment) (-)</td>
<td></td>
<td>- Finance payments – interest, dividends, etc. (-)</td>
</tr>
<tr>
<td>Policy measures for any renewable project</td>
<td>None</td>
<td>None</td>
<td>Attractive KfW loans for up to €25m (+)</td>
<td>Preferential grid access (+)</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>- FITs (+)</td>
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<td></td>
<td>- Direct marketing support (+)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Electricity auctions (+)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Payments for ongoing attractive loans (-)</td>
</tr>
<tr>
<td>Examples of community specific policy measures in Germany</td>
<td>None</td>
<td>None</td>
<td>Some states stipulate that any renewable developer has to make some shares or bonds available to local residents</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examples of other community support</td>
<td>None</td>
<td>None</td>
<td>Cooperative banks lend money at competitive rates (+)</td>
<td>Payments for ongoing competitive cooperative loans (-)</td>
</tr>
</tbody>
</table>
4.4 United Kingdom

Across the UK there are national policies which are supplemented by different regional approaches taken in England, Scotland and Wales.

The national policies provide the fiscal incentives for the renewable energy produced, the Feed in Tariff for schemes under 5MW and capacity auctions with a feed in premium for larger schemes. Community energy schemes benefit from some more favourable treatment, e.g. the ability to pre-accredit for the FIT and hence gain the security over payment levels before any further reductions in the FIT.

In Scotland there is a co-ordinated approach that includes:

- Advice through the Community and Renewable Energy Scheme (CARES) programme that provides on-line and direct advice through a network of Development Officers;
- Innovation funding with grants to develop new ideas, e.g. energy storage and direct sales of energy to local customers;
- Development grants of up to £10k for early stage feasibility stage tasks;
- Pre planning loans of up to £150k for post feasibility stage development costs (e.g. planning permission, securing grid access, paying for wind studies, etc.) which should be sufficient to address all of the planning and pre-financial close activities. The loan is repayable when the project becomes operational;
- Construction phase debt finance to address market failures where commercial banks only tend to lend for projects costing more than £2 million; and
- Guidance on best practices for shared ownership.

In Wales there is a programme, Local Energy Wales, which includes similar advice, development grants and loans and construction finance at preferential repayment terms (e.g. lower interest rates, reduced due diligence fees and less stringent covenant tests).

In England the Rural Community Energy Fund offers development grant and development loans for community energy projects in rural areas. The development loans have a one off premium interest rate of 40% added to the repayment.

Table 6 provides an indication of support provided across the project lifecycle in the UK.
Table 6: UK support for community projects at different stages of project development and typical cash inflows (+) and outflows (-)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical elements within each stage</td>
<td>- Finance to pay for, e.g. grant, equity (+)</td>
<td>- Finance to pay for, e.g. grant, equity (+)</td>
<td>- Finance, e.g. loans, share offers, equity investment (+)</td>
<td>- Sale of energy (+)</td>
</tr>
<tr>
<td></td>
<td>- Renewable energy resource estimates (-)</td>
<td>- Full feasibility (-)</td>
<td>- Equipment (-)</td>
<td>- Renewable incentives (+)</td>
</tr>
<tr>
<td></td>
<td>- Select site (-)</td>
<td>- Bankable renewable generation estimates (-)</td>
<td>- Civils (-)</td>
<td>- Feedstock cost for biogas (-)</td>
</tr>
<tr>
<td></td>
<td>- Outline costs and benefits (-)</td>
<td>- EIA studies (-)</td>
<td>- Grid connection (-)</td>
<td>- O&amp;M contracts (-)</td>
</tr>
<tr>
<td>Policy measures for any renewable project</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>- Land rent (-)</td>
</tr>
<tr>
<td>Examples of community specific policy measures in UK</td>
<td>Feasibility Study Grants</td>
<td>Development phase loans</td>
<td>None</td>
<td>- Insurance (-)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Finance payments interest, dividends, etc. (-)</td>
</tr>
<tr>
<td>Examples of other community support</td>
<td>None</td>
<td>In Wales loans from Robert Owen Community Bank</td>
<td>- Crowd funding (+)</td>
<td>- Longer FIT pre-accreditation times (+)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Loans from social lenders (+)</td>
<td>- FIT limit is 5MW, but if partner with community limit is 10MW (+)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Shared ownership expectations in Scotland</td>
</tr>
</tbody>
</table>

Examples of other community support
5 Community energy and investment

As explained in Section 3.2 at present there are no targets for community ownership or investment in renewables in Ireland, unlike in Scotland which now has a target of 1GW of locally owned renewables by 2020. However, Ireland does have a long history of investing in community projects, explained in Section 5.1 below. Section 5.2 then makes recommendations for how community engagement and ownership should be defined in the context of renewable energy.

5.1 History of community investments in different sectors

There are a number of useful precedents to point to in an Irish context where citizens have embraced community ownership of public assets or invested in a collective enterprise. These are considered in light of the potential for community ownership of renewable energy.

These precedent examples are summarized below, providing a historical context for different citizen investment opportunities and ownership structures that are relevant for investment in community renewable projects. The best known example is the Templederry project previously mentioned in Section 3.1. Others include:

- The Better Energy Communities scheme, which is administered by the Sustainable Energy Authority of Ireland (SEAI), provides grant support to community energy projects and has supported 300 community energy efficiency projects over the last five years. As a result over 15,000 homes and hundreds of community, private and public buildings have received energy efficiency upgrades, supporting several hundred jobs each year.
- There is a long tradition of co-operative enterprises in Ireland, with roots mainly in the agricultural sector. Community co-operatives have been very successful in developing, owning and operating renewable projects in many countries internationally including Germany, Denmark and the UK.
- The Eli (Employment Investment Incentive) and its predecessor the BES (Business Expansion Scheme) have been around in various forms since 1984. According to analysis by UCC (Curtin & McInerney, 2016) over the period 2007-2014 a cumulative BES/ Eli amount of €68m went into green energy companies, with wind accounting for over €50m of this. Tax incentives have proved effective in raising significant amounts of equity which is relevant for renewable projects.
- Group water schemes provide a good example of communities coming together and undertaking investment in infrastructure for the provision of vital services to their community. The majority of schemes are constituted as co-ops, although there are also limited company structures and trusteeships.
- There are some useful parallels in the forestry sector, particularly given the context of linking land-based assets to investors. In 1994 the Irish Forest Unit Trust was established as a means for pension and charity groups to have a vehicle for themselves and their clients to invest in Irish forestry assets. This has grown to €170m of forest assets under management as of 2013. It is owned by its investors and operated at cost for their benefit.
- As a result of the Telecom Éireann flotation in 1999 575,000 Irish citizens became shareholders of the state-owned telecoms company, many of them owning shares for the first time. While the investment has proved loss-making for the majority of these shareholders, it certainly indicates an appetite for investment and sets a precedent for mass uptake by retail investors, whilst reinforcing the need for clear provision of information on the level of investment risk.

27 http://www.seai.ie/Grants/Better_Energy_Communities/
28 http://www.coford.ie/media/coford/content/researchprogrammeme/landavailability/presentations/Cofordpres2013BLacey280116.pdf
5.2 Defining community in the context of renewables projects

In Ireland there is currently no set definition of community in the context of ownership of community renewable energy projects.

When developing new policy and support mechanisms it is vital that clear and appropriate definitions of relevant terminology are set out to ensure that the desired policy objectives are delivered. This is particularly important for the concept of a ‘community’ for a programme to support community renewable energy projects. The definition should encompass all types of community projects envisaged within the Energy White Paper. The definition must be flexible enough to allow for varied combinations of local actors to collaborate on projects, but specific enough to ensure that the group can be meaningfully considered to constitute a ‘community.’

5.2.1 International definitions of community renewable project

There is a spectrum of views on what constitutes a community renewable energy project taking into account a number of different criteria. International research shows that a community project is often defined using a combination of factors including:

- Geographical factors
- Scale of project
- Ownership
- Voting rights
- Common interest considerations.

Arguably the most recognisable form of a community renewable project is a group of people from a local community getting together and deciding to develop their own low-carbon energy project (e.g. wind or solar PV) for the benefit of the local community (O’Rourke, 2016). In this case, it is likely that the community will have a 100% equity stake in the project. A Special Purpose Vehicle of some form will have been established to own and operate the scheme.

Under Article 22 of the European Directive on “the promotion of the use of energy from renewable sources”

29, the European Union states that a “renewable energy community shall be an SME or a not-for-profit organisation, opening its equity for at least 51% to anyone willing to participate as a shareholder or member, and fulfilling at least four out of the following criteria:

(a) Shareholders or members are natural persons, local authorities, including municipalities, or SMEs operating in the fields or renewable energy

(b) At least 51% of the shareholders or members with voting rights of the entity are natural persons

(c) At least 51% of the shares or participation rights of the entity are owned by local members, i.e. representatives of local public and local private socio-economic interests or citizen having a direct interest in the community activity and its impacts

(d) At least 51% of the seats in the board of directors or managing bodies of the entity are reserved to local members, i.e. representatives of local public and local private socio-economic interests or citizens having a direct interest in the community activity and its impacts

(e) The community has not installed more than 18 MW of renewable capacity for electricity, heating and cooling and transport as a yearly average in the previous 5 year.”

General descriptions of how community is defined by county or region is provided in Appendix G. In some countries the definition is very specific as it is used to determine project eligibility for certain incentives, such as in the UK and certain provinces in Canada, where the energy regulators set definitions for community projects that are used to determine eligibility for certain conditions associated with the Feed in Tariff.

In Germany, the definition is broad. Community energy is referred to as Bürgerenergie, which translates literally as “citizen energy.” Communities are citizens and/or small agricultural businesses who provide equity invested individually or jointly in a renewable project, thus granting them voting rights. In Denmark the involvement of the local municipalities in community renewable projects helps to gain public trust and support by providing democratic accountability and legitimacy (Simcock, Willis, & Capener, 2016).

5.2.2 Developing an Irish definition of community renewable projects

During the stakeholder interviews and the stakeholder workshop, experts were asked to share their views on the definition of community in the context of renewable energy projects in Ireland. The following key characteristics stated by the stakeholders are highlighted in Table 7 which differ slightly from the international characteristics. From the stakeholder engagement, two key characteristics in the perceived definition of community in the context of community renewable energy projects were evident:

1) There is some geographical element to ‘community’; and
2) It is likely that some minimum combination of stakeholders would be required to constitute a community (i.e. one SME acting alone would not constitute a community).

The agreed definition of community renewables used in this study, taking account of the views of different stakeholders is:

“A community renewable energy project encompasses some minimum combination of citizens, co-operatives, community groups, charities, educational bodies and SMEs (including farmers) within a certain distance of the installation, as well as municipalities and local authorities.”

However, this working definition should not be considered as the formal definition of a community renewable project, which is subject to further consultation, and is beyond the scope of this study.

A further distinction on the ownership structure of community renewable projects recognises the different approaches to community ownership, notably that some projects are community-led, whilst there are others that are developer-led with community involvement. This distinction is shown in Box 1.

Box 1: Definitions of community-led and developer-led community projects

| Community-led project: a renewable project, typically initiated by a community group, where investors are defined as above and have >50% equity stake (or other suitable beneficial interest) in the project, with a commercial developer having <50% equity stake. Conceivably such a project may be 100% community owned. |
| Developer-led community project: a renewable project, typically initiated by a developer, where investors are defined as above and have <50% equity stake (or other suitable beneficial interest) in the project, with a commercial developer having >50% equity stake. |
### Table 7: Summary of stakeholders' factors influencing the definitions of community in the context of renewable energy.

<table>
<thead>
<tr>
<th>Key Characteristics</th>
<th>Important Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geographical</strong></td>
<td>- This is a primary characteristic - community needs to mean local in some sense.</td>
</tr>
<tr>
<td></td>
<td>- Wider geographical reach increases potential catchment for investment in a local project.</td>
</tr>
<tr>
<td></td>
<td>- Perceived negative impacts of renewable projects (e.g. wind) are localised.</td>
</tr>
<tr>
<td></td>
<td>- Layers of priority to the geographic distance from the renewable project could be considered.</td>
</tr>
<tr>
<td></td>
<td>Should include the overhead lines connecting the generator to grid within the geographical footprint.</td>
</tr>
<tr>
<td><strong>Common Interest</strong></td>
<td>- Common interests can stretch beyond a geographical border and/or demographic.</td>
</tr>
<tr>
<td></td>
<td>- Could be a small (e.g. a couple of farmers) or large group (e.g. university or municipality).</td>
</tr>
<tr>
<td><strong>Ownership</strong></td>
<td>- Could involve a rural business or a farmer as an actor.</td>
</tr>
<tr>
<td></td>
<td>- Could be 20+ parties in a local region that are all equally involved.</td>
</tr>
<tr>
<td></td>
<td>- Consultees during the workshop expressed little interest in a requirement for &gt;50% unrestricted ownership for a project to be defined community (as in some provinces in Canada).</td>
</tr>
<tr>
<td></td>
<td>- It should not be overly constraining - businesses should be allowed to participate if they are willing.</td>
</tr>
<tr>
<td><strong>Involvement</strong></td>
<td>- The objective needs to be about meaningful participation of communities as a group, as opposed to individual investors in a project.</td>
</tr>
<tr>
<td></td>
<td>- Often consists of volunteers.</td>
</tr>
<tr>
<td></td>
<td>- Will likely need a project manager that is professional and capable otherwise the project may not be bankable.</td>
</tr>
<tr>
<td></td>
<td>- Projects will often be in rural regions with population between 500 – 10,000 people.</td>
</tr>
<tr>
<td></td>
<td>- Energy industry is typically male-dominated but women in communities are key to action.</td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>- Must be sure to be flexible when defining community and cautious about limiting based on geography alone. Need to look for solutions across all demographics, geographies to enable widespread involvement in community renewable energy.</td>
</tr>
<tr>
<td></td>
<td>- The concept of community ownership and community shareholders is not widely understood or practiced in Ireland; projects are predominately commercially led.</td>
</tr>
<tr>
<td></td>
<td>- There is not one pure definition of the scope of community. The scope could be wide and could include domestic, commercial or industrial users as well as schools who may all be considered as members of the community.</td>
</tr>
<tr>
<td></td>
<td>- Landowners could be included as members of community, particularly where infrastructure is on their land or impacts their land. This is particularly relevant for contiguous landowners who may have long-term impact without benefiting from rental payments.</td>
</tr>
<tr>
<td></td>
<td>- Does an individual have to live in a community to be impacted by a renewable energy system in a community area? Someone who works but does not live in an area may spend a significant amount of time in a community (e.g. local doctor, shop owner, publican, etc.).</td>
</tr>
<tr>
<td></td>
<td>- There is comparatively little farmer-led wind or solar development in Ireland, and it would not necessarily be a bad thing to encourage more local ownership and less multinational ownership.</td>
</tr>
</tbody>
</table>
The White Paper references community-led projects without providing a detailed definition of community-led. As explained in Box 1 these projects are considered here to be those that have a majority community ownership or beneficial interest. It is likely that these projects are conceived by a community, but it could well be that a commercial developer develops the concept. A commercial developer may have a smaller non-controlling stake in the project or there may not be commercial developer involvement.

As previously highlighted, if community-led projects are to be developed in the near to medium term, then there will need to be changes to the grid connection process. This may impact on the capacity of community-led projects. In the UK, community-led projects are often <5MW, however in other jurisdictions such as Canada there are a large number of >20MW community-led projects.

Like community-led projects that are not 100% owned by communities, developer-led community projects are shared ownership projects, however the community has a smaller stake in the project than the commercial developer. These projects are likely to be larger than community-led projects, with the commercial developer developing the project. To date, the existing renewable projects in Ireland that have submitted an application for grid connection are unlikely to have been developer-led community projects. These projects will be developer owned projects, those that have been developed by commercial renewable developers or utility owned projects that are being developed by energy utilities.

Figure 5 explains the definitions of renewable energy projects used in this report.

Figure 5: Typology of different energy actors

5.2.3 Legal structures for community investment, ownership and participation

To enable community ownership of renewable energy, there needs to be suitable legal structures in place that can be utilised. Looking at international practice, in some jurisdictions there are legal structures which are specifically designed for community by definition (e.g. Community Economic-Development Investment Funds (CEDIF) in Canada, Community Interest Companies in the UK, and the Société Coopérative d’Intérêt Collectif, a social enterprise in France).

In Ireland, the co-operative structure and not-for-profit company limited by member guarantee legal forms are not specifically designed for the purpose of community renewable energy. However, they are the most obvious legal structures available to incorporate as a community in Ireland at present. Currently, if communities in Ireland choose not to incorporate, they are essentially a club or grouping, typically managed by a committee without the governance structures required by company law. A list of structures is presented in Table 8 – these can apply to both community-led and developer-led community renewable energy projects. Further discussion on these is included in Section 7.3.7 where consideration is given to whether any additional legal structures are required.
### Assessment of models to support community ownership of renewable energy in Ireland

Table 8: Potential structures for community ownership

<table>
<thead>
<tr>
<th>Structures</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-operatives</td>
<td>Cooperative ownership requires a group of individuals to come together, and to pool their individual investment to fund all, or part of a renewable energy development. A co-operative could also be formed to purchase an existing project. Members become shareholders, each with an equal voting right, and any dividend is paid on a pro-rata basis based on the number of shares owned.</td>
</tr>
</tbody>
</table>
| Joint venture                     | A joint venture vehicle (JV) for sharing ownership of a project generally requires early involvement from communities. The community group and developer will both be shareholders or members (as appropriate, depending on the legal entity type of each party to the JV, and the JV itself) in the vehicle and will both have voting rights. There are numerous commercial arrangements possible, which could include the following examples:  
   1) Each party is responsible for raising its percentage of equity funding. For example, if the equity requirement is €20 million and the community group is buying 10% of the shares it will need to raise €2 million from various sources.  
   2) Where the Joint Venture secures debt finance for part of the project cost, with each party then contributing a smaller equity investment. Using the same example, if the project cost is €20 million and a bank lends €14 million to the project, then the community would need to raise €600k for their equity share, and the developer €5.4 million for their equity share. |
| Shared revenue                    | The developer owns the project and the community group ‘buys’ a revenue stream in the form of a debenture. Under this model, the community group receives a fixed yield for a defined period, or perhaps a variable yield linked to asset performance; The community group does not own a physical asset, but the debenture may be secured against the underlying asset(s).                                                                                             |
| Limited liability by member guarantee | The Ltd company by member guarantee has no shares or capital investment by definition, and cannot pay dividends, but funds accumulated within a company can be used for an agreed purpose which the board decides. The company can have a community or social mandate.                                                                                          |
| Limited company                   | This is the most common form of legal entity for a business and would have the capacity for individual share ownership and dividend payments. Control is generally based on the number of shares owned. It is already used by some community renewable energy projects (e.g. Templederry Windfarm Ltd). It is limited to 99 shareholders under company law. Higher numbers of shareholders would usually require a PLC structure. |
| Split ownership                   | A project is divided into two or more separate generating assets, each of which can then produce revenue for the benefit of an identified owner. The community group will therefore own, for example, defined wind turbines or defined solar panels, and the commercial entity will own any other defined renewable energy assets etc. Usually grid connection and other non-generating assets will be shared, and development, finance and operational contracts will be common to the project. |
| Crowd-funding concept             | Crowd funding is the practise of funding a project or venture by raising money from a large number of people who each contribute a relatively small amount of capital. Contributors, in return, often receive equity shares of the company. Note that group-funding is an investment concept, not a legal business or investment structure but is included as it would potentially result in community ownership of a renewable project. |
6 Identifying policy options

This section outlines the particular challenges faced by community renewable energy projects compared to those experienced by commercial developers. It draws on international experience and those challenges specific to Ireland. The policies that have been identified through the literature review and stakeholder engagement process are then presented.

6.1 Challenges to investment in community renewable energy projects

To date a lack of Irish community energy policy support has been an overarching barrier to the development of community energy (Friends of the Earth, 2014). Fundamental to the development of any new sector (and community energy in Ireland should be considered a new sector) is a clear policy supporting the sector, therefore allowing the market to respond and develop.

This has been compounded by a lack of clarity and consistency in the national energy policy, with no legislative requirements or incentives for commercial developers to involve communities commercially at any stage of a project’s development (Walton, 2012). Therefore, it has been suggested a community energy strategy is required (NESC, 2014), and the Department of Communications, Climate Action and Environment are now formulating the necessary policy framework which this study supports.

Other barriers to community energy include:

- **A lack of trust of commercial developers amongst communities** (UCC; MaREI, 2016). This has also caused poor public acceptance for some renewable energy planning applications;
- **Limited public awareness of the extent and maturity of the renewable energy market generally.** For instance, the vast majority of Irish citizens are not aware that renewable electricity provides 60% of electricity needs on occasions, having considered renewable energy still to be a niche or early stage market, rather than a significant part of the national generation portfolio at this point;
- **The complexities of developing renewable projects.** Community groups often have a wide range of skills and capabilities, but rarely the full mix of skills, expertise and technical capabilities to plan, develop, negotiate contracts, finance, build and then operate RES projects (Roberts, Bodman, & Rybski, 2014). A lack of knowledge and confidence therefore can prevent people getting involved in projects that may appear complex and unfamiliar. In addition, communities often find accessing the required skills and expertise very difficult, and while guidance such as the Western Development Commission’s report (Western Development Commission, 2004), energy agency support and information on the Irish Wind Energy Association’s and SEAI’s portals are helpful they do not give the skills, time and tenacity that is required to secure community renewables projects (SLR, 2014). Communities may also be unwilling to commit to a long-term project (Walton, 2012);
- **The challenge of setting up a community organisation and securing the wider support of other local residents** that are not members or investors in the community (IEA-RETD [UK], 2016); and
- **International evidence that debt finance is more expensive for communities**, or if not more expensive is more restrictive. For example, there is evidence that often commercial banks will lend smaller amounts (a lower debt: equity ratio) to community developers (IEA-RETD [UK], 2016). This is partly because of the poor reputation of community projects, but also because communities tend to have few suitable assets and cash resources to offer as security.

Beyond this, there are the wider barriers to the development of renewable projects that community and developer-owned renewable projects face such as access to land, securing planning permission, or sufficient feedstocks in the case of bioenergy and timely access to grid connection (see section 3.2). During the stakeholder engagement process it was widely acknowledged that there is a lot of frustration from both developers and communities with the planning/ pre-planning process.
Whilst these barriers are considered as part of this study, they have far wider impacts and considerations than can be addressed by this study.

Thus, there are a wide range of challenges that have been identified. Some of these can be addressed in the short term, such as the development of an overarching policy to support community renewables, others are more complex and may take longer to address, such as grid access. In the following section we outline the specific challenges to developer-led community projects and community-led projects, before assessing policies to address the barriers, both in the short term and longer term.

### 6.1.1 Developer-led community project challenges

Table 9 summarises the challenges in developing developer-led community projects that were raised by stakeholders during the telephone conversations and workshops. The challenges mentioned by stakeholders are grouped into themes and the relevant stage in the project development process (development, construction, operations). As would be expected, the views of the stakeholders aligned with the wider literature review that identified barriers both internationally and within Ireland.

**Table 9: Challenges to uptake of developer-led renewable energy projects in Ireland (from stakeholder interviews and workshop)**

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Detail</th>
<th>Project Stage</th>
</tr>
</thead>
</table>
| Limited incentive for developers to partner with community groups.       | • From the developer’s perspective, there are few benefits to pursuing shared-ownership arrangements with communities.  
• There are currently no fiscal, regulatory or ‘good practice’ incentives for developers to offer investment to communities.                                                                                                               | Development    |
| No policy or regulatory framework which sets out rules or guidance or support for shared-ownership. | • There is no requirement for community engagement or involvement. Engagement is typically at the discretion of the developer.  
• There is no policy, regulation or guidance setting a standard for community benefit.  
• There is a lack of essential policy /support at national and local level.                                                                                           | Development    |
| The commercial and legal structure of shared-ownership in Ireland is not well defined (and complex). | • Shared ownership projects can take many forms which will influence how the projects are financed.  
• There are no independent parties who support the interests of community groups wishing to negotiate shared-ownership.                                                                                     | Development    |
| Communities do not trust developers, planners, or each other.            | • Transparency is limited – private conversations between land owners and developers have resulted in community misunderstanding and mistrust.  
• There is community resistance to receiving limited benefits from local commercial developments.  
• There is little communication between developers and community groups.  
• There is limited communication between local authorities and community groups.                                                                                         | All Stages     |
| Inclusion of all citizens                                                | • Members of the public will be limited by amount of cash available to invest.                                                                                                                                                                                                                                                  | Development/ Construction |
| Options for raising finance are not well understood/ achievable.          | • Investment options could include community share offers or community debentures, but these are not widely understood by communities.  
• Crowdfunding would offer a route, but it is not regulated.                                                                                                               | Development/ Construction |
The potential commercial structures, suitable for Ireland and used in other countries, which allow community ownership in developer-led community projects are outlined in section 5.2.3. If a developer is securing project finance for the project, this will influence the commercial structure that would be appropriate for the shared ownership, likely to be a joint venture type approach. However, if the developer is developing a portfolio of projects and is developing projects on balance sheet, it may be too complex to enter into a joint venture, so a shared revenue approach may be more appropriate. In shared revenue projects communities do not ‘own’ some of the assets, rather they ‘own’ a right to a certain share of the project net revenues.

Further to this, and as highlighted in Table 9 above, models such as crowd funding are not currently regulated in Ireland, so the opportunity to raise finance through this mechanism, which can have lower transaction costs, is not available.

Addressing community trust in renewable projects, is essential to enabling projects to be developed and constructed, ultimately enabling Ireland to meet its ambitions of enabling “energy citizens” to play an active role in the transition to a low carbon economy.

6.1.2 Community-led project challenges

For community-led projects, as might be expected, there were a greater number of challenges identified as outlined in Table 10. These were grouped to take forward in the policy analysis. Again the challenges identified for community-led projects during the stakeholder engagement and workshop align with those experienced internationally; lack of experience, technical skills and project finance.

In addition to these challenges, other more holistic barriers need to be addressed at a sector level, such as improving the perception of renewables, establishing groups within a community and gaining community consensus. There are ongoing initiatives to address these and provide further support specifically for community renewables, as outlined in Section 3.1.

It is recognised that there is little that can be done to address the geographic boundaries within which a community operates, although opportunities that may allow community ownership across geographic boundaries is considered in other countries, and discussed in Section 8.2.
### Table 10: Challenges to uptake of community-led renewable energy projects in Ireland (from stakeholder interviews and workshop)

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Further detail</th>
<th>Project Stage</th>
</tr>
</thead>
</table>
| Community groups have limited skills and experience in renewable project development and management. | • A lack of skills, experience and confidence can impede project progress and overall success.  
• In particular communities lack technical knowledge and knowledge of electricity markets, experience making investment decisions, experience operating commercial projects and have limited legal skills. | Development Operations |
| Negative public perception of RES projects.                               | • The track record of community benefits from renewable energy projects is limited and varies a lot by project and/or developer.  
• Community groups do not have a sense of involvement in Ireland’s renewable energy initiatives.  
• Some members of the general public have no confidence in Irish communities’ ability to take large infrastructure projects forward.  
• Some members of the public believe that electricity generation is too complex for communities in Ireland to undertake. | All Stages |
| Establishing cooperation and consensus in a community group.              | • Turning a community proposal into a business entity is a long and challenging process, sometimes meaning that engagement wanes.  
• There is limited guidance on commercial and legal structures for community-owned projects, meaning it is difficult to quickly form an appropriate legal structure. | Development |
| Community groups are often confined to one (local) project option.        | • Communities tend to pursue projects near where they reside. This limits the number of viable renewable technologies and development sites. This also means that lack of access to an affordable grid connection can rule out sites proximate to the community. | Development |
| Limited access to development capital                                     | • There is a perceived project governance risk by lenders dealing with communities.  
• Most community groups are not in a position to provide capital for the early risky feasibility and securing planning permission stages.  
• Even if projects can secure planning and grid connections, commercial lenders perceive a project governance risk with communities, and anecdotally lenders do not like community assets as collateral, for having to step in and sell a defaulting community asset has reputational and political risk.  
• There is an absence of regulation for innovative finance tools (e.g. crowd-funding) that could offer a different financing route.  
• In general community-led projects are smaller but still require similar levels of due diligence (wind yield assessments, evidence of planning permission, EPC contracts with strong warranty packages, etc.). Also community projects tend to require more support from lenders.  
• As highlighted, there are potentially higher costs of finance. | Development |
| Additional cost for community projects                                     | • There is evidence that community groups often choose advisers they know rather than ones with suitable knowledge/experience.  
• Community groups often underestimate the need for timely advice from experienced professional advisers, burdening projects with costs later on. | Development |
| Lack of Industry experience in small scale and community developed RE projects in Ireland. | • There is a lack of policy support or direction for community-led projects, especially around business models and legal structures. | All Stages |
6.2 Policy options – addressing the challenges to community energy investment

The approach to identifying appropriate policy options to address identified barriers to community renewables was done in three phases:

- Reviewing successful community policies in other jurisdictions for both developer-led community projects and community-led projects as outlined in Section 4;
- Reviewing Irish literature on appropriate support policies to support communities in Ireland. This is covered in Section 3 and Appendix H and is referenced throughout this report.
- Discussing the identified policy options with stakeholders. The full list of policy option recommendations that were made by stakeholders for both community-led and developer-led community projects are included in Appendix H and Appendix J.

Not all of the policies/measures identified are relevant for a comparative assessment – some are primary policy mechanisms which secure revenues for projects, while others are enabling policies to further assist the viability of community projects. This is categorised in Table 11.

Table 11: Categorisation of policies and supporting measures

<table>
<thead>
<tr>
<th>Developer-led community</th>
<th>Community-led</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary support policies</td>
<td>Primary support policies</td>
</tr>
<tr>
<td>Enabling policies</td>
<td>Enabling policies</td>
</tr>
<tr>
<td>Supporting measures</td>
<td></td>
</tr>
</tbody>
</table>

The two policy types and the supporting measures can be explained as:

- Primary policies are those policies through which community projects can secure generation revenue and operational aid.
- Enabling policies are other policies that can potentially make community projects viable. Projects that may benefit from these enabling policy measures will still benefit from the primary policy measure, with the enabling policy offering a further incentive for communities to engage. Some enabling policies include proposed regulatory changes and thus may be outside of the immediate scope of the work in designing the RESS, but nonetheless are considered as they were raised by stakeholders.
- Supporting measures are additional measures to support community ownership and address barriers to community ownership. These may apply to both developer-led and community-led policies.

The following two sections describe the policies that were identified for assessment for both community-led projects and developer-led community projects. As would be expected there is much alignment between the views of stakeholders on potential solutions/policy options, and policies implemented in other countries (see section 4).
6.2.1 Developer-led community policies

6.2.1.1 Developer-led community primary policy options

In “Guidelines on State aid for environmental protection and energy 2014-2020”30 the European Commission presents auctioning as the standard method for financially supporting renewable energy. Member States may deviate from this rule, but only for very good reasons (see Appendix E). These new State Aid guidelines are intended to address the market distortions that may result from national subsidies granted to particular pre-selected renewable energy projects. The EC states that market-based instruments are the most important tools to achieve energy objectives.

As examples, the Netherlands introduced feed-in premiums (FIPs - see Option 5 below for a description of the FIP) combined with auction rounds in 2011. The UK first introduced capacity auctions with an associated strike price and FIP in 2015, with a subsequent auction planned for 2017. Germany has announced that it plans to move from administratively defined feed-in tariffs to auctioned support payments no later than 2017. Internationally, capacity auctions have increasingly been deployed more than FITs or FIPs (Barroso, 2015).

The rules across auctions can vary significantly. Three different approaches were considered which would potentially support increased community ownership of developer-led community projects:

1. **Developer-led community project primary policy 1.** In a capacity auction mechanism auction rules could give preferential weighting to developer-led community projects. This would allow developer-led community projects to bid in the same auction as developer-owned commercial renewable projects, with weightings applied to bidders’ auction prices linked to their level of community ownership. A proposed strike price across different technologies would be published prior to the auction.

2. **Developer-led community project primary policy 2.** In a capacity auction mechanism auction rules ring fence capacity for developer-led community projects. This would ensure that community projects were not bidding against developer-owned commercial projects. Similar policies have been implemented in a number of jurisdictions where auctions are held for different technology capacity bandings, so that some technologies compete against each other, however new technologies (or in this case business models) might have their own separate auctions.

3. **Developer-led community project primary policy 3.** In a capacity auction mechanism, auction rules could apply an uplift to strike prices for developer-led community projects. In this option, projects with some minimum level of community ownership could bid against commercial projects for capacity, whilst accounting for any additional viability gap through an uplift to the agreed strike price.

State Aid guidelines require projects over 6MW wind (1MW other technologies) to have some auction mechanism (see Section 3.3). Additional criteria govern the level of support available to projects up to 3MW wind (500kW other technologies) (see Appendix E). With that in mind, alternative mechanisms were also considered for providing operational aid:

4. **Developer-led community project primary policy 4.** A FIT for developer-led community projects was proposed as an extension of the previous REFIT support policy, although many aspects of REFIT are similar to a FIP rather than a FIT, particularly where “supplier lite”31 arrangements are entered into. Eligibility criteria for the tariff would apply, requiring projects to have some form of community ownership.

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31 See https://www.beauchamps.ie/publications/404 for a short overview on Supplier Lite arrangements
5. **Developer-led community project primary policy 5.** A Feed-in-Premium (FIP) for developer-led community projects where electricity is typically sold on the electricity spot market and generators then receive a premium on top of the market price of their electricity production, funded through the Public Service Obligation (PSO). Some features of the current REFIT mechanism do resemble this, particularly where a “supplier-lite” arrangement is structured and the renewable generator trades directly into the electricity market. FIP can either be fixed (i.e. at a constant level independent of market prices) or sliding (i.e. with variable levels depending on the evolution of market prices). Under this option, eligibility criteria for the FIP would need to require some form of community ownership.

A further policy option is considered, based on the principle of introducing eligibility criteria which projects would need to meet in order to access RESS support.

6. **Developer-led community project primary policy 6.** A mandatory requirement for developers to offer to communities’ opportunities (up to a defined percentage amount) to invest in the scheme. At this point no prescriptive recommendation is made for the form of the investment, which could be an equity investment, through shares in the project, or via loan notes (debt).

This would then mean that Developer-led community policies 1 - 5 would not need to have additional requirements to favour developer-led community schemes as all new schemes would be developer-led community schemes (or community-led schemes).

### 6.2.1.2 Developer-led community enabling policies

The enabling energy policies would be implemented to make projects viable or increase the potential for community involvement beyond the primary policies. They would rely on wider RESS policy support.

1. **Developer-led community project enabling policy 1.** To secure RESS policy support there could be an obligation to gift a proportion of a renewable project to the local community. This would be a small percentage of the project equity or revenue given to the community, with the percentage possibly varying by the technology. The gift could be to the community (e.g. a local charity), or to individuals within the community. This was a recommendation that has been considered by other stakeholders in Ireland (Tipperary Energy Agency, 2016).

2. **Developer-led community project enabling policy 2.** If developer-led community projects were allowed to directly supply consumers, such as local business, schools or the public sector, through a private wire arrangement, higher revenues will be possible due to the difference between wholesale and retail prices. Developer-led community projects supplying local schools and public sector buildings have proven very popular in the UK, particularly with community owned solar projects supplying schools and offering discounted tariffs to schools, whilst the community benefits from a revenue through the sale of the electricity and the accompanying FIT. With the drop in the FIT in the UK, commercial renewable projects, developer-led community projects and community-led projects in development are looking at direct supply as a means to secure additional project revenues.

3. **Developer-led community project enabling policy 3.** Similarly to enabling policy 2, developer-led community projects could be allowed to directly supply consumers, such as local business, schools or the public sector via Virtual Metering. Using virtual metering rather than private wires allows generators to supply remote demands on different parts of the electricity network. Virtual metering arrangements are technically easy to implement, however the commercial and charging arrangements are still complex to implement.

### 6.2.2 Community-led policies

A list of community-led policies were identified and assessed. Whilst in some cases the policies for community-led and developer-led community projects are the same, the assessment of policies using the multi-criteria analysis described in Section 7 may differ as the policies are considered in the context of a community-led project, rather than a developer-led community project.
6.2.2.1 Community-led primary policy options

Five of the six primary policies for developer-led community projects are equally applicable to community-led projects, notably:

1. **Community-led primary policy 1**: a capacity auction with preferential weighting for communities;
2. **Community-led policy primary 2**: a capacity auction ring fencing a portion of the competition to community projects;
3. **Community-led primary policy 3**: a capacity auction with premium for community projects;
4. **Community-led primary policy 4**: a Feed in tariff; and
5. **Community-led primary policy 5**: a Feed in premium.

6.2.2.2 Community-led enabling policies

As with developer-led projects, the enabling policies would rely on the wider RESS policy support or if implemented, one of the primary policy measures. They would be implemented to make the project viable or increase the potential for community involvement beyond the primary policies.

1. **Community-led enabling policy 1**. Grant funding to communities for feasibility stages of the project. This would help communities identify and screen potential sites. A grant would get a project through the riskiest stage of the project development, which may then enable the community to raise development capital although this is also a significant challenge.

2. **Community-led enabling policy 2**. Soft loans to communities (with write off facility) to develop a project through planning/ grid connection/ land agreement until a project becomes an investable asset. This is similar to the CARES loans in Scotland. This would include environmental studies, ground surveys, route access studies and everything required to secure the project planning and make an application for grid connection.

3. **Community-led enabling policy 3**. A soft loan to communities for construction and capital costs. This would provide a source of funding for community-led projects, which could not secure funding from a commercial lender, although the project is financially viable at market interest rates. Community-led projects will not meet commercial lender requirements for many reasons including a lack of security, the size of the loan, the experience of the community or the lack of potential repeat business, so currently there is a market gap.

4. **Community-led enabling policy 4**. Permitted development planning rules to allow small capacity community renewables schemes to be developed without planning consent. This has been instrumental to the wide uptake of small scale renewables in the UK (<50kW capacity) particularly for domestic rooftop solar, thus increasing citizen investment in renewables. Permitted development rules are set by planning authorities and applied across different technologies. These allow projects to be developed without the requirement to secure planning permission.

5. **Community-led enabling policy 5**. Local generation capacity sized to match local demand. A cornerstone policy for the development of the renewables sector in Denmark where, for example, if a 500kW wind turbine was erected, 200 or 300 local people would finance the project, purchasing shares which are sold slightly differently. The typical MWh generation the wind turbine would make in a year would be calculated, and then divided by the total cost.

6. **Community-led enabling policy 6**. Communities could be offered priority grid access, allocating up to a particular threshold of grid capacity. If there are to be many short-term opportunities for community-led projects to be developed, then addressing the queue issue is essential and this policy option offers a means to do this. The prioritisation of community-led connections may be possible if they are in the public interest. The capacity constraints could relate to the maximum transformer capacity at a distribution node, often 5MVA, hence a maximum capacity of 5MW. This could therefore align with the capacity thresholds included in the Primary Policy options.

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32 A more detailed assessment of this threshold is required and beyond the scope of this report.
In addition to these enabling policies, allowing community-led projects to directly supply consumers, such as local business, schools or the public sector via Private Wires or Virtual Metering were also identified as policies implemented or considered in other jurisdictions as they were for developer-led projects. The assessment of these is presented in the following section.
7 Assessment of policies

The long list of policy options identified is wide ranging and diverse. The selection criteria (below in Table 12) were developed to enable a meaningful comparative assessment of the primary and enabling policies.

Table 12: The nine criterion used for the multi-criteria analysis

<table>
<thead>
<tr>
<th>Criterion Number</th>
<th>Criterion Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion 1</td>
<td>Within the scope of the RESS. This initial criterion is a stage gate, in that if the policy, although interesting, is outside the scope of the RESS then no further analysis is needed of that option.</td>
</tr>
<tr>
<td>Criterion 2</td>
<td>Complexity of implementation. This is a qualitative view of the complexity to implement the policy. This takes account of the legislative changes that may need to be implemented and the likely timetable for implementing the policy (short &lt;1 year, medium 1 – 2 years, long &gt; 2 years).</td>
</tr>
<tr>
<td>Criterion 3</td>
<td>Sharing of benefits. A qualitative analysis of how widely would the benefits from the policy extend? Would they be limited solely to those investing in the project, or would they extend more widely to others in the local community, local businesses or the wider public?</td>
</tr>
<tr>
<td>Criterion 4</td>
<td>Cost to consumer. It is beyond the scope of this study to complete a full quantitative impact assessment, however a qualitative analysis of the comparable costs of the policies was undertaken to determine the impact on the PSO Levy or on electricity bills.</td>
</tr>
<tr>
<td>Criterion 5</td>
<td>Cost to project. This involved a qualitative assessment of the higher or lower costs to the project of the policy. This includes any impact on project costs during development, construction or operation. Whilst the variation in costs from one technology to another and at different scales of project mean the impact is likely to vary between projects, the qualitative analysis still provided a possible range of costs.</td>
</tr>
<tr>
<td>Criterion 6</td>
<td>Cost to public sector. How much would the policy cost to implement? This includes the costs of setting up all the rules and policies, and then the ongoing costs to the public sector. Included would be the cost of grants awarded, the costs of loans that are written off and paying for continued support to the sector. There is also the need to consider the net impact on tax revenues.</td>
</tr>
<tr>
<td>Criterion 7</td>
<td>Effectiveness of delivering community ownership. This involved a qualitative assessment of the leverage effect of the policy, i.e. by how much might the amount of ownership of renewable projects by communities’ increase?</td>
</tr>
<tr>
<td>Criterion 8</td>
<td>Wider additional benefits. This involved a consideration of other wider benefits from the policy.</td>
</tr>
<tr>
<td>Criterion 9</td>
<td>Summary of risks. Each policy may have a number of risks. This criterion assesses the potential risks of policies and the potential impact of these risks.</td>
</tr>
</tbody>
</table>

As the criteria being evaluated were not quantitative, the assessment of policies across each criterion was primarily a qualitative assessment. For example, the complexity of implementation of a policy is influenced by many factors, such as whether this requires changes to primary legislation (for example the Electricity Act) and how many stakeholders would need to be consulted across different Government departments, public sector bodies or private companies. Similarly, a qualitative assessment of the costs of the policies considered the relative costs to small, medium and large scale projects, the scale and complexity of policy management and monitoring, and the likely impact on PSO.
Where possible, the assessment of both developer-led community projects and community-led projects was as objective as possible drawing upon insights from the literature review, expert stakeholder inputs and knowledge/experience from working in other jurisdictions that have implemented these policies. No legal advice was obtained on the policy options.

Through the nine factor multi-criteria analysis each of the criteria was scored on a scale of 1 to 3, with 3 being greater benefits or less risk, and 1 being fewer benefits or higher risk. As explained, for the first criterion (within the scope of the RESS policy) a score of 1 means the policy is out of scope, and the other criteria do not need to be considered. Table 13 explains what each of the numbers 1 – 3 mean.

Working with the steering committee a weighting was attributed to each of the nine criterion as some of the criteria are more significant than others. For example, the overall effectiveness of delivering community ownership (criterion 6) was perceived as more important than the level of sharing benefits (criterion 3). The results from this analysis of the primary policy options are presented in Section 7.1 while the results from the assessment of the enabling policy options are presented in Section 7.2.

Following the assessment of the individual policies as outlined in this section, the policies that were identified as scoring the highest were then considered in conjunction with one another to determine an appropriate mix of policies. This is presented in Section 8.
### Table 13: Key points to be considered when selecting a score (between 1 and 3) for each criterion.

<table>
<thead>
<tr>
<th>Score</th>
<th>Within the scope of the RESS policy</th>
<th>Complexity of implementation</th>
<th>Cost to consumer</th>
<th>Cost to Public Sector</th>
<th>Cost to project</th>
<th>Effectiveness of delivering community ownership</th>
<th>Additional Benefits</th>
<th>Risks</th>
</tr>
</thead>
</table>
| 1     | Not in scope – do not consider further | - Complex to implement.  
- Would require significant changes to primary legislation.  
- Timescales for implementation beyond RESS support | Direct benefits to community investors only | Direct increase in consumer bills and/ or large impact on PSO | Set up costs and ongoing supporting costs to the public sector | Cost to project | Minimal impact on delivering community ownership | No additional benefits not considered in other criteria. | Significant risks that will require additional time/ cost to fully mitigate |
| 2     | Viable over the medium term | Additional changes to legislation or provision of guidance required with limited input required from other stakeholders | Direct benefits beyond community investors, to some members of the wider community | Indirect cost to consumer bills and impact on PSO | Only setup costs to the public sector | Cost to project | Positive impact on delivering community ownership | Additional benefits not considered in other criteria. | Medium level of risk. Risks can be mitigated, with minimal additional time/ cost to fully mitigate |
| 3     | Viable as part of the RESS | No additional legislative changes beyond those required under RESS. | Direct benefits to local community investors and a large proportion of the wider community | No additional cost or minimal impact on PSO | Cost neutral or revenues to public sector | Savings or increased revenue for project | Significant impact on delivering community ownership | Significant additional benefits not considered in other criteria. | Low level of risk. Small probability of occurrence and impact limited. All risks can be mitigated easily. |

* Securing community investment in a developer-led community project will increase the costs of developing the project as wider community engagement will be required. This is assumed across all projects and not added as a separate cost.
7.1 Primary policies

This section summarises the results of the analysis of the primary policies for supporting developer-led community policies and community-led policies. These were done separately. The results from the analysis using the scoring system outlined in Table 13 are included in Table 14 below, with the following sections explaining the rationale for the rankings.

Table 14: Results from multi criteria analysis of primary developer-led and community-led policy options

<table>
<thead>
<tr>
<th>Developer-led community projects</th>
<th>Community-led</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranking</td>
<td>Policy</td>
</tr>
<tr>
<td>Joint 1st</td>
<td>RESS generation revenue policy with mandated requirement for investment opportunities to be made available to communities.</td>
</tr>
<tr>
<td>Joint 1st</td>
<td>FIP for smaller developer-led community projects.</td>
</tr>
<tr>
<td>3</td>
<td>In a capacity auction, auction rules account for provision of developer-led community projects through a ring fencing of capacity.</td>
</tr>
<tr>
<td>4</td>
<td>FIT for smaller developer-led community projects.</td>
</tr>
<tr>
<td>Joint 5th</td>
<td>In a capacity auction mechanism, auction rules account for preferential weighting applied to developer-led community projects.</td>
</tr>
<tr>
<td>Joint 5th</td>
<td>In a capacity auction, auction rules account for provision of developer-led community projects by applying an uplift to the agreed strike price.</td>
</tr>
</tbody>
</table>

7.1.1 Rationale for rankings of developer-led community primary policies

In the assessment of the policies, the joint highest ranked was a mandated requirement for developers to make an option to invest in the renewable project available to communities, who would then have the opportunity to consider the investment. This would mean some portion of all new renewable projects in Ireland would be made available for community investment. This policy option provides the widest opportunity for a community to invest in a renewable scheme, whether that be as shares in projects, shares in revenue streams, or more secure loan notes. During the stakeholder engagement this was considered a favourable option.

Consideration was given to mechanisms for implementing this and it was considered this policy could be implemented in the short term, without any changes to primary legislation, by making this a qualification criteria for RESS support. Further information on this mechanism is presented in Section...
8.2. Hence there would be no changes to planning regulations required or property ownership laws, as this policy requires a developer to offer an investment option to the community not mandating a change of asset ownership, subject to the developer following a set of guidelines determined following further consultation. It therefore scored highly for low complexity of implementation.

Due to the State Aid guidelines, implementation of the FIP, and a capacity auction would also not require any legislative changes, other than the wider RESS implementation. However, the implementation of a FIT, would require specific notification to the EU for approval as it would not be in line with EU guidelines for operational aid to be provided via a market based mechanism, so it scored low on complexity of implementation. The level of operational aid with a FIP is linked to the market price of electricity, contrary to the FIT where the level of operational aid is fixed. A FIP also aligns to State Aid guidelines which suggest that as technologies mature, FITs should be replaced by FIPs. Whilst developer-led community business models are new to Ireland, the technologies that will attract most community ownership are mature technologies.

It is beyond the scope of this study to determine the market appetite amongst off-takers for entering into a Power Purchase Agreement (PPA) with a developer-led or community-led project in the context of both the new RESS and the Integrated Single Electricity market, so further consultation is required to determine this.

The policy analysis is nuanced because if wind projects are greater than 6MW or other technology projects are greater than 1MW State Aid guidelines require a capacity auction. Out of the three capacity auction options, the ring fenced developer-led auction was considered the least complex to implement. The additional auction scoring criteria of weighting or applying an uplift to the strike price would add complexity in determining the rules of the auction for the auctioneer to apply and the bidder to interpret.

Whatever RESS is implemented, this will be funded through the current PSO as the previous REFIT schemes were. Thus the impact on the PSO will depend upon the tariffs offered to projects and the mechanism for determining the tariffs.

The policy mandating of an option for community investment would affect all projects, so could have the most significant impact on the PSO of the policies considered, as there will be an increase in development costs of all projects as they are required to offer an option to invest to communities. This increase in costs would be apparent if compared to an alternative mix of wholly commercially owned projects (the developer-owned and utility scale defined in Figure 5). Nevertheless, it can be assumed that higher costs for developer-led community projects of securing investment would ultimately reduce over time as the market develops.

In comparison against costs of the policies to developer-led projects it is considered there would be relatively little difference between policies, ultimately ranging from €5,000 - €50,000 depending on level of investment sought and process used to raise investment. However, if all projects are mandated to offer an investment option, it is expected the costs of raising this investment across all projects would be reduced as the market would develop rapidly to support this fund raising.

As larger projects tend to cost less per MW than smaller projects (e.g. a 50MW wind farm costs less per MW than a single turbine) then the net cost to the electricity consumer will be lower if the community investment mandate was enforced for larger projects, but that would move away from the concept of community ownership of smaller decentralised developments. Ultimately it is a policy decision as to whether larger capacity projects are preferred or many much smaller projects. The larger will be likely be cheaper and the cost inputs to the DCCAEN parallel study “Economic Analysis to Underpin a New Renewable Electricity Support Scheme in Ireland” confirm this, however the smaller capacity distributed generation can increase the resilience of the national grid bringing down grid balancing costs.

The impact of the different auction mechanisms on the cost of electricity are considered to be similar. The reason is that unless a developer believes it will definitely be one of the cheapest it is economically rational to bid at a price which makes just enough to deliver a level of return expected by investors in the project, for if the developer tries to add extra money onto their bid it is quite possible they may not win.
Therefore, if a community uplift applied to the auction price bid was 1.5 cents/kWh and the developer-led community project determines that 7 cents/kWh would make sufficient profit then it is economically rational to bid 5.5 cents/kWh. Likewise, if there is a weighting to give advantage to developer-led community projects then on the assumption that a developer-led community project costs a bit more to build (due to higher costs of securing finance from community investors and learning effects) economically the developer-led community project would still bid a price that will satisfy their investors. This conclusion is dependent on the capacity market auction being oversubscribed and competitive, for if it is not there is a high chance that investors will start to ‘game’ the system.

It is understood that the DCCAE parallel study “Economic Analysis to Underpin a New Renewable Electricity Support Scheme in Ireland” which completed a quantitative assessment of a range of policies has identified auctions as the least cost mechanism for supporting renewables, with a FIP being used to determine the amount of operation aid paid to each project.

The cost to the public sector across all policies is considered relatively consistent, so the policies were scored consistently across each policy. Each policy will require administration costs. An auction process will require more guidance, analysis and policy development than the FIT and FIP, but it is likely to be marginal. The mandating of an investment stake is also likely to require additional guidance, monitoring and some form of due diligence or system to monitor the share offers. Ongoing monitoring of all policies by DCCAE and the regulator is expected, with controls to minimise policy overspend and identify any anomalies developing in the market.

The results of the assessment of primary policy options therefore determined that mandating an option for investment, a capacity auction and FIP should all be included in the policy mix, these are discussed further in Section 8.

7.1.2 Community-led primary policies

The analysis for community-led primary policies mirrors that of the developer-led community primary policy options, with the exception of the first developer-led community option (mandated option for community investment) which is not considered as by definition these projects are already community owned.

It is anticipated that community-led projects will be of a smaller capacity if they are to avail of the preferential grid access that is proposed as a possible enabling policy (as in Section 6.2.2.2) and as stated in Section 3.2, is essential if community-led projects are to secure grid access. As outlined previously, this would likely apply to projects up to a particular threshold capacity, which would likely relate to the maximum transformer capacity at a distribution node, often 5MVA\(^3\) hence a maximum capacity of 5MW\(^34\). This could therefore align with the capacity thresholds included in the primary policy options, subject to State Aid considerations. Hence as with developer-led project, the larger community-led projects would be subject to a capacity auction and FIP, with the smaller projects receiving operational aid through a FIP.

Given the ambitions of many community projects (e.g. multiple farmers coming together to diversify its revenue base, a municipality looking to install solar panels on a school, a community in a village wanting to take part in the energy transformation) the larger capacity markets (for wind projects above 6MW and other technologies above 1MW) are likely to be less attractive. In addition to this, the complexity of capacity auctions is likely to be a significant barrier to smaller community-led projects.

\(^3\) Nodes in Ireland have two 5MVA transformers, but require 100% redundancy, reducing available capacity to 5MVA. Additional capacity on the node becomes available dependent upon the demand on the node, so more than 5MW capacity may be available. A detailed analysis of network capacity is required to determine an appropriate level of capacity to make available. It is expected this would be completed as part of further analysis by CER.

\(^34\) A more detailed assessment of this threshold is required and beyond the scope of this report.
The conclusion of the community-led primary policy analysis, like that for developer-led projects is therefore that FIPs are the most appropriate for wind projects less than 6MW and other projects less than 1MW. Further, supporting FIPs rather than FITs State Aid guidelines now require some form or market mechanism in awarded operating aid for more mature technologies. In the criteria analysis, the complexity of implementing a FIP would be less than that of a FIT, as additional approval would be required from the European Union. In addition, FIPs are more cost effective than FITs if designed correctly, which is discussed further in Section 7.1.1.

Again, as for developer-led community structures, when the auction mechanisms are compared in isolation, a ring-fenced auction for community-led projects is less complex and more cost-effective than the two other options of uplifts or additional weighting. However, as it is expected that there will be a limited number of larger community-led projects, there are unlikely to be sufficient projects to enable a competitive auction to take place. It is therefore recommended that community-led projects participate in the same auction as developer-led projects. The details of this are discussed further in Section 8 when the detail of the final policy mix is considered.

7.2 Enabling policies

The following sections summarise the results of the analysis of the enabling policies for assisting developer-led community projects and community-led policies. These are considered separately. Section 8 brings together the suggested optimal combination of these enabling policies taking all factors into account.

The scores across each of the criterion were totalled and the results of the analysis are presented in Table 15. Some policies are in hatched shading because they are outside the scope of the RESS to implement, but should be reconsidered in the medium term.

Table 15: Results from multi criteria analysis of developer-led community and community-led enabling policy options

<table>
<thead>
<tr>
<th>Developer-led community</th>
<th>Community-led</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Policy</td>
</tr>
<tr>
<td>1</td>
<td>Mandatory investment gifts to community</td>
</tr>
<tr>
<td>2</td>
<td>Facilitating direct supply through virtual metering</td>
</tr>
<tr>
<td>3</td>
<td>Facilitating direct supply through private wire</td>
</tr>
<tr>
<td>4</td>
<td>Ring-fenced grid access</td>
</tr>
<tr>
<td>5</td>
<td>Facilitating direct supply through virtual metering</td>
</tr>
<tr>
<td>6</td>
<td>Facilitating direct supply through private wire</td>
</tr>
<tr>
<td>7</td>
<td>Permitted developments for community projects</td>
</tr>
<tr>
<td>8</td>
<td>Small scale generators required to match local demand on the distribution network, reducing transmission level supply</td>
</tr>
</tbody>
</table>
7.2.1 Developer-led community enabling policies

The first enabling policy considered to support community ownership of renewable energy is mandating developers to gift an equity share in the renewable project to members of the community who are directly impacted by the project. When discussed during the stakeholder consultation, this was not considered a viable policy. There are a number of barriers to this policy being implemented. Property rights are enshrined in the constitution, and any mandatory transfer of property from one entity to another would need to have a clear and justifiable public interest in bypassing these rights. Article 43 of the constitution states that “The State guarantees to pass no law attempting to abolish the right of private ownership or the general right to transfer, bequeath, and inherit property”.

From the community investor perspective, there is a right to sell their property unencumbered (e.g. shares) to a third party. If the shares are transferred to another individual who is not a member of the community, this undermines the original intention of the gift, which was based on ownership by members of the community.

This was therefore not considered further as part of the enabling policy mix.

The two other developer-led community policies considered were direct supply through private wires or virtual metering. However, for the reasons discussed in section 7.2.2 below, however these were not considered viable for developer-led projects.

7.2.2 Community-led enabling policies

Without funding being made available to community-led projects through all development stages of the project, it is unlikely that many community-led projects will be commissioned, for the only opportunities will be those developed by local authorities or community groups with access to cash that may well be lost if projects fail. Community groups with limited cash will not be able to engage. Therefore, grant funding for feasibility studies is required for such community-led projects otherwise communities will have to raise this high risk capital, which is likely to be a significant barrier to communities. The same is true of the early development stages of the project.

Unless new sources of small (sub €1 - €2 million) construction finance become available, it is unlikely that a bank will provide project finance as the transaction costs are too high. Even with a FIP or FIT, a bank will consider the cost disproportionate and high risk compared to the level of funding. As well as transaction costs, there is less likelihood of repeat business, which banks want to see, as it reduces their costs in future loans. Hence, from the assessment scoring, the top 3 enabling policies are all considered essential to the development of community-led projects.

Implementing this support is not considered particularly complex, with many examples of how this has been delivered internationally and all within the control of DCCAE and SEAI. The funding of community-led projects has increased skills and capabilities within the communities supported and the wider community sector in other jurisdictions (e.g. the UK) providing wider benefits beyond the community being supported. These policies will have a cost to the public sector, although successful projects will ultimately repay their loans plus interest, ultimately reimbursing the tax payer.

The current options for grid access present a barrier to community-led projects, and more widely to all new renewable projects, both in terms of connecting to grid and the cost of the connection. Ring-fencing grid access for community-led projects should be considered, along with the costs of connection and the timing of the connection, which will be affected by the queue of projects that have already applied for a connection (see Section 3.2). Community-led projects are geographically constrained, so unlike commercial developers cannot look to alternative locations should a local grid connection not be cost effective or achievable in the required timetable.
Implementing any change to the grid application process or access to a grid connection will require input from CER, who are currently consulting on future arrangements, so aligning the development of the community support policies with the CER consultation is essential. Ultimately across these four policies, it is not expected there will be a large number of projects developed and regulatory changes to allow grid access will be required, which will limit the capacity of these projects, so the effectiveness of delivering community ownership will be significantly lower than for developer-led projects.

Four other enabling policies were considered, but these have been discarded as they failed on the first criterion, namely are they within the scope of the RESS policy. They are

i. Facilitating direct supply through virtual metering;
ii. Facilitating direct supply through private wire;
iii. Permitted developments for community projects;
iv. Small scale generators matching local demand on the distribution network.

The assessment of other grid related enabling policies that could help address the current constraint on grid access, namely private wire arrangements and virtual metering options, were seen as positive from a cost perspective and sharing of benefits. However, the legislative barriers to allow private wire to be implemented were too high and outside the scope of the RESS, requiring input from additional stakeholders, so are not taken forward. In particular, there would need to be changes to the Electricity Act and other regulations. Therefore, it is recommended that these two enabling policies should be revisited in the medium term.

Permitted development of any renewable project (or particular technologies) below a certain capacity has a significant potential for increasing community ownership in renewables, as it would reduce some of the planning barriers to renewable projects. For example, the UK has approximately 3.2GW of small scale solar installations the majority of which will have been installed under permitted development. This policy would primarily apply to micro-renewables which are being considered as part of the scope of the work being undertaken by CEPA. This is likely to be a complex policy to implement requiring regulatory changes across all planning authorities.

Matching local demand to local supply represents another opportunity to reduce further grid investment, but mandating that generators could only locate in places with surplus electricity demand would mean that many rural projects (often located in areas with very good resources for e.g. wind, solar or biomass projects) would not go ahead. Also, unless the policy was to apply to generation of any scale (e.g. new 900MW gas fired power station) it may be seen as discriminatory.

7.3 Supporting measures

The primary policies (see Section 7.1) and enabling policies (see section 7.2) will address many of the barriers identified in Section 6.1; however, they do not address all of the barriers. The following proposed measures will facilitate greater community involvement in community-led and developer-led community energy projects.

A short summary of each supporting measure is provided and how it will support greater community ownership of renewables. Although there was not a formal ranking of supporting measures Sections 0, 8.6 and 8.7 explain the ones that are recommended.

7.3.1 Trusted Intermediary

There is a role for a Trusted Intermediary (TI) to provide communities with support by coordinating activities across a wide range of public sector and private sector organisations.
7.3.1.1 The role of the Trusted Intermediary

The TI would play a role as follows:

- An independent facilitator and broker of dialogue between communities and developers as required;
- Working with local energy agencies, community experts and local government to ensure that information is provided to citizens in a timely and accessible manner;
- Supporting community participation in renewable energy and energy efficiency projects to share best practice, provide information and ensure that local strategies align with broader Government policy;
- Providing funding and support for community-led projects in the initial stages of development, planning and construction; and
- Supporting, in particular, the emerging energy co-operative movement as one means of facilitating community participation.

Whilst the primary policies and enabling policies address the funding barriers identified in Table 10: Challenges to uptake of community-led renewable energy projects in Ireland (from stakeholder interviews and workshop) they do not address the public perception of renewable projects, the lack of experience of communities in developing renewables or the limited skills within a community.

The TI could address these barriers and could directly, or as a facilitator, support communities to engage a Trusted Adviser (TA) - see Section 7.3.2. Strong communication skills will be an important attribute of the TI, and the TI will need to have technical expertise in renewable energy projects.

7.3.1.2 Why the role is important?

As highlighted by international literature and then discussed during the stakeholder engagement process there is a benefit of having intermediaries which provide expert, impartial advice and engage with communities. Delivering a nationwide intermediary service allows for better links between national and local processes and the paper points to the Community and Renewable Energy Scheme (CARES) programme in Scotland, which offers an effective “one stop shop” for communities (SLR, 2014).

The role of the TI of the CARES programme, is carried out by a consortium of organisations with a strong history of community engagement operating under the Scottish Government brand Local Energy Scotland (LES). LES has a role in informing, responding to and adapting policies that impact community renewables. It has published good practice guides on community benefit and shared ownership.

It has a team of nine development officers dispersed across the country as the first point of contact for any local member of the community, community organisation or developer. There is a central support team that provides the administration functions of grant and loan management. One of the subcontractors assists with technical questions across a gamut of technologies and undertakes ongoing due diligence on projects.

In total the CARES programme employs approximately 20 staff and has a budget of £3.5 million over four years for staff costs, events, marketing, community liaison and more. It has had a direct role in financially and technically supporting in excess of 300 communities over the last 4 years. The Local Energy programme in Wales has a team operating in a similar role. The two programmes work closely together to share learning, good practice and resources.

In Ireland, research suggests that consultations on wind energy developments are not very effective and people feel that there is not sufficient opportunity for communities to participate in decision making. To address this one report recommends using key influencers within communities to encourage local people to become involved (UCC; MaREI, 2016). Further hampering renewable growth the majority of individuals interviewed expressed distrust of commercial wind farm developers. Thus, the TI has a key role to play as the interface between the community and the developer for without such a body it may
be very difficult to increase public acceptance of a shared ownership model either for developer-led community projects or community-led projects.

7.3.1.3 Types of organisations that would fulfil this job

Delivery of the role through local or central government is possible but would need to address perceived potential conflicts of interest and liability. Another route could be a Government funded delivery vehicle, independent of central departments, acting as a mediator between the developer and the community, which could be delivered by an organisation that is currently in existence in Ireland. This could remain within the public sector or could be tendered to private sector players, as with the Scottish CARES and Welsh programme.

The TI will need the governance, structure and competence required to administer the grants and loan awards. Any funding should be available nationally to projects with an adequate resource (wind, solar, hydro, biomass etc.) so the TI should be in a position to manage this.

7.3.1.4 Conclusion

A TI, as a facilitator, has a role to play in leading the development of the sector and engaging with a range of stakeholders including communities and developers. It can act as an intermediary between the different stakeholders within the sector, developers and communities, and can educate citizens in the role of community energy.

7.3.2 Technical, legal and financial advice to communities

The development of a renewable project is a complex process. There are many international case studies of communities successfully securing planning consent, grid access, selecting contractors and operating renewable generation equipment. However, there are equally many examples of these projects taking significantly longer to develop than commercial developments due to the lack of experience and expertise within communities as well as the lack of development capital.

Although mandating an option for investment in renewable projects by community is easy to implement legislatively, there will be support required for the sector, as there will be a lot for retail investors to learn, interpret and understand. Renewable projects are not a quick way to make money, returns are commonly spread over the life of the assets, which could be 25 years or longer. Therefore, communities and investors into these community projects will require specialist advice.

In Denmark, Environment & Energy Offices (EEO) were set up and funded by government to help communities develop renewable energy projects. One example is the Middlegrunden Wind Farm which benefitted from help provided by the Copenhagen municipality owned energy company, who represented the local co-operative and took on a project management role. In Scotland and Wales the CARES programme and Local Energy programme provide free support to communities in the procurement of specialist advisers. The grants and loans available through these programmes fund the specialist advisers time on the project. In Section 4.1 and 4.4 successes in Canada and the UK were presented and TA support exists in these countries also.

The level of advice required would vary from community to community, depending upon the capabilities within the communities, but it is expected that some or all of the support highlighted in Figure 6 overleaf may be needed. If the community is a co-investor then the legal and financial advice will more likely be focused on legal agreements, negotiating deals and forming shared ownership legal structures (e.g. joint ventures or split ownership of shared revenue delivery vehicles).

Therefore, whether the project is a developer-led community project or a community-led one the community is still likely to need signposting by the TI. The TI could have a role to play providing a list of framework experts communities can approach, and also advising communities on how to prepare tender documents to select TAs (e.g. with template terms and conditions). On the CARES programme there is a framework contract of TAs who have been pre-screened by Local Energy Scotland.
Figure 6: Types of technical, legal and financial assistance and advice communities may need

**Technical advice**
- Development
  - Project management
  - Feasibility studies, including site selection and screening
  - Yield assessments: providing early estimates of the levels of solar irradiation, wind speeds, river resource flows
  - Consents: Planning applications, environmental permits, grid connection

- Construction
  - Project management
  - Procuring generators, detailed design, civils contractors, electrical contractors
  - Managing on site construction programme, discharging any planning conditions and other statutory requirements
  - Manage equipment takeover

**Legal advice**
- Development
  - Land title searches
  - Securing access, way leave and servitude documents
  - Securing exclusivity, option and lease agreements
  - Setting up appropriate legal structures

- Construction
  - Due diligence support
  - Contracts review (turbine supply agreements, power purchase agreements)
  - Procuring generators, detailed design, civils contractors, electrical contractors
Community benefit refers to a range of both monetary and non-monetary benefits that may be gifted to a community due primarily to their proximity to a renewable energy development. The benefits can be in the form of broader socio-economic benefits arising from a development, or a specific financial mechanism to generate additional benefit to the local community.

Community benefit from renewable energy developments can be broken down into four main types summarised below (Cave, 2014):

1) Community funds where a trust fund receives a lump sum and/or regular payments from the developer/operator and awards grants to the local community or environmental projects;
2) Benefits in kind which includes local infrastructure or other amenity improvements or supporting local schools;
3) Energy efficiency schemes which assist communities reduce their heating and electricity costs; and
4) Using local supply chains, for example through contracting to local firms, and other employment and training opportunities during the project design, construction and operation.

Community benefit payments do not increase community ownership of renewable energy assets, however, they have had an important role to play in increasing the acceptance of renewables. There is a significant body of research that shows that community benefit payments are a strong motivator for communities to become more accepting of renewable projects, increasing social acceptance (Sandy Kerr, 2017). They ensure that citizens within the wider community benefit from the development of a renewable project.

Community benefit payments can be mandated, but in other jurisdictions good practice guides are sufficient for community benefits to become the norm. In Denmark if local renewable projects secure public support and are built then the local government builds local parks, or other amenities.

Some of the main benefits realised by community groups, developers and various levels of government are highlighted in Table 16. Nevertheless, ultimately community benefit payments are simply a way to redistribute income for if community benefit payments become the norm then the cost of electricity rises, which is paid by all electricity consumers. If mandated, community benefit payments may be construed as an additional form of taxation.

| Table 16: Main positive outcomes of community benefit mechanisms |
Assessment of models to support community ownership of renewable energy in Ireland

<table>
<thead>
<tr>
<th>Communities</th>
<th>Developers</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases monetary and non-monetary benefits received by neighbouring communities so benefitting all members of the community.</td>
<td>Reduces the likelihood of development objections.</td>
<td>Contributes to the achievement of national and regional government targets e.g. emissions reductions, security of energy supply and job creation.</td>
</tr>
</tbody>
</table>

### 7.3.3.1 Examples of community benefit payments

Examples from other jurisdictions show the level of community benefit payment is often calculated in terms of a fixed payment each year per MW of installed capacity. However, there are other ways to calculate community benefit including payments per MWh generated. A per MW payment provides the community with a fixed payment each year, often allowing long term planning to be made as there is an expected revenue stream each year. Per MWh payments on the other hand are more equitable for technologies such as solar with low annual output per installed MW.

The level of community benefit payments offered by projects typically varies by jurisdiction. Table 17 highlights examples of how the community benefit payments have been implemented in other jurisdictions.

#### Table 17: Examples of community benefit payments

<table>
<thead>
<tr>
<th>Example</th>
<th>Details</th>
<th>Approximate payment (£/MW/year)$^{35}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Highland Council Community Benefit Policy (Scotland)$^{36}$</td>
<td>The Council’s policy position on Community Benefit from renewable energy developments was agreed on 3rd March 2011 whereby Developers will provide Community Benefit of not less than £5,000 per installed Megawatt per year that annually appreciates in line with the UK Retail Price Index.</td>
<td>6,000</td>
</tr>
<tr>
<td>Community Benefits Protocol (England)</td>
<td>Under the Protocol, developers in England with qualifying projects commit to provide community benefits of £5,000 per MW of installed capacity per year, or equivalent benefits-in-kind, directly to host communities.</td>
<td>6,000</td>
</tr>
</tbody>
</table>
| IWEA Best Practice Principles in Community Engagement & Community Commitment (2013)$^{37}$ | • Support equivalent to a value of at least €1,000/MW of installed capacity per annum, index linked for the lifetime of the project to be provided.  
• This is used by the majority of commercially led renewable energy generation projects in Ireland. | 1,000 |
| Scottish Government Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments$^{38}$ | For small scale projects (50kW-5MW) supported through the CARES programme: rural business applicants to CARES are required to provide community benefit of £10,000 per installed MW per annum. | 12,000 |
| Scottish Government Good Practice Principles for Community Benefits | Key principles of the national guidance are the promotion of a national rate equivalent to at least £5,000 per MW per year, index linked for the operational lifetime of the onshore wind | 6,000 |

$^{35}$ Assuming 1.2 Euro = 1.0 GBP. Note, that figures provided are not as indicated by source and have not been adjusted to 2017 values.

$^{36}$ Guidance on the application of the Highland Council Community benefit policy for communities and for developers of onshore and offshore renewable energy developments (2013).

$^{37}$ http://www.iwea.com/index.cfm/page/iweabe/2013...true

There are a wide variety of mechanisms used internationally for managing and distributing community benefit payments. These include local authorities managing payments on behalf of the developer, private organisations managing the payments on behalf of the developer or the developer administering the fund themselves. In Ireland, for example South East Cork Area Development, a LEADER company already carry out this function for some wind farms owned by ESB. Meath County Council also administer a community benefit programme which is funded by a waste to energy plant in the county.

**Table 18** highlights average community benefit payments for projects in Scotland and England. These figures are taken from the community benefits register in these countries. The Irish Energy White Paper sets out a provision to oblige developers to report their community benefit payments through a register that will be set up. The implementation and monitoring of this register could fall within the responsibility of the TI.

**Table 18: Examples of international registers of community benefits**

<table>
<thead>
<tr>
<th>Example</th>
<th>Details</th>
<th>Approximate payment (£/MW/year)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Register of Community Benefits and Engagement (England)**</td>
<td>Average community payments from 29 recent projects: £3,096 per MW per year</td>
<td>3,720</td>
</tr>
<tr>
<td>Scottish register of community benefits (Scotland)**</td>
<td>Average community payments from 166 recent projects: £6,318 per MW per year</td>
<td>7,580</td>
</tr>
</tbody>
</table>

### 7.3.3.2 Conclusion

Community benefit payments help increase local support for renewable projects, especially amongst citizens of limited financial means. International evidence shows if a decision is made to promote community benefits through good practice guidelines, with strong political support, such as in Scotland, then community benefits payments can exceed good practice limits. A community benefits register is a powerful tool to promote good practice and requires management of the register and promotion community benefits.

### 7.3.4 Tax incentives for citizens to invest in project

Tax incentives have proved effective in stimulating a wide range of investments in Ireland, including in renewable energy. They have also been used internationally to support community ownership of renewable energy projects.

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**Notes:**

40 http://www.localenergyscotland.org/view-the-register/
42 5kW @ approximately €1200 (retail) per kW installed = 6000. Assume developer costs are 70% of retail value: thus, €4,200 per MW project.
43 Assuming 1.2 Euro = 1.0 GBP. Note, that figures provided are not as indicated by source and have not been adjusted to 2017 values.
44 http://www.communitybenefitsregister.org/
45 http://www.localenergyscotland.org/view-the-register/
The discussion and conclusions below are subject to the relevant entities (companies or investors) obtaining tax advice regarding their own specific circumstance. This summary is for information purposes only and has not been prepared by qualified tax advisers.

The main ways that an individual in Ireland could currently avail of tax relief by investing in a renewable energy project are:

- By charitable donation. If the entity that owns the renewable energy project is a registered charity, then an individual can donate between €250 and €1 million per year and obtain income tax relief on the donation, where the income tax rebate goes to the charity rather than the individual;  
- By investment in an EII (Employment and Investment Incentive) qualifying company. Green energy is one of the qualifying activities for individual investors to get tax relief under the EII. Renewable energy projects have been successful in raising capital in this way. A qualifying investor can invest between €250 and €150,000 per year in qualifying companies and obtain an income tax credit for up to 40% of the investment amount, subject to the company meeting employment criteria. In practice, a minimum investment of €5,000 is set by the company, due to the transaction costs and administration entailed. Examples are provided in Section 5.1;  
- By investing through a self-directed or self-administered pension. There are a number of ways an individual can do this, depending on their income, employment and professional advice obtained. A SSAP (small self-administered pension) is one product typically used. The administration costs and complexity mean this tends to be used by high net worth individuals. A renewable energy project could include the possibility for pension tax relief for high net worth individuals within a community who subscribe for shares; and  
- By capital gains tax relief. Any individual is entitled to an annual capital gain without being taxed. The first €1,270 of an individual’s annual chargeable gains is exempt. Obviously this includes all capital gains, not just those from an individual project.

Other countries have some more accessible options for tax relief investment. For example, in the UK Abundance Investments (a crowd funding platform) allows citizens to invest in renewable energy projects from as little as £5 using income tax exempt Investment Savings Accounts.

7.3.4.1 Conclusion

The EII scheme has been successful in raising capital from citizens in renewable energy projects. There is good potential to make this scheme more accessible to a broader range of investors via crowdfunding, or find other ways to decrease transaction costs and administrative burdens. However, any scheme which enables citizens to reduce their tax bills obviously reduces the amount of finance Government has to operate. Tax incentives like these would encourage citizens to invest in community renewable energy projects.

7.3.5 Implementing a Regulatory framework for crowdfunding

As well as community share offers that communities can launch themselves, there are other platforms communities use in other jurisdictions. For example, the crowdfunding website Abundance Investments in the UK charges community owned projects an arrangement fee (which covers the due diligence) and an annual management fee. The service they provide community renewable projects allows communities to raise some or all of the construction finance for single projects or multiple projects.

47 http://www.solarpowerportal.co.uk/news/pensions_investor_makes_first_play_into_ground_mount_uk_solar  
By bringing lots of community projects onto one website they increase the visibility of community energy beyond the citizens living near the renewable projects. Investors do not have to be based in the same country as the project they are investing in, anyone can invest in them, although some offers have preferential terms for residents living close to a particular project. Investors like the fact that the money they contribute is invested in a particular project. A study from CrowdfundRes outlines a range of different crowdfunding projects across different renewable technologies across France, Germany, Austria, Belgium and the UK. The funding raised between 7% and 100% of the overall equity required.[49]

There are examples of crowdfunding in Ireland, however it is not regulated which is a significant barrier for larger investments. As highlighted by the European Investment Bank:

“Very few of the crowdfunding platforms are really successful. In order to grow, crowdfunding needs a friendlier regulatory framework but also to be more professional with regards to transparency and trust”[50].

In June 2014 the Central Bank of Ireland issued a Consumer Notice on Crowdfunding which alerts consumers to the fact that crowdfunding is not a regulated activity[51]. As a result of the risks in crowdfunding (e.g. crowdfunding is often used by companies that have run out of other potential financing avenues, and the potential default risk is not accurately assessed or communicated to investors), the UK’s financial regulator, the Financial Conduct Authority, has started to regulate crowdfunding sites that offer peer-to-peer lending (loan-based crowdfunding) or investment-based crowdfunding (where investors own shares or debentures in companies)[52]. For example, Abundance is now Financial Conduct Authority regulated.

Many crowdfunding loan offers and share offers are not as formal as bank loans which will have many tests to ensure the bank gets paid every six months (e.g. Debt Service Cover Ratios). Rather, crowdfunding investors into wind projects for example are made aware that wind generation can be very variable between years so that in those less windy years their returns may be low or zero, but on average they should get the target return. This flexibility is therefore really beneficial for renewable projects whose annual output can be very variable (e.g. wind and hydro in particular).

Evidence from the UK is that crowdfunding can be used on its own for projects that cost up to about €1-€2 million, or used in combination with commercial bank loans for larger projects of €3-€7 million, with the crowdfunded investors being subordinated to the commercial bank. Without crowdfunding or a community share offer, projects like these may find it very difficult to get finance as banks are reluctant to lend below circa €2 million due to the high due diligence costs. Therefore, crowdfunding can enable well managed projects to finance schemes from €500k to c€7 million, just the type of scheme most community-led projects are.

7.3.5.1 Conclusion

The Central Bank of Ireland is actively monitoring developments in this area and will continue to work closely with other European authorities in this regard[53]. The Department of Finance is currently undertaking a detailed analysis of crowdfunding and is engaging with the Central Bank of Ireland in advance of holding a Public Consultation on the Regulation of Crowdfunding in 2017.

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[52] https://www.fca.org.uk/consumers/crowdfunding
[53] https://www.centralbank.ie/consumer-hub/consumer-notices
Clearly there is a spectrum of the types of crowdfunding found, but there is merit in considering regulations for those investments at the less risky end – namely crowdfunding sites that promote tangible projects backed by strong evidence of cash flows, where investors loan money or invest equity into projects. As explained in Section 7.3.6 renewable projects, such as building solar and wind farms where electricity prices are ‘guaranteed’ and linked to an inflation rate, are arguably within this lower risk category.

If this type of crowdfunding is regulated, then in time and with evidence of payment rates, other crowdfunding opportunities could then become regulated. As with any type of crowdfunding, the investors into community renewable projects often have sufficient cash resources that if the project was to fail they would still have sufficient savings. This is therefore a discreet self-selecting segment of the population, but by being open to any retail investor in Ireland or potentially the EU increases the size of this market.

7.3.6 Supporting green bonds to facilitate community ownership of renewables

Green bonds and variants of green bonds are gaining global traction as a way to differentiate financial offerings. Whilst there is no global agreement on how to define a green bond, the key tenet is that the monies raised from the bond launch should be used to invest in climate mitigation solutions, or climate adaptation solutions. The International Capital Markets Association has established a set of Green Bond Principles, which are voluntary process guidelines that recommend transparency and disclosure, and promote integrity in the development of the Green Bond market (Association, 2016).

Green bonds were first launched by the World Bank with pension companies and other institutional investors financing the bond. The bond proceeds were then on-lent to World Bank supported projects that reduce carbon emissions.

There are potentially a number of opportunities for an Irish investment fund to be formed which could be listed on a stock market or made available through other routes. Such a fund could be owned by the Government, have the backing of the Government or be set up privately. A detailed review of the market is required to determine the potential success of a Green Bond, the following examples outline some key considerations in setting up a bond.

The Fund could have a mandate to invest in renewable projects, which could even be limited to community owned renewable projects. Community projects could then approach the Fund for finance. However, that would require significant due diligence by the Fund for every application, as the Fund would be replicating the due diligence banks normally undertake. To reduce these due diligence costs and also reduce risk the Fund could be limited to any community owned project which has two years of operational performance data. Thus, the Fund would become a refinancing facility, leaving the ownership of the project with the original shareholders. Importantly the Fund would have no obligation to refinance any project, and this would make sure that the Fund would only target the well-built, well-managed less risky projects. This solution still leaves the important construction finance to come from a different source, such as soft government loans, vendor finance or other commercial lending solutions.

To secure the most cost-effective finance it is quite possible that 50% - 60% of the Fund could be raised from pension companies and institutional investors, who may be prepared to accept very low returns (e.g. 1-2% per year), especially if the returns could be linked to any auction strike price inflation increases, in which case negative real returns may be accepted. The remainder of the Fund would then be open to Irish retail investors (and other EU investors like Danish share offers) who would be sub-ordinated to the pension companies. By combining these two investor types it is probable that finance would be available more cheaply than commercial banks can offer to standalone projects; for if sufficiently large the Fund may be able to support many renewable projects, significantly reducing risks.

In return, because the project would still be owned by the original shareholders they would take first loss, but also any upside.
Another green bond option could be for the Fund to buy operational renewable projects. In Ireland and other jurisdictions there is already an active secondary market in operational renewable assets. As there is significant risk in developing projects (e.g. recent figures show a 7% failure rate for solar planning applications\(^54\)) the returns the original investors make on sale can be considerable, but is compensation for the many other abortive projects they have had to expense.

In the UK communities have tried to buy operational assets from commercial developers and have been successful in a few cases, but in the majority of cases other commercial investors have been able to offer higher purchase prices. Therefore, with this idea the Fund would be competing against other secondary market investors, but given its lower cost of finance may be able to offer a higher price, although other investors also leverage their portfolios.

For citizens to invest significant sums of money into one renewable project near their homes is risky as there will always be renewable projects that fail. However, as an asset class backed by some Government guaranteed inflation linked revenues, renewable generation is less risky. Therefore, investing into a Green Bond which on-lends to 20 or 30 operational community projects (rather than in projects being developed or constructed) diversifies away much of inherent project specific risk. Given the potentially lower cost of finance, this potentially leaves greater surplus money that could make the project more competitive or partly used to make community benefit payments as described in Section 7.3.3.

There are already Infrastructure Funds which invest in secondary assets, whether that be refinancing or more commonly acquisitions. There are a few funds that invest in a few renewable projects, e.g. in the UK the renewable developer Thrive has launched a bond\(^55\), as has Ecotricity\(^56\). In Ireland, some commercial firms have commenced similar funds (e.g. NTR\(^57\) or Greencoat Capital\(^58\)). Both NTR and Greencoat deploy capital from the public funds of the Ireland Strategic Investment Fund as well as pension funds and other institutional investors.

7.3.6.1 Conclusion

Green bonds have been suggested as a means for increasing citizen ownership of renewables and also as a means to increasing the acceptability of renewables. There are many different permutations for bonds that may be appropriate for this within the examples developed by the private sector in other countries. A bond could potentially increase investment in renewables with communities having the opportunity to invest in the bonds, through the likes of ISAs or pensions, but it would not necessarily increase public acceptance as the Fund would need to be marketed like any other retail investment product.

However, the fact that a green bond like the one suggested would diversify risk by investing in many renewable projects could also turn some investors away who prefer the idea of investing in a wind farm they can see from the window. Further, if the Fund was targeted to people who are not high net worth individuals then there would have to be very careful marketing that would need to learn from the Telecom Éireann flotation (already discussed in Section 5.1) where many smaller investors lost money. Another difficulty with renewable projects is that as they are normally heavily levered many of the returns come in the latter years of a project, which can be 10 or 15 years hence. This may also reduce retail investor buy-in.

Nevertheless, with a suitable regulatory framework a Green Bond market is likely to develop within the private sector if the conditions are right to support renewable projects generally.

\(^{54}\) https://www.linkedin.com/pulse/utility-scale-solar-planning-pipeline-may-2015-stephen-d-walsh. There are limited figures available for solar planning applications due to the short time over which developers have been submitting applications. This is a sample of 197 applications.


\(^{56}\) https://www.ecotricity.co.uk/about-ecotricity/ecobonds


7.3.7 Set up new legal structures to facilitate community renewable deals

One of the challenges and barriers to community energy in Ireland identified in Table 10 is the lack of easy to use legal structures for the projects. To allow community groups to invest in or own a renewable project that will generate a profit for the benefit of the community requires company structures that facilitate this to ensure that any profits are indeed used for community benefit. For example, in Ireland, there is no dedicated legal structure for a social enterprise59.

However, at the moment there are four main structures not-for-profit communities can select. Commentary is provided as to their suitability for community renewable projects.

i. **Unincorporated association.** Many not-for-profits start as unincorporated associations and for small groups, communities or clubs this may remain the preferred and appropriate method for ensuring a collective interest and ownership of a group. There are no shareholders, and no formalised corporate governance structures, but many clubs for example do own assets and operate effectively as an organisation.

The unincorporated association has no need to file or publish accounts or returns and there is no requirement to have any rules or regulations set out in writing. The unincorporated association has no separate legal personality from members which means no limited liability. The members will be personally liable for any liability of the club not met by its assets. Therefore, this makes an unincorporated association unsuitable for owning, operating or investing in a renewable energy asset of any significant scale.

ii. **Public or Private Guarantee Company.** After starting as an unincorporated association many not-for-profit organisations become either Private or Public Guarantee Companies. As a guarantee company does not have a share capital (in the case of public guarantee) or a nominal share capital (in the case of private guarantee), the members are not required to buy any shares in the company. The company’s constitutional documents are typically structured with a specific goal in mind (community interest, in the case of communities), and any profits retained can be reinvested in the community, but not distributed. Charities often use this structure.

iii. **Private limited company.** This is the best known company structure, typical of most commercial enterprises. It allows for individuals to own shares in and benefit from distributions from the company. It is limited to 99 members/shareholders. It is used for not-for-profit groups, though it is less common than the guarantee company as a structure for not-for-profits. Where there is a requirement to have more than 99 shareholders, a PLC structure or co-operative would need to be considered.

iv. **Co-operative society.** This is a well-established one-member-one-vote structure. Members can subscribe for different amounts of shares in the co-operative (co-op). A co-operative is an enterprise which is owned and controlled by its user members and operates for the benefit of its user members. There are many community enterprises that operate as a co-op, such as group water schemes or community development groups. There is a higher setup cost and longer establishment process than the other types of not-for-profit structures outlined. There is no limit on the number of members in a co-op.

59 [http://www.socent.ie/community-interest-companies/](http://www.socent.ie/community-interest-companies/)
7.3.7.1 New possible legal structures

For reference, two examples of dedicated legal structures used in the UK are presented notably a Community Interest Company and a Community Benefit Society (or BenCom).

1) A Community Interest Company is designed to allow social enterprises to use their profits and assets for social good. There are two primary features for any company holding CIC status:
   - An asset lock, which secures those assets to be used for the benefit of the community or transferred to another organisation which also has an asset lock, such as a charity; and
   - A community interest statement, which ensures that there are limitations on dividends paid to shareholders so that, while a profit can be made, the primary goal remains on benefiting the community.

2) A BenCom is a company that is set up for the benefit of the community. As its name implies, a community benefit society is required to operate for the benefit of the community it represents, not for the financial or other gain of investors.

In many ways, a BenCom can operate in much the same way as a limited company, for example:

   - Its shareholder or members have limited liability, so they cannot be held liable for any debts above and beyond the value of their shares;
   - It has a legal identity just like a limited company and can enter into agreements or contracts with third-parties; and
   - It can own property and assets, borrow money and employ staff and contractors.

The main difference between a BenCom and a limited company with shareholders is that it is democratically controlled by its members on the basis of OMOV (one member one vote) so each member has the same amount of say, irrespective of their shareholding.

Both these structures could be set up by a community for the sole purpose of developing or investing in a renewable project, such that the profits from the organisation are ultimately used for the benefit of the community.

7.3.7.2 Conclusion

Social enterprises do operate successfully under Irish company structures at present. Guarantee companies and co-operative societies are the legal structures most suited and typically used by not-for-profit social enterprises. Whilst there is potential for some structures to alter their constitutional documents in a way that would not support the original mandate to deliver community benefits, this could be audited. They can be established with a specific mandate to invest any surplus/profits into a community.

Although CIC or BenComs restrict activities further, and therefore have some additional benefits, creating a new Irish legal form for social enterprises would entail a major overhaul of Irish company law in the wider context of all not-for-profits and charities.
8 Detailed model design for delivering community investment in renewables

This section details the proposed model of policies and measures for supporting community ownership and participation in renewables. It recommends the most effective measures to address the barriers identified during this study, whilst ensuring that costs to consumers are minimised. Ultimately it takes the identified and suitable policy options from section 7 and looks at how they could be combined and applied in an Irish context. Key risks related to the policy options are outlined with regards to community investment. This is not a detailed risk assessment of the full RESS, but a focus on the risks associated with community investment.

In developing a model for community ownership of renewable projects in Ireland, there is not one design that will work for all communities or all technologies, so a wide range of policy options is required. To address the wide range of barriers identified in Section 6 a range of policies and supporting measures is required. An overarching point highlighted during the stakeholder engagement and from the literature is that to prevent division in communities, there should be a high level of community engagement and a tangible benefit of some description for everyone who is affected by a development.

The scope of this study does not include good practice for community engagement, there has been a considerable amount of research into good practice elsewhere and the application of this could form part of the role of the TI, which is discussed in Section 8.6.1.

The various recommended policy options and the stage of project development to which they would apply are summarised in Figure 7, including the relevant sections they draw on.

**Figure 7: Summary of policy options, supporting measures and the stage of project development they would apply**
As can be seen by comparing the full list of policy options and supporting measures identified in Sections 6 and 7.3 respectfully with the eventual recommended suggestions, a number of policies and measures are not included. This is summarised in Figure 8, which categorises each option as recommended, not recommended or has a question mark where the option needs further research. A short summary for all the recommended policies draw from Sections 7.1, 7.2 and Sections 8.1 to 8.5. Reasons for the policies that are not recommended are drawn from Sections 7.1 and 7.2, and reasons for recommending or otherwise the supporting measures are covered in Sections 8.6 and 8.7.

**Figure 8: Summary of all policies and measures considered for Developer-led community (DLC) projects and community-led projects (CL)**

<table>
<thead>
<tr>
<th>DLC or CL?</th>
<th>Policy/ measure</th>
<th>Include?</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLC</td>
<td>DLC primary policy option 6: Mandate offer investment to community.</td>
<td>✓</td>
<td>If managed appropriately this should result in a significant increase in community ownership of assets, or community investment into projects (if citizens loan money to the project)</td>
</tr>
<tr>
<td>Both</td>
<td>DLC primary policy 1 and CL primary policy 1: capacity auction (wind &gt;6MW and other technologies &gt;1MW) with preferential weighting for DLC/CL projects</td>
<td>X</td>
<td>Preferential weighting is a complicated and potentially inefficient approach which is unlikely to secure as much community investment and ownership of renewables as mandating all projects offer investment.</td>
</tr>
<tr>
<td>Both</td>
<td>DLC primary policy 2 and CL primary policy 2: capacity auction (wind &gt;6MW and other technologies &gt;1MW) ring fencing a portion of the competition to DLC/CL projects</td>
<td>X</td>
<td>As DLC primary policy option 6 is recommended, then a ring-fenced capacity auction for DCL or CL projects is not required. Ring-fencing would likely results in less investment, as there would be less opportunity for investing in a local project.</td>
</tr>
<tr>
<td>Both</td>
<td>DLC primary policy 3 and CL primary policy 3: a capacity auction (wind &gt;6MW and other technologies &gt;1MW) with premium for DLC/CL projects;</td>
<td>X</td>
<td>As with DLC primary policy 1 and CL primary policy 1, a premium uplift is a complicated and potentially inefficient approach which is unlikely to secure as much community investment and ownership of renewables as mandating all projects offer investment.</td>
</tr>
<tr>
<td>Both</td>
<td>DLC primary policy and CL primary policy 5: FIP for &lt;6MW wind and &lt;1MW all other technologies</td>
<td>✓</td>
<td>For smaller projects, FIPs with appropriate cap and floor prices, represent better value for money for the electricity consumer than FITs, and are recommended by the European Commission</td>
</tr>
<tr>
<td>Both</td>
<td>DLC primary policy and CL primary policy 4: FIT for &lt;6MW wind and &lt;1MW all other technologies</td>
<td>X</td>
<td>For smaller projects, FIPs with appropriate cap and floor prices, represent better value for money for the electricity consumer than FITs, and are recommended by the European Commission</td>
</tr>
<tr>
<td>DLC</td>
<td>DLC enabling policy 1: Obligation to gift a proportion of a renewable project to the local community</td>
<td>X</td>
<td>Many legal barriers to this, including defining the members of a community who could claim to be affected by the project</td>
</tr>
<tr>
<td>Both</td>
<td>DLC enabling policy 2 and additional CL enabling policy: allow private wire arrangements</td>
<td>X</td>
<td>Not within the scope of the RESS policy, and very complicated to legally change Electricity Act and other regulations</td>
</tr>
<tr>
<td>Both</td>
<td>DLC enabling policy 3 and additional CL enabling policy: allow virtual private wire agreements</td>
<td>X</td>
<td>Not within the scope of the RESS policy, and very complicated to legally change Electricity Act and other regulations</td>
</tr>
<tr>
<td>CL</td>
<td>CL enabling policy 1: grants for feasibility stages</td>
<td>✓</td>
<td>For many community projects with limited cash resources grants are the only option to explore project development opportunities</td>
</tr>
</tbody>
</table>
**Figure 8: Summary of all policies and measures considered for Developer-led community (DLC) projects and community-led projects (CL) (continued)**

<table>
<thead>
<tr>
<th>DLC or CL?</th>
<th>Policy/ measure</th>
<th>Include?</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td><strong>CL enabling policy 2:</strong> soft loans for development phase</td>
<td>✓</td>
<td>For many community projects with limited cash resources soft loans are the only way to finance the risky development stage</td>
</tr>
<tr>
<td>CL</td>
<td><strong>CL enabling policy 3:</strong> soft loans for construction phase for projects that otherwise could not secure finance</td>
<td>✓</td>
<td>For some smaller community projects that are below the threshold limits for banks to lend to on a project finance basis soft loans may be the only route to secure construction finance, or to bridge a gap until a community share offer can be launched</td>
</tr>
<tr>
<td>CL</td>
<td><strong>CL enabling policy 4:</strong> permitted development rules for community renewables of small capacity</td>
<td>X</td>
<td>Being considered separately by CEPA, but likely to be very complex</td>
</tr>
<tr>
<td>CL</td>
<td><strong>CL enabling policy 5:</strong> local demand to match local supply</td>
<td>X</td>
<td>Would stop projects in remote areas with very high wind or solar resource proceeding, and could also be viewed as discriminatory</td>
</tr>
<tr>
<td>CL</td>
<td><strong>CL enabling policy 6:</strong> Ring fenced grid access for communities</td>
<td>✓</td>
<td>Worthy of further consideration, which CER is already consulting upon.</td>
</tr>
<tr>
<td>Both</td>
<td>Supporting measure 1: Trusted Intermediary to coordinate support, encourage DLC and CL projects, provide advice and direction, etc.</td>
<td>✓</td>
<td>Recommended as essential to deliver the ambitions of the RESS</td>
</tr>
<tr>
<td>Both</td>
<td>Supporting measure 2: Advisory services being facilitated and directed to by the Trusted Intermediary</td>
<td>✓</td>
<td>Recommended as a way to professionalise community projects</td>
</tr>
<tr>
<td>Both</td>
<td>Supporting measure 3: Mandated community benefit payments</td>
<td>✓, but as guidelines</td>
<td>Recommended, but instead of an obligation make Good Practice Guidelines on community benefit payments, and set up Community Benefit registers</td>
</tr>
<tr>
<td>Both</td>
<td>Supporting measure 4: Tax incentives for citizens to invest in community energy</td>
<td>?</td>
<td>Although promising, further research is needed into the value to the taxpayer of such a measure</td>
</tr>
<tr>
<td>Both</td>
<td>Supporting measure 5: Implementing a regulatory framework for crowdfunding</td>
<td>X</td>
<td>This is an interesting opportunity, especially if community investment opportunities are mandatory for all renewable deals. However, need to await further evidence of the need for crowdfunding</td>
</tr>
<tr>
<td>Both</td>
<td>Supporting measure 5: Supporting green bonds to facilitate community ownership of renewables</td>
<td>X</td>
<td>It is not evident at this time that any moves to incentivise a Green Bond market would increase community ownership in renewable energy or bring about any greater community participation.</td>
</tr>
<tr>
<td>CL</td>
<td>Supporting measure 7: Set up new legal structures to facilitate community renewable projects</td>
<td>X</td>
<td>Existing legal structures, although not perfect, can accommodate community renewables.</td>
</tr>
</tbody>
</table>
8.1 Overarching primary policy - Capacity auctions

As previously mentioned, EU State Aid regulations require that any generating capacity greater than 6MW wind or 1MW other renewables, can receive operating aid, provided it has been applied for in a competitive process, such as a capacity auction\(^60\). For this reason, and those outlined in Section 7, it is proposed that this policy would apply to both developer-led community projects and community-led projects of greater than these sizes.

8.1.1 Designing capacity auction rules

There are four different design elements for an auction which need to be defined (IRENA, 2015):

- **Auction demand.** This is the volume of capacity to be auctioned and the division between different technologies and project sizes. The technologies and plant capacities anticipated to have a proportion of community ownership are outlined in Appendix A (Table 21). However, it is expected that for any short term community ownership of larger projects there will be a need to include some projects that are already in the queue for a grid connection (i.e. the existing wind and solar projects in the grid connection queue) whilst longer term may include projects yet to apply for grid connection. The volume and capacity of the future auctions will be determined by the required outcomes and timelines determined by DCCAE. It is expected that the auctions could be phased to deliver the required installed capacity to meet Ireland’s carbon reduction targets by 2020, however there may be further consideration of the delays in securing a grid connection which will influence the timeline.

- **Qualification requirements.** The auction rules will need to include technical and financial qualification requirements which might include details of site selection, evidence of planning consent and grid connection offer. Additional socio-economic qualification requirements may be applied. Evidence for each of these will be required as part of the application audit process.

- **Winner selection process.** Clear transparent rules are needed for how bids are selected. This will include details of bidding procedures, minimum requirements for bidding, and in the context of this work, may take account of other criteria in relation to community participation.

- **Duties and liabilities for successful bidders.** There will need to be clear rules for building renewable assets in time, and penalties for under-performance. This could be designed to include the developer’s responsibilities to the community, including community investors and engagement with the wider community.

Therefore, a developer-led community project or a community-led project would be required to comply with qualification criteria with necessary evidence provided to and checked by the auctioneer. The project will then submit a bid, which will be assessed against the winning bid criteria. This might be a sealed bid, whereby each bidder submits their bid as a €/MWh or could be a dynamic bid, whereby the auctioneer sets a price and bidders offer the volume of electricity (MWh) they are willing to offer at that price. Following completion of the auction, a contract is agreed with the bidder and a counterparty. This then commits the bidder to the seller’s liabilities to build the project within a particular timeframe.

8.1.2 Policy in practice

DCCAE will design and implement the appropriate auction mechanism with consideration for community ownership from the findings of this study feeding into the design. Further detail on the capacity auction mechanism is covered in the parallel DCCAE study Economic Analysis to Underpin a New Renewable Electricity Support Scheme in Ireland.

\(^60\) From the State Aid Energy and Environmental State aid Guidelines – Frequently asked questions: "From 1 January 2017, operating aid to renewable energy will in principle be granted in a competitive bidding process. [...] some exceptions from this general rule are possible. This is the case where Member States can demonstrate that a bidding process would lead to an unsatisfactory outcome - e.g. because only one or a very limited number of projects or sites would be eligible; or because a competitive bidding process would lead to higher support levels (for example due to strategic bidding) or would result in low project realisation rates.". In this study we have not assessed the number, capacity and technology of projects being developed, but have assumed there will be sufficient number of eligible projects to deliver a high realisation rate.
In our assessment of auction policies in Section 7, we considered three different auctions, with different qualification requirements and winner selection criteria. Whilst the ring-fenced auction scored highest in the MCA, it must be considered in line with other primary policies. This is discussed further in 8.2.

8.1.3 Key benefits and risks of capacity auctions

The two main benefits are:

- **Greater transparency in selecting the most cost effective projects.** Correctly designed, the auction will identify the true levelised cost of electricity, assuming there is sufficient competition in the auction. This addresses the fundamental problem of a lack of transparency for policy makers on the true costs of building renewable projects (particularly as grid connection costs can be very variable). For in governments setting a FIT or FIP either the FIT or FIP will be set too high (and result in too much uptake and a too costly PSO) or too low (and result in no or very little uptake). This is compounded by the fact that as the renewable market is evolving so quickly (e.g. witness the rapid reduction in solar panel prices) knowing where to set tariffs becomes even more complicated, especially as mature technologies in Ireland start taking off, particularly for solar.

- **Policy maker control.** As well as being better value for money a capacity auction allows the Government to control the new renewable energy capacity, thereby ensuring that the 2020 targets for energy supplied from renewable sources are met. It also enables the Government to determine the level of community ownership of renewables.

However, there are a number of risks, including:

- **Risks of insufficient competition to deliver value for money or the required capacity.** The level of competition in the auction is influenced by the volume auctioned and the number of projects at an appropriate stage of development. As there is a large capacity of commercial projects in the development pipeline in Ireland, once they have met the qualification requirements, it is expected that it will be possible to auction larger volumes in an auction, thus increasing competition. Ring-fencing segments of the auction for developer-led community or community-led projects could result in insufficient competition and gaming (where parties can price their offers based on market scarcity value).

- **High transaction costs of bidding.** In an auction process, depending upon the detail of the auction mechanism (e.g. sealed bid, iterative bidding) there can be relatively high transaction costs for both policy makers and developers when compared to a FIP or FIT. This is particularly the case if lots of requirements are needed to even be able to enter the auction (e.g. a grid connection and planning permission) as it could well be that the project is not selected. FITs or FIPs remove this risk as developers know that if they can secure grid connection and planning then if their project is located in an area of high resource (e.g. windy or sunny sites) they will be able to be built. Whilst large commercial developers who may be submitting bids for five or six projects can often pay for the bidding costs, with a community that is only planning to deliver one project the risks are further increased. This on/ off decision could lead to much fewer numbers of community-led and smaller developer-led community projects bidding.

- **Potential non realization.** If a project is successful in a capacity auction there will often be penalties for failing to build in time. Renewable projects can experience delays for numerous reasons. This may be exacerbated if there are community investors in the decision making process. Similarly, overly aggressive bidding in the competitive environment of the auction can be traced to a variety of factors, from excessive optimism about the evolution of technology costs to the underestimation of financial consequences in case of project delays.

Lessons from other jurisdictions, for example Brazil, show that this can be mitigated by targeting capacity greater than the required capacity. High realization rates can be ensured by securing bid bond guarantees, which should be set at an appropriate level so they do not discourage bidders, but secure a commitment to build out the project if successful during the auction. Penalties can be applied for failure to implement. Whether guarantees or penalties are implemented will be part of the auction design, determined by DCCAE.
8.1.4 Policy monitoring and control

A capacity auction offers a significant level of control for the policy maker and the transparency in the auction process allows careful monitoring. There are various means through which community ownership can be introduced via a capacity auction, as have been explored in section 7. The preferred approach to ensuring this is discussed in the subsequent sections.

Settlement rules around seller’s liabilities are an important element of auction design primarily because of concern about perverse incentives that might reward developers for systematically over (or under) estimating their generation expectations.

They will also need to quantify liabilities for delays, reduced installed capacity, contract duration and other liabilities not specifically related to community ownership.

Capacity auctions are becoming more and more widespread in many other jurisdictions across the EU and beyond. Auction mechanisms vary, from iterative bidding in Brazil and sealed bids in California to the outcome of the auction being similar to the proposed policy here whereby the auction determines the level of FIP, as in the Netherlands.

8.2 Developer-led community primary policy – Mandated option for community investment into projects

Section 7.1.1 outlined the reasons that this policy is being recommended. This policy would require all new developer-led community projects under the RESS to offer the local community (including individual citizens) an opportunity to invest in some minimum share of the project or some other beneficial interest in the project. Developers would have to properly market the offer, and the offers would need to be reviewed by the Government or Trusted Intermediary to make sure that the terms being offered were appropriate. Sufficient time for investors to decide whether to invest would be required, and then if the developer was unable to find a sufficient number of investors it would need to evidence this to the Government or Trusted Intermediary. Provided these steps are taken, the developer’s project would be eligible to receive RESS support (even if ultimately no community support is secured).

The different options for securing community investment into renewable projects in Ireland are outlined in this section. Examples of similar policies in Scotland (Scottish Government Good Practice Principles for Shared Ownership) and Denmark (mandate for community share offer) can be found in Sections 4.4 and 4.2.

8.2.1 Policy design

The Danish example is a useful reference as it outlines the criteria that should be considered when setting such a policy in Ireland:

- What generators should the policy apply to?
- What proportion of the project should be made available for community ownership?
- Who should the offer be made available to?
- What type of investment option?
- How should this investment be offered?

There have already been recommendations as to how such a policy could be applied in Ireland (Tipperary Energy Agency, 2016). One recommended mechanism for implementation was through a planning requirement. An alternative approach to achieve a meaningful level of community ownership of projects, which would also include projects that may already have planning permission, is that all projects that wish to avail themselves of support through the RESS should be mandated to offer an investment opportunity to community investors. This second route would mean that even projects which have planning would need to offer some of the investment to communities.
It is anticipated that there will be a minimum project size in terms of capital investment above which this requirement should apply; offering investment opportunities for a small 90kW wind turbine a farmer is developing would not be proportionate to the marketing effort involved, which could cost €30k or more.

It is also anticipated that there will be some project types which may not be appropriate for a community investment policy, for example where a generator is proposed for an existing business process or premises (e.g. a biomass CHP plant at a sawmill, or an AD plant at a farm).

It is therefore recommended that once the RESS support levels are determined, the minimum threshold for projects to offer investment should be determined. This policy has been implemented successfully in Denmark for all new wind projects greater than 25 metres in height. There, a minimum 20% equity stake in the project is offered to the community, initially to those within 4.5km of the scheme. The 20% equity stake, or other beneficial interest, is proposed here as the target for the stake that should be offered to communities in Ireland. The distance from the project to offer the investment opportunity to will depend on population density and would need to be determined for the Irish case.

Evidence from Denmark shows that the ownership structure of wind farms can vary. The legislated model adopted in Denmark is for a project co-operative to be established. Shares in the co-operative are then offered to the community. In practice most developers develop a number of wind farms and offer 100% community ownership to one of the wind farms or to a number of turbines in the wind farm. This split ownership model simplifies the arrangements between the developer and the community, whilst allowing the community to benefit from shared operations and maintenance agreements. This variation in ownership structure is also evident in projects in Scotland, with the different shared ownership structures outlined in section 5.2.3 being agreed for different projects. This flexibility is important as it allows developers the flexibility to determine the most appropriate shared ownership structure for their own financing arrangements.

However, for the reasons explained in Sections 6.2.1.1 and 7.1.1 it is recommended that the obligation to offer investments should not be restricted to only equity investments, or shares of net revenues, but also to lower risk loan notes (without voting rights) that would have seniority of payment before equity investors. However, without voting rights the Government would not be able to count loan note investments within their community ownership targets.

One of the roles of the TI as outlined in section 8.6.1, would be to facilitate the appropriate shared ownership model for each project. Appropriate guidelines and rules governing each of the ownership structures will need to be developed.

It is important that transparent rules are developed for the process of making the investment opportunity available to communities. This should be developed further with consultation from relevant stakeholders. This includes when communities are notified of the opportunity, which should initially be at the planning stages. It is not expected that this would be a full investment memorandum, but should indicate the likely scale of investment opportunity. It is recommended as part of this study, that this should form part of any good practice community consultation guidelines that are developed. The investment memorandum should then be made available in suitable time to allow communities to consider the investment.

It is proposed that the investment offer is phased as follows until the target level of investment is secured:

- Initially to those within a geographic distance from the generator;
- More widely to those in the district electoral division (DED);
- Further to neighbouring DEDs.
As previously mentioned the developer is not mandated to secure a particular level of investment from the community, but must make the required effort to secure investment. When a generator lies near a DED boundary, or a village, or city, it is recommended that all citizens within a single residential area should be considered equally. The application of the proposed rules for this would be monitored by the TI, which is discussed further below. It is proposed that these rules would require the potential investment offer to be outlined during the pre-planning stage of the project, thereby allowing the citizens to consider this within the consultation process. For those projects that have already received planning consent, further consultation with citizens and promotion of the investment offer would therefore be required in order for the generator to be eligible to participate in the auction.

For offshore wind, the model adopted by Denmark is that the windfarm is determined to lie within the municipality that has a coastline closest to that of the nearest turbine to shore. The same approach is recommended here, so all within the DED closest to the windfarm will be offered the opportunity to invest first, followed by those in neighbouring DEDs.

Consideration was given to whether extending these share offers beyond the county level would enable wider ownership. However, as the widely recognised definition of community as detailed in section 5.2 includes a geographic element this is not recommended. Nevertheless, legal advice is recommended.

Until policy rules are formulated it is difficult to estimate exactly how much community investment there will be, but if 8GW of new renewable capacity is targeted then even if many offers do not reach 20% share ownership, or 20% of the capital costs in the case where loan products are offered, the involvement by citizens in renewable energy will increase.

8.2.2 Key benefits and risks

The main benefit of such a scheme is it would open up a very large investment opportunity for communities in Ireland to directly invest in renewable energy schemes. With appropriate supporting measures in place (see section 8.4) the level of community ownership can be appropriately incentivised with the greatest level of control, thus reducing risk.

However, there are a number of risks with this approach, notably:

- The developer has to have sufficient finance for 100% of the project available, even though the local community may invest some. In particular, when bidding for capacity auctions the bidder will be bidding not knowing if they will have to finance 100% of the project or say 80% of the project;
- In less sparsely populated areas the opportunity may need to be launched initially at DED level or even at county level which could take extra time. This could incentivise the development of projects closer to residential areas and so areas of electrical demand. This places a responsibility on the developer to work closely with the TI to identify potential investors. To maximise uptake minimum investment could be kept to a €50 threshold for citizens, although higher than €50 for community organisations;
- To make a minimum €50 investment threshold viable may require the implementation of a system to reduce the resulting administration burden and transactional costs. A single share in a Danish windfarm can range from DKK 3,000 – 4,000 (€400 - €550). Further research and consultation to determine an appropriate threshold is recommended.
- Having minority shareholders in commercially developed projects, or even in projects owned by one farmer and other members of the community requires formal shareholder meetings to be held, and can raise many unintended consequences;
- The illiquidity of the investment for equity sales could put off investors;
- The costs of marketing the project appropriately and making sure offers fully explain to investors all the risks of losing money will be considerable. This will increase the development costs of the project. Even though the development of relevant guidance, standardised processes, template investment memorandum and support from the TI will help reduce these costs there will still be duties not to mislead investors. Expert financial advisers will be needed.
This may have an impact on the levelised cost of electricity. Whether the impact is negative or positive will depend on the offering. It all depends on whether the developer can secure community investment at lower rates of return than it can, so whether the developer is able to itself target a 10% return, but sell shares at inflated prices so community shareholders may only be able to target a 7% return;

- The operating costs of projects will also rise as there will be a need to prepare audited accounts, reports to shareholders, distribute returns to possibly hundreds of investors, arrange shareholder meetings, resolve shareholder disagreements, set up informal markets to trade shares from investors that need to realise their investment, etc. This is explained further in Box 2

- There will inevitably be accusations that citizens are being offered poor terms by commercial investors. Therefore, there may a role for the TI or a corporate finance adviser to advise whether the terms being offered are off market. Loan note investments would be much easier to benchmark, and would reduce gaming opportunities, for example the introduction of excessive management charges on the project by the developer.

- The resource (e.g. wind/ solar/ hydro/ biomass) in one DED may not be high reducing the possibility of securing investment locally and encouraging citizens to invest in other DEDs.

Box 2: Weighing up the costs of community equity investment into developer-led projects

<table>
<thead>
<tr>
<th>Development costs (£s)</th>
<th>No community investment</th>
<th>Equity</th>
<th>Loan notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Preparation of investment memorandum to the public</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Review of investment memorandum by legal and financial advisers</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Marketing costs to public</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Administrative costs – answering questions, recording all investors, etc.</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating costs (£s)</th>
<th>? – depends on deal size and Irish requirements</th>
<th>✓ - likely to be needed to reassure investors</th>
<th>? - depends on the size of the deal and Irish requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Auditing of accounts</td>
<td>?</td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td>- Administering payments to wider investors (equity or loan notes)</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Administrative costs – answering questions from wider investors, etc.</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Setting up informal trading mechanisms for investors to redeem their contributions earlier</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Arranging and publicising Annual General Meeting</td>
<td>✓ but light touch and procedural</td>
<td>✓ Significant</td>
<td>✓ - For developer light touch and procedural X for community</td>
</tr>
</tbody>
</table>

8.2.3 Policy in practice

The detail of how the policy will work in practice will to some degree be determined by the structure of the shared ownership arrangements. It is expected there will be a limited number of these structures, primarily joint ventures and split ownership. The TI will have a key role to play in this process and we discuss this in more detail in Section 8.6.1.
It is proposed that the developer will engage with the community at an early stage of project development, likely to be as part of the planning process. Guidance will be available on the shared ownership arrangements via the TI. This guidance will include how and when the investment offer should be made available to the community, including the timetable for publicising the investment, how long to keep the investment offer open and how to determine who to make the offer to.

8.2.4 Policy monitoring and control

The TI should be made responsible for monitoring pre-investment activities ensuring that all sales material that has been prepared by the developers of renewable energy projects adheres to the developed guidelines and includes details on:

i. The organisations relevant constitutional documents;

ii. Information about the project – i.e. the name, size and location of the project, the type of technology and capacity including a construction and operating budget;

iii. The development status of the project – e.g. the date the planning application was submitted, whether the project was approved, grid connection status and where appropriate, an anticipated commissioning date or actual commissioning date;

iv. Project financing by the developer;

v. The extent of liability per share;

vi. The number and the price of the ownership shares offered for sale; and

vii. Time limits and conditions for submitting purchase offers.

The promotional material should be accompanied by an accredited accountant report declaring that the project fulfills a set of predetermined conditions (e.g. offer for sale at least 20% of the ownership shares to eligible persons); that the extent of the liability per share has been specified; that the price of the ownership shares has been determined; and that the information concerning financial matters is otherwise true and fair.

An audit process is required to ensure that the policy requirements are being adhered to by all stakeholders including developers, citizens and community groups. The audit process should include a sample of projects to ensure that all stakeholders are adhering to the requirements of the policy throughout the project lifetime. As mentioned there may also be a role to make sure that developers are not deliberately gaming the system (e.g. introducing spurious management charges).

It is recommended that the developer should have available information about engagement with the community to share with the TI on request e.g. How did the developer engage in consultation with the community? What approaches were consulted upon? Were there any community groups local to the project and if so, were they involved in the consultation? What was the outcome of the consultation?

Should the approach of offering the option to invest to the local community, DED and neighbouring DEDs not be sufficient to secure the target levels of community ownership, extending the option to invest nationally could be considered.
8.3 Developer-led and community-led primary policy - Feed in Premium

As previously highlighted, State Aid rules require that support for any wind project greater than 6MW or other renewable technology greater than 1MW must use a capacity auction. For projects below this scale a FIP is recommended, but consideration must be given to the following:

- The technologies which it is appropriate to support. Some renewable technologies are still expensive in Ireland compared to lower cost renewable technologies such as onshore wind. The parallel analysis by CEPA on technology costs should support a decision on which technologies are to be included or whether technology specific FIPs are practical;
- The minimum size of project it is appropriate to support. The costs €/MW of small-scale projects will be higher than those of larger projects. Therefore, in the interest of ensuring value for money for consumers, minimum project sizes should be applied. Again, the parallel analysis by CEPA should inform the setting of this threshold.
- The minimum community share of a developer-led community project – in order to be eligible for the FIP, it is suggested that developer-led community projects offer a minimum level of community ownership. As outlined in Section 8.3, the minimum level to be offered will be determined by the level of FIP available, but a target 20% is recommended. The definition of ‘community’ here will be crucial in ensuring that investment in the project is indeed coming from a group that can meaningfully be classified as a community, especially if projects only cost €100,000 to develop.

8.3.1 Policy design

A FIP can either be a fixed premium or floating premium. With a fixed premium a fixed amount is added to market electricity prices with a cap and floor price in place to control the level of premium support. A floating premium varies with changing market prices, in order to limit both the price risks for generators and the risks of providing windfall profits at the same time.

A detailed analysis completed as part of the CEPA study has identified the most cost effective design of the FIP would be a floating premium, this confirms the assessment completed as part of this study and it is therefore the recommended type of FIP. Floating premiums are dynamic, similar to the UK contracts for difference and depend on the level of the electricity price. In this way, community-led or developer-led community projects are not exposed to the overall risk of the electricity market price, rather they can rely on a fixed total revenue price (e.g. 7cents/kWh which at the start of the project may be made up of 5cents/kWh from electricity prices and 2 cents/kWh from the floating FIP, but later on if electricity prices rise to 6 cents/kWh the FIP will fall to 1 cent/kWh). In the case of a floating premium, the electricity consumer has to bear higher risks regarding the policy costs, since they depend on the development of the electricity market price, but if electricity prices are projected to rise they will end up being cheaper than FITs or fixed price FIPs. A floating premium would be the best manner in which to reduce price volatility and maintain investor/financier confidence in the small scale distributed generation sector.

The fixed FIP provides less certainty for the community investor (developer-led community projects or community-led) as it provides less predictability regarding the final price received as the generator is subject to the market price fluctuations. A premium with a cap and floor price can also provide a degree of predictability, but there is evidence from other jurisdictions that such a scheme can be complex to interpret which may be a barrier to community projects (Ecofys, 2014). Such a scheme does however control the costs of the policy if designed correctly.
8.3.2 Policy in practice

In other jurisdictions FIPs are managed by an independent regulatory body which is responsible for setting the premium level against which the floating premium is calculated. Premium levels can be set by auction or based on the levelised cost of electricity. To reduce the complexity to the developer of these smaller capacity projects, it is recommended that the levelised cost of electricity model be adopted.

Determination of the floating premium depends upon the reference value. Electricity prices can be averaged over a long time horizon (e.g. monthly) or over a short time horizon (e.g. hourly). It is proposed here that the market price is calculated monthly, so the premium is determined on a monthly basis. Adopting the model implemented in Germany, the average market price is then adjusted by technology specific factors. For example, for wind and solar PV the premiums that these technologies receive are different even accounting for the difference in levelised cost of electricity. There is an interesting interplay between wind and solar electricity prices. Solar energy is generated in the day time when demand tends to be low, and also in the summer again when demand is lower. Wind can happen at any time of the day, and unlike solar it tends to be windier in the winter. However, offsetting the stochastic element, when it is windy in one part of Ireland it will tend to be windy in other places meaning if there are many wind farms then electricity prices will tend to be dampened.

With FIPs, eligible generators (either community-led or developer-led community) would be required to sell their electricity to a licenced supplier, with the feed in premium being paid by a third party. In the case of “supplier lite” arrangements the licensed supplier is indirectly controlled by the generator, and processes the premium payments directly. In Ireland and other jurisdictions the level of a FIT and/or FIP is generally adjudicated by the energy regulator.

Further consultation by DCCAE is suggested to determine the appropriate third party for this role, which would involve monitoring market prices to determine FIPs transparently.

8.3.3 Key benefits and risks

In general, premium schemes have a measureable impact on renewable generation and capacity, and can be designed to achieve a wide range of policy goals (NREL, 2010). Effectiveness in terms of market uptake varies depending on whether premiums are fixed or floating, and, in the latter case, how often the premium is adjusted (hourly, monthly, yearly) and whether there is a cap and floor price (EU, 2013).

The floating premium is proposed with monthly adjustment, however it is recommended that further analysis based on market prices and levelised cost of electricity is completed to confirm this is the least cost solution and that the proposed third party who will manage payments will have access to the relevant information required to determine the appropriate levels.

There is a fundamental tension in all support schemes and a range of benefits and risks depending on how the FIP system is configured. From an investor’s point of view support schemes as well as investment revenues need to be predictable and stable. This applies whether the project is developer-led community project or community-led. From a policy maker’s perspective, support schemes need to provide flexibility to adapt to changing circumstances, such as a large uptake or drops in capital costs. Thus, support schemes require some flexibility measures to be able to react to changing circumstances but in a predictable way without causing investors unnecessary insecurity (Ecofys, 2014).
Some key benefits of this FIPs suggestion include:

- **The encouragement of generation.** For renewable generation that can be modulated (e.g. hydro-projects powered by dams or biogas) premium schemes can incentivize generation of electricity in times of high demand and high market prices, and discourage feeding electricity into the grid during periods of low demand and high electricity supply. Premium schemes oblige renewable energy producers to find a seller for their production on the market and make sure that market signals reach the renewable energy operators through varying degrees of market exposure. (EU, 2013). This is not something that will be within the control of a community-led project or a developer-led project, but it can be signalled by the prices offered by the market to the generators through the PPA prices, ultimately resulting in a more efficient electricity market (with the exception of supplier-lite where the PPA price is self-determined).

- **Guaranteed revenue streams.** Unlike capacity auctions, where there is no certainty that a development will receive RESS support unless successful in an auction, there is less developer risk with a FIP. This will be particularly important for community-led projects, as communities are often more risk averse than commercial developers.

The risks include:

- **Market exposure.** The market orientation of premium schemes involves higher development risk for community-led and developer-led community projects. To incentivise community-led projects, it is possible that this risk may need to be shared with the public sector, if the development of the project is initially funded by the public sector through the grants and loans enabling policy detailed in Section 8.4.

- **Increased risk without a purchase guarantee.** Community investors will see a risk if there is not a purchase guarantee scheme in place, so the proposed FIP scheme could include a purchase guarantee. If not, those participating in the FIP will sell their electricity on the spot market and receive the corresponding market price, with an added premium. (NREL, 2010)

- **Capacity threshold risk.** As there is a potential limit on the capacity of projects that would be eligible for FIP, if the FIP tariff is sufficiently attractive, it may lead some developers to opt for a capacity of turbine that aligns with the FIP banding thresholds rather than with the optimal size for a location.

- **Significant uptake risk.** High levels of uptake could lead to overspending. Adequate measures for monitoring and controlling uptake can be used to mitigate this risk (as proposed in 8.3.4).

- **Off-taker risk:** The PPA counterparty appetite to contract with small renewable generators in the context of the ongoing changes to the Integrated Single Electricity Market and the RESS will be a key factor for the success of any support scheme.

### 8.3.4 Policy monitoring and control

Any RESS should be adaptable to learning effects, which will be prevalent in Ireland in technologies such as solar PV, with limited deployment to date. Changes in capital costs, land access, operating costs and costs of finance will all impact on the generator revenues and so the level of uptake of the FIP. These will also influence the levelised cost of electricity and so the FIP levels, so these will need to be updated.

Support levels can be adapted in different ways, e.g. according to predefined and fixed degression rates. Another possibility is to decrease tariffs in line with the additionally installed capacity during a certain time period. A third option is that tariffs can be adapted after a periodic review to enable reaction to unexpected developments. For this option to be functional, policy makers must have knowledge of actual cost levels. This third option ensures that the level of support provided is set in line with the development of the market, rather than limits to control deployment rates or policy costs, so is the recommended option for monitoring.
Whatever mechanism is implemented, degression levels should be clear and transparent and any changes consulted upon. This is essential to prevent over compensation and so address potential public concerns of the policy, whilst maintaining certainty for developers in a future market. It should be recognised that disruptive or unexpected cost reductions cannot be anticipated, so additional time bound reviews of FIP levels should be included.

An important consideration when developing any FIP is the length of time the FIP will apply. This should be set at a length projects tend to secure debt for. The rationale is that if debt tends to be for 12-15 years, even if the asset is expected to last for 20 or 25 years, then having a FIP will guarantee loan repayments and result in lower interest rates from lenders. Stopping the FIP at year 15, so that generators only receive the wholesale price at that time, makes economic sense as from that point on usually all net cash flows directly to the equity investors.

8.4 Community-led enabling policy – Grants and soft loans

As summarised in Section 6.2.2.2, these enabling policies are to provide communities with the risk capital that is required to get the projects through the initial high risk development stages of a project, from the feasibility stage, through the development stage and even possibly through the construction phase. It was highlighted during the stakeholder engagement and recognised internationally that the lack of project development capital was a barrier to community-led projects being developed, so it is recommended that grants and loans are made available to communities to develop their projects.

It is anticipated that the administration of these funds would be completed by the TI (see section 8.6.1) as this has been successful in other jurisdictions.

It is proposed that the funding that would be available to the communities to support the development of their projects would be split across a mix of grants and loans. To date the level of REFIT payments have not been sufficient for communities to risk investing in the development of renewable energy projects, even though there may have been a good local resource. Support to date has focussed on the most bankable, well sited projects.

However, because some of the communities within the working community definition in Section 5.2 tend to have very little capital, if community-led projects are to be encouraged they need to have ways to access capital to support the development and construction of community-led projects.

8.4.1 Policy design

The proposed features of Government grants and loans for community-led projects are presented in Table 19. Grants are proposed for the early high risk development stages of the project. Once a potentially viable project has been identified, the provision of loans for the community are proposed that would allow the project to be taken through the initial development stages, such as securing planning consent, securing land agreement and making a grid application.

### Table 19: Key features of grants and loans to community-led projects

<table>
<thead>
<tr>
<th>Project development grants</th>
<th>Project development and construction loans</th>
</tr>
</thead>
</table>

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61 It is recognised that Government grants or loans would need the approval of the Department of Public Expenditure and Reform and/or Department of Finance
Further detail on the activities that it is proposed could be funded by the grants and loans are outlined in the following section. This includes conditions that would be appropriate for loans for construction costs to be made available to community-led projects.

8.4.1.1 Grants

The grant is designed to start the community group on the process of developing a renewable project. It would provide communities with capital for completing crucial early stage activities that would not otherwise be funded:

- Start-up costs towards forming a constituted group to take forward a renewable energy project;
- Feasibility studies;
- Community consultation;
- Community capacity building;
- The development of community investment plans;
- Learning journey to visit other community renewable projects;
- Support for investigating shared ownership projects with developer-led community projects.

The suggested size of the grant has been determined to cover a number of the activities listed above. As detailed in section 8.4.1.2, the TI will have a role to play in supporting the community to determine which of these activities are the most appropriate for the community, this will require an understanding of the development process of a renewable project, the formation of community groups legally and socially and some local knowledge of the key stakeholders in the area.

8.4.1.2 Development Soft Loans

The development soft loan provided by a State backed third party is proposed to cover all reasonable costs associated with developing a project to financial close, i.e. when the finance for the capital construction stage is finalised and agreed with a lender. It does not include the capital construction costs.

It is expected that projects must have a reasonable chance of success, so there will be a requirement to complete some initial due diligence based on the feasibility study. A set of criteria should be developed to evaluate the likely success of the project, including an assessment of the economic...
viability, taking account of the fact this is at an early stage in the project development, so there will be a level of uncertainty in the assessment. As explained, the loan would be staged and payments drawn down upon completion of key milestones, which would again be verified by the TI. This would help to minimise the amount of abortive expenditure.

Costs covered by the loan could include:

- Environmental Impact Assessment costs;
- Legal fees;
- Project management fees;
- Grid connection deposits;
- Planning fees;
- Community engagement;
- Financial services; and
- Land agent fees.

The initial stages of the development of the project, would be provided with a write-off facility. Should there be any insurmountable barrier identified during development, the project would cease and the loan written off. However, once the project has proven viability, then any additional funding would not have the write-off facility. At that point it is expected the project would have:

- An accepted grid connection offer;
- Planning permission;
- A signed lease or legally binding heads of terms with the land owner; and
- A developed financial model confirming financial viability.

There may still be development activities required to support the project through to financial close, but as the project is now investment ready, the project takes the risk. Throughout the development process, it is suggested that the TI will be completing ongoing due diligence to confirm the viability of the project. It is estimated that the cost of these development activities could be up to €250,000.

**8.4.1.3 Construction soft loan**

A State backed construction loan is recommended for community-led projects that have addressed the key project development risks and are able to move to construction, yet for valid reasons have not been able to secure commercial finance. Typical requirements that a commercial lender will expect to see from a developer looking to secure a loan for a renewable project are:

- Detailed evidence of all previous development activities;
- A strong business case outlining the strategy to finalise development and construction of the project;
- Project construction schedule;
- Details of key project partners and commercial arrangement with them;
- Details of security available; and
- Evidence of appropriate experience in the team delivering the project.

With appropriate support from a Trusted Advisor, community-led projects will be able to provide evidence of the above. As a commercial lender may view the level of investment risk associated with the final two points (lack of security for the loan and lack of experience within the community in developing a renewable project even though reputable EPC contractors will be used) too high this may be a reason to allow a State backed loan, for without such a loan the market would prevent community-led projects from progressing. For example, as there is no current market demand for project finance (i.e. not asset backed) for community-led projects in Ireland, it is not evident that there are commercially available financial products.

In addition, for smaller scale projects, such as those that are likely to be community-led, the transaction costs (e.g. due diligence fees) for the project will potentially be too high for a commercial lender to
consider for such a small transaction (<€2,000,000). This again highlights the need for State intervention, but one which would require very tight control and due diligence to minimise defaults. There will also need to be State Aid legal guidance as to whether soft loans would constitute state aid if RESS support tariffs are also claimed.

There is a risk associated with issuing State backed loans on a project finance basis where there is no security. In other international jurisdictions in Scotland and Wales, this is a risk that the State backed lenders have been willing to take, subject to appropriate levels of scrutiny on the project viability and community governance.

As the funding for this will come from central government, an assessment of the impact on public finances will be required. If the provision of construction finance is considered too high risk or not value for money, an alternative option is to provide a bridging loan, so that once community-led renewable projects are operational they can be refinanced, using cheaper commercial debt. Loans to cover initial construction works whilst community share offers are received is another opportunity. The soft finance would not be at preferential interest rates, in actual fact it may need to be at high rates commensurate with the risks, but it would finance funding for small scale projects (i.e. not asset backed) over the short term which is rarely available from commercial lenders.

8.4.1.4 Investment option soft loan

A final product that could deliver additional community investment is a loan to community groups to invest in developer-led community projects. If mandating an investment option is made available for all renewable projects, additional financial support is likely to be required to ensure enough community investment is available.

If selected this loan should be match funded to some degree, to ensure commitment from the community and the level of match funding, will depend on who the community actor is, whether it is a community group, a municipality or other eligible organisation. This allows those who may not have the resources available to invest directly in the project, to still be able to benefit from community investment in the project.

This would only be made available to those community organisations who are appropriately constituted to ensure that any profits from the investment are for the benefit of the community and not directly for any individual member of a community organisation.

Recognising that having a Government body lending money to individuals to invest in renewables will carry many risks, it is recommended that this is given further consideration.

8.4.2 Key benefit and risks

The benefits of grants and soft loans include:

- **The essential need for grants and soft-loans (at least for the bulk of the development phase) for some community-led ventures.** While some forms of community ownership within the working definition suggested in Section 5.2.2 (e.g. farmers, local SMEs or local authorities) may be able to access feasibility and development stage capital, for communities in the traditional sense of like-minded individuals wanting to develop a renewable energy project to allow the local community to share some of the benefits of local electricity generation, there are rarely any other sources of capital available. Therefore, not having grants and development phase loans is a barrier for this section of society meaningfully engaging in the energy transition. Consideration was given to whether the FIP could be set at a high enough level to derisk the investment in development of community-led projects, but this is not an appropriate mechanism for mitigating project development risks.

- **Single source of lending available to the community.** Having a single source of lending through the development process ensures that the TI will have a detailed understanding of the
development of the project and where the risks in the project are and so will be able to provide an informed view. This de-risks the highest risk stage in the development of the project.

Unless properly managed there are also many risks including:

- **Potential write off of loans.** Many projects that receive feasibility grants and then proceed to the development phase will fail with planning permission or for other reasons. Therefore, the cost of this will be met by the Irish taxpayer. However, if increased community buy in to wind projects results in fewer planning application refusals the default rate should fall. Therefore, to reduce complaints of misallocation of monies, a tight stage gating of loans will reduce abortive costs.

  Linked to the default risk, as communities will not be providing security there will be few (if any) avenues the State could use to reclaim money. However, if the project fails due to poor management by the community, or reduced enthusiasm to proceed the State could possibly offer the project to other developers as a way to recoup some lost monies.

- **Development delays caused by the funding application process.** It is recognised internationally that community led projects can take longer to develop; one of the reasons for this is the grant funding process can add significant delays to development as does the use of volunteer input and community group board meetings to sign off on applications. This risk can be mitigated by ensuring a clear and transparent application process, with relevant guidance and support. Note that any grant/loan program needs to take account of the capacity within a volunteer organisation.

- **Grant support leads to sector inefficiencies.** Automatic funding of feasibility studies may reduce early stage natural site screening using common sense at minimal cost. Unnecessary studies being completed, or biased outcomes, can result in projects in sub-optimal locations. To mitigate this, it is essential that the TI has an active role to play in awarding grants and loans and monitoring projects.

- **Overlapping with other funding programs.** Careful consideration of interaction with other funding programs - current and future - is required such as LEADER, Better Energy Communities or the Sustainable Energy Community networks. Creating a complex and confusing funding landscape across different agencies could be a barrier to communities taking projects forward or may result in duplicate funding to projects.

### 8.4.3 Policy in practice

The CARES program is Scotland and the Local Energy program in Wales are both managed by third parties on behalf of their respective administrations, assessing applications for grants and loans by communities. The third party also plays the role of TI in these jurisdictions. There are benefits in having an independent third party monitoring the provision of funding across the different stages of project development as it allows greater control and monitoring of state funding, so it is recommended that such an approach is adopted in Ireland.

Communities would apply to this third party and a review of the application against predetermined criteria would be carried out. A selection of the criteria are listed for the different stages of funding.

#### Development grants

- Are the governance structures within the applicant organisation stringent?
- Has there been some form of local consultation?
- Are there any immediately apparent environmental, technical, planning or resource constraints?

#### Development loans
• Have any additional constraints been identified during feasibility?
• Is the project financially viable?
• Has a heads of terms been reached with the landowner?
• Is the applicant organisation constituted correctly to secure a loan?
• Is the loan being used to fund activities being completed by an experienced and appropriately skilled trusted advisor (see section 8.6.2)?

**Construction loans**

• Has the applicant evidenced why other financing routes are not possible?
• Has appropriate due diligence been completed?
• Is the project economically viable?
• Has planning consent/ grid access/ turbine supply/ land agreement been reached?

These key questions will start to identify whether government funding should be used to fund the next stage of development in the project. It is recommended that a more comprehensive list of evaluation questions would be developed and the CARES program and Local Energy program engaged to provide input to these questions.

### 8.4.4 Policy monitoring and control

As previously mentioned the success of this policy is determined by the number of successful projects, when compared to the amount of loan and grant that is written off. This will be affected by the level of scrutiny of the project by the TI.

Appropriate monitoring of project spend, performance and development risk will reduce the potential write off. Using experienced Technical Advisers to support the project, who have already been screened before engaging with the community, will again mitigate risk.

The level of risk associated with a community-led project will be higher than a conventional commercially developed project, however the public sector backing of the project may reduce some of the usual development risks, such as planning objections, and securing land agreements.

As the funding for this policy may be provided by central government, further consideration needs to be given as to whether this is the most effective use of public sector funding. Whilst loans are being provided, there will be a level of write off, which needs to be considered against other public sector investment decisions. Also, any Government grants or loans would need to approval of the Department of Public Expenditure and Reform and/or Department of Finance.

### 8.5 Community-led enabling policy – Grid access

It has already been highlighted that for a community-led project to be developed, like any other project, it will need to have timely access to grid. This is unlikely to be possible in the short to medium term without some change to the rules governing access to grid and wider grid upgrade. For any change to be made to the process for securing grid access, there would need to be a clear case that it is in the public interest, something that can be argued for community-led projects and there is precedent for with non-wind or wind below 500kW projects in Ireland through a non-GPA process as outlined in Section 7.2.2.

There is ongoing work with CER aimed at identifying a solution that would allow community-led projects timely access to grid. It is expected that this recommendation would sit within a wider grid upgrade scheme which also ensures that community-specific connection barriers are addressed.

Securing alternative grid connection arrangements for developer-led community projects was discussed in the stakeholder workshop, however as the public interest case is not as strong it is not expected that there will be any changes to the grid processing rules to allow this.
8.6 Supporting measures recommended

The following supporting measures are recommended for implementation as part of the model for supporting community ownership and participation in renewable energy.

8.6.1 Trusted Intermediary

It has been highlighted that the role of the Trusted Intermediary (TI) is essential to facilitating increased community ownership and participation in renewable energy. The TI has a role to play in the delivery of government policy to support community investment and participation in renewables:

i. **Promoting the role of communities in renewable energy across the sector**: educating and engaging members of the community to support the development of the energy citizen through working with agencies such as SEAI, DCCAE, Local Energy Agencies, Development Agencies, Local Authorities, planners and schools.

ii. **Facilitate developer-led community projects**: the TI will facilitate the communication between developers and communities, developing good practice principles for:
   - Community engagement
   - Community benefit
   - Mandating options for investment

The TI will also manage and monitor the option for the mandated option for investment process outlined in section 8.2 and the community benefit payments outlined in section 8.6.3.

iii. **Support community-led projects**: the TI will support communities by awarding grants and loans, develop good practice, help communities and then support with the procurement of technical, commercial and legal support. The TI’s role will therefore be to ensure the appropriate use of the grants and loans to give value for money to the taxpayer.

The role of the TI would support communities developing and investing in projects but also communities who are entering into discussions with developers regarding community benefits (but who have no investment stake in the project).

There may be some agencies that are already in place that could deliver elements of this support and there are distinct advantages in having this coordinated by a single organisation with representation across the country, which may include members of other agencies operating under the umbrella of the TI.

In terms of starting to kick-start community investment in Ireland it is likely that encouraging developers who already have grid applications and/or planning committee approval to engage with communities will be the quickest once the RESS has been finalised. Therefore, the scope and objectives of the TI will need to be determined to support its launch.

8.6.2 Trusted advisory support

To facilitate the support of the TI, it is suggested that the TI would be responsible for setting up a framework of Trusted Advisers (TA) that communities could contract for support, whether that be financial advisory support for investment in a developer-led community project or technical support for the development of a community-led project. The type of support provided by the TA is detailed in Section 7.3.2. It is expected that a TA would have experience of working in renewable development to ensure value for money for tax payers funding this and the community as well.

As the grant or loan will be awarded to the community, they will be liable for any terms of the grant or loan, so it is essential that the community is responsible for making any final decisions on how the grant...
or loan is used. However, it is anticipated that the community will benefit from some support and guidance on the scope of support that they require and how to procure that support.

TAs will be screened prior to joining the framework and their ongoing performance on the framework will be monitored by the TI. In particular, whilst there is already 2.5GW of installed wind capacity across Ireland solar is less prevalent. Therefore, the TI needs to have the skills to appropriately direct communities to solar experts in this rapidly changing market.

Working for a community group requires a different skill set and degree of flexibility than working for a commercial developer, which needs to be considered during the selection of TAs. Communities will have less experience of the commercial arrangements for contracting TAs, so again the TI will provide support. This will require the TI to have a comprehensive understanding of the scope of work being completed by the TA and the commercial terms under which the work is completed.

8.6.3 Community benefit good practice principles

Community benefit is detailed in section 7.3.3. Whilst it has no impact on the level of community ownership of renewables, it is widely considered essential to ensuring wider community gain from the local development of renewable projects that extends beyond those who have invested in the project. It is therefore recommended that community benefit payments be made by all renewable projects, whether developer-led or community-led. This ensures wider community benefits from the local renewable energy project, not just to those investing in the project.

Mandating community benefit is not considered to be required, if the following is implemented:

- Clear sector-wide Good Practice Principles are drafted regarding how community benefit should be managed and a suggested level of community benefit payment. This will require input from a wide range of stakeholders, with the level of community benefit likely to differ between technologies.
- The TI is responsible for oversight of community benefit payments and manages a community benefits register set up so there is transparency over the community benefit payments made.
- There is scope for organisations to manage community benefits on behalf of renewable developers in the best interest of the community, such as the South & East Cork Areas Development partnership, who currently manage the ESB Community Windfarm Fund62.
- The TI supports communities who are entering into discussions with developers regarding community benefits (but who have no investment stake in the project).

It is evident from community benefit payments in Scotland that mandating payments is not required as outlined in Table 17. Average community benefit payments in Scotland exceed £6,000/MW/ annum, although the recommended good practice in Scotland is £5,000/MW/year. By mandating a level of payment, this will be the level of payment made. However, by incentivising payments through good practice guides and a community benefits register, higher payments may be made by developers to secure the support of the community.

There are clear benefits of community benefit payments in improving perception of renewables, overcoming objections to new projects and supporting the local community and they should be made by all renewable projects. An output based payment at €2/MWh would be equivalent to a fixed annual payment in line with that recommended by Scottish Government in Scotland. This figure was assumed in the modelling completed by CEPA in the accompanying RESS study. As an output based payment rather than a capacity based payment, it is subject to annual fluctuation linked to fluctuating annual generation, which can make long term planning for communities receiving the community benefit more

62 http://www.windfarmcommunityfunds.ie/
difficult. However, this reduces the level of risk to the developer who is not paying out a fixed annual payment regardless of the amount of generation.

Nevertheless, when considering this measure the Government will need to balance the additional costs it will impose on the electricity consumer against the benefits to local communities with energy efficiency schemes, schemes to alleviate fuel poverty, educational projects or whatever else community benefit payments are used for.

8.6.4 Tax incentives

Given the historical success of tax incentives in Ireland, and internationally, for raising capital for renewables projects, it is recommended that this is reviewed in detail by a financial advisory body. Tax incentives for investing in developer-led and community-led projects would represent an additional incentive for citizens living in their locale to invest.

Whether this is a cost effective means of incentivising investment requires further research, for a tax break will mean that the Government will need to raise tax from other sources.

8.7 Supporting measures not recommended

The following additional supporting measures were considered, but at this stage in the development of community ownership of renewables were not thought to require any additional policy support.

8.7.1.1 Green Bonds

There are many different permutations for Green Bonds that may bring about an increase in community ownership of renewables that have been developed by the private sector in other countries. A Green Bond market is likely to develop within the private sector if the conditions are right to support renewable projects generally.

It is not evident at this time that any moves to incentivise a Green Bond market would increase community ownership in renewable energy or bring about any greater community participation. Bonds require sufficient scale to be feasible and the market is not yet sufficiently developed.

8.7.1.2 Regulation of crowd funding

Crowd funding offers a cost effective mechanism for projects that are mandated to offer an investment option to communities. The ability to publicise an investment offering though a single portal that also allows potential investors a mechanism for securing the investment has the potential to be a useful platform. It provides a mechanism for ensuring that investment options are properly marketed in line with the rules set out in section 8.2.

However, until there are more examples of community-led projects attempting to raise finance for renewable projects, the case that regulation of crowd funding is a prerequisite for investment in community renewable energy projects cannot be made. International experience has shown that there have been many millions of Euros raised to finance renewable projects through crowd funding. However, there is not the evidence base in Ireland of:

a) Communities struggling to raise finance through traditional means;

b) The costs of raising finance from conventional lenders being prohibitive.

There is a need generally and expectation that crowd funding activities will ultimately be regulated by the Central Bank, however there is no evidence at this stage that this is specifically required for the renewable energy sector.
8.7.1.3 Legal structures

Although no specific social enterprise structures exist in Ireland, there are structures in place that can and have been utilised for the development of community owned renewable projects that benefit the wider community. It is recommended that a watching brief is maintained to determine whether structures such as community interest companies or community benefit societies, as found in other jurisdictions, are required.

8.8 Conclusion

This study concludes that there are a number of policy options, with additional supporting measures, that will be required to deliver an increase in community ownership and participation in renewable energy. Some of these are intrinsically linked to the wider RESS and so can be implemented with the policy changes that are made as part of the RESS.

Aligned to EU State Aid rules the primary policy for capacity auctions for projects greater than 6MW capacity (wind) or 1MW capacity (other renewable technologies) provides an opportunity to set qualification requirements which could deliver the greatest level of community ownership through a mandate that projects should make an investment opportunity in the renewable project available to communities. As a qualification requirement for the capacity auction, it is not expected that there would need to be any additional legislative changes required to enable the policy. Developers would then need to prove that they have actively sought citizen investment in their project.

For projects under 6MW (wind) or 1MW capacity (other renewable technologies) it was determined that a FIP would be the most appropriate form of support. It is recognised that there are additional costs associated with community ownership in these projects, whether developer-led community structures or community-led projects and this is recognised in the viability gap analysis completed by CEPA as part of the corresponding study on the RESS.

For community-led projects, additional enabling policies will be required to support their development. Timely access to grid is a barrier to community-led projects, so changes are required if community-led projects are to be developed in the short term, part of ongoing discussions with CER and DCCAE.

For many community ventures with limited cash resources or security to offer, the community will benefit greatly from grants for early feasibility work. However, local authorities, public bodies, farmers and some SMEs may be able to provide risk capital for some or all of this. Similarly, given the difficulty in accessing development stage capital, communities are likely to need access to soft loans that can be written off if the project does not proceed.

Community-led projects will also require technical, legal and financial support if they are to be successful. This will require Technical Advisers (TAs) providing assistance to support communities’ needs through all the stages of developing a project, from concept formation, to constituting the community entity, to environmental assessments, grid applications, resolving conflict, planning application, negotiating with contractors and then building and operating the project. This will also require funding for community-led projects.

Therefore, a Trusted Intermediary (TI) is recommended that will be Government funded. The TI will perform a number of roles including:

- Acting as a champion for community energy, increasing community participation in renewables, educating communities in the requirements for a strong renewable sector in Ireland, and nationally promoting the benefits of renewables and community ownership of renewables (e.g. security of supply and decarbonised electricity);
- Acting as an independent broker between developer and community;
- Offering grants and loans, and then importantly managing loan dispersals and repayments to minimise any abortive expenditure if projects for whatever reason cannot proceed (e.g. a failed planning application);
- Provide guidance and support to communities in the use of their grants and loans, including how to secure TA support.

It is recommended that all future renewable projects are only given RESS support if the developer has actively sought investment from the community, whether that be offering shares in the project or offering loan notes or other financial opportunities. The TI would also need to work with developers, suppliers, landowners and regulators to ensure the rules governing the qualification criteria for capacity auctions or FIPs are understood.

An additional supporting measure to secure investment through tax incentives requires further analysis to determine how this would most effectively be implemented. Current tax incentives have been successful and if further investment across all renewable projects is expected, detailed consideration of the tax implications is required.

If realised, all the recommendations could make Ireland an exemplar in community renewable energy participation. Now across all the proposed policies and measures, wider stakeholder consultation with the sector, public and private sector organisations, regulators and the public is essential. In summary, the White Paper sets out ambitions for a range of measures, which would be addressed by the recommended policies and measures outlined in this study. These are presented in Table 20.

Table 20: White Paper ambitions and recommended policies and measures to support these ambitions.

<table>
<thead>
<tr>
<th>White Paper Ambition</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working with energy agencies, community experts and local government to ensure that information is provided to citizens in a timely and accessible manner</td>
<td>This is the role of the Trusted Intermediary, as outlined in Section 8.6.1.</td>
</tr>
<tr>
<td>Supporting community participation in renewable energy and energy efficiency projects, via Sustainable Energy Authority of Ireland (SEAI), to share best practice, provide information and ensure that local strategies align with broader Government policy</td>
<td>Again, this is the role of the TI, acting as the facilitator between communities and developers and working with SEAI to develop best practice and promote community participation in renewable energy. SEAI currently delivers on the energy efficiency commitment through the Better Energy Communities and Sustainable Energy Communities programmes</td>
</tr>
<tr>
<td>Facilitating access to the national grid for designated renewable electricity projects, and developing mechanisms to allow communities to avail of payment for electricity, such as the ability to participate in power purchase agreements;</td>
<td>Access to grid for community led projects is identified as a key barrier and further work is required to facilitate this as outlined in section 8.5.</td>
</tr>
<tr>
<td>Providing funding and supports for community-led projects in the initial stages of development, planning and construction</td>
<td>Access to development capital is identified as a key barrier for community led projects. Grants and soft loans should be provided, and TA support made available. Section 8.4 details how this can be addressed.</td>
</tr>
<tr>
<td>Developing a framework for how communities can share in the benefits of substantial new energy infrastructure which is located in their area</td>
<td>The main policy recommendation of mandating an offer to invest will facilitate this ambition, along with good practice principles on community benefits.</td>
</tr>
<tr>
<td>Establishing a register of community benefits payments</td>
<td>In addition to the recommended development of good practice principles for community benefit, the TI will play a role in managing and promoting the community benefits register</td>
</tr>
</tbody>
</table>
Examining shared-ownership opportunities for renewable energy projects in local communities

- The main policy recommendation of mandating an offer to invest will facilitate this ambition with the TI acting as facilitator between communities and developers, implementing rules governing shared ownership as proposed in Section 8.2.

Ensuring that grid connection policy will have due regard to current and future renewable energy policy, including in relation to community renewable energy projects

- Access to grid for community led projects is identified as a key barrier and further work is required to facilitate this as outlined in Section 8.5.

Supporting, in particular, the emerging energy co-operative movement as one means of facilitating community participation

- The Sustainable Energy Communities programme addresses this ambition, with the TI and the TA roles outlined in this study providing further support to the development of co-operative movement.
Assessment of models to support community ownership of renewable energy in Ireland

Appendices

Appendix A - CEPA Technology bands and discount rates
Appendix B - List of stakeholders
Appendix C - Interview questionnaire
Appendix D - Workshop content
Appendix E - State Aid
Appendix F - International models for community energy
Appendix G - Definitions of community
Appendix H - Recommendations by Irish community energy stakeholders
Appendix I - Stakeholder policy design considerations
Appendix J - Stakeholder developer-led community policy options
Appendix K - Stakeholder community-led policy options
Appendix L - Management of community benefit
Appendix M - Bibliography
Appendix A  CEPA Technology bands and discount rates

This appendix outlines the community assumptions on costs and discount rates calculated by Ricardo for inclusion in the Cambridge Economic Policy Associates (CEPA) Levelised Cost of Electricity (LCOE) model. The LCOE model is built up from four main inputs, being the project costs (development + construction costs), operating costs, discount rates and asset life assumptions. There are different assumptions for different technologies, and some technologies also have different assumptions for varying capacity (MW) sizes.

The technologies and capacities for community-led and developer-led community projects were determined by CEPA, with input from a steering committee chaired by DCCAE, with the splits shown in Table 21.

Table 21: Compartmentalisation of archetypes between community and developer-led community projects

<table>
<thead>
<tr>
<th>Technology</th>
<th>Community-led projects (with developer investment)</th>
<th>Developer-led community projects, with community ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD CHP</td>
<td>Small (100kW) Large (1MW)</td>
<td>Small (100kW) Large (1MW)</td>
</tr>
<tr>
<td>Biogas</td>
<td>One size (500kW)</td>
<td>One size (500kW)</td>
</tr>
<tr>
<td>Biomass CHP</td>
<td>Small (1MW)</td>
<td>Small (1MW) Large (25MW)</td>
</tr>
<tr>
<td>Hydro</td>
<td>Micro (50kW) Small (1MW)</td>
<td>Micro (50kW) Small (1MW) Large (20MW)</td>
</tr>
<tr>
<td>Solar PV*</td>
<td>Commercial scale (250kW) Medium (1MW) Large (5MW)</td>
<td>Commercial scale (250kW) Medium (1MW) Large (5MW)</td>
</tr>
<tr>
<td>Waste to energy</td>
<td>N/A</td>
<td>Large (25MW)</td>
</tr>
<tr>
<td>Wind onshore</td>
<td>Micro (20kW) Small (500kW) Medium (5MW)</td>
<td>Medium (5MW) Large (20MW)</td>
</tr>
<tr>
<td>Wind - offshore</td>
<td>n/a</td>
<td>One size (250MW)</td>
</tr>
</tbody>
</table>

As can be seen, the biggest community-led projects are assumed to be up to 5MW. Whilst it is possible that there may be some community-led projects with a higher capacity than this, the next banding in the CEPA model is 20MW, of which it is expected there will be few community-led projects.

CEPA amalgamated the development and construction costs into one project cost figure, but made the following assumptions as to the split between the two costs – see Table 22 below.
Table 22: CEPA assumptions for development costs as a percentage of total project cost

<table>
<thead>
<tr>
<th>Technology</th>
<th>Scale description</th>
<th>Typical plant capacity (kWe)</th>
<th>Development cost as % of total project cost 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV</td>
<td>Large</td>
<td>5,000</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>1,000</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>Commercial rooftop</td>
<td>250</td>
<td>2%</td>
</tr>
<tr>
<td>Wind</td>
<td>Large onshore</td>
<td>20,000</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Medium onshore</td>
<td>5,000</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>Small onshore</td>
<td>500</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Micro onshore</td>
<td>20</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>Large offshore</td>
<td>250,000</td>
<td></td>
</tr>
<tr>
<td>Bioenergy</td>
<td>Large biomass CHP</td>
<td>25,000</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>Small biomass CHP</td>
<td>1,000</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>Large AD CHP</td>
<td>1,000</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>Small AD CHP</td>
<td>100</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>Biogas/ biomethane</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Hydro</td>
<td>Large hydro</td>
<td>20,000</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>Small hydro</td>
<td>1,000</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>Micro-hydro</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Waste-to Energy</td>
<td>Large</td>
<td>25,000</td>
<td>5%</td>
</tr>
</tbody>
</table>

For community-led and developer-led community projects the following two assumptions were made:

- For community-led (with light blue shading) increase each total project cost number by 75% x development costs, on the basis that there are some early learning costs, and also some additional costs of doing community share raises and securing community finance. For example, if a 100% developer owned medium solar PV is €1,000/kW, then the community cost of developing solar would work out at €1,000/kW + (75% x 12% x €1,000/kW) = €1,090/kW.
- For developer-led community projects increase each total project cost number by 37.5% x development costs, on the basis that there are some additional costs of securing finance from communities. For example, if a 100% developer owned medium solar PV is €1,000/kW, then the developer-led community cost would be €1,000/kW + (75% x 12% x €1,000/kW) = €1,045/kW.

The IEA-RETD reports concluded that for community projects development costs were about 33% higher, and capital costs were similar (for the scale of project) (IEA-RETD, 2016). The assumption development costs are 75% higher for community-led projects was made due to learning effects, and the effort involved in securing a sufficient number of community investors, especially as Irish community ownership of renewables is still in its early stages.

Because of the costs of raising community finance, we suggest an uplift of half the 75% (37.5%) to development costs for the developer-led community projects.
The second input to the CEPA model for community renewables was changed to the assumed discount rates. Four assumptions were made:

- For smaller to mid-scale developer-led community projects the Weighted Average Cost of Capital (WACC) should match the WACC for the small to medium Commercial & Industrial projects banding that CEPA determined\(^{63}\).
- For large-scale developer-led community projects the WACC should match utility scale WACCs. This is because communities and developers should get the same returns from the projects.
- For smaller (<5MW) community-led projects that are feedstock dependant (e.g. AD projects) they will be riskier and communities are less likely to want to invest in them, so the corresponding Commercial & Industrial rate should be used. However, for the simple sub c. 5MW technologies of solar, wind and hydro a 10% equity return is assumed for wind, and 8% for hydro and solar. These are hurdle rates for investment by commercial developers in the UK. This is driven by the assumption that the maximum amount of money that a community can raise through a community share offer will be about €3 million, so if the project were to cost €8 million then with a 70% debt: 30% equity ratio €2.4 million will need to be raised with a community share offer.
- For community-led projects greater than 5MW the WACCs should be the same as the respective Utility or C&I project as community share offers will become harder, so equity may need to be offered at the equivalent rates commercial developers seek.

Table 23 shows the discount rates for community-led and developer-led community projects that are included in the CEPA model.

Table 23: Assumptions for discount rates for different scales (MW capacity) and key technologies

<table>
<thead>
<tr>
<th>Technology</th>
<th>Investor and Ricardo labelling of size</th>
<th>CEPA 2017 numbers</th>
<th>Community-led projects real pre-tax IRR (%) (effective discount rate)</th>
<th>Developer-led community projects real pre-tax IRR (%) (effective discount rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gearing</td>
<td>Real cost of debt (%)</td>
<td>Real cost of pre-tax equity (%)</td>
<td>Real pre-tax IRR (%) i.e. effective discount rate</td>
</tr>
<tr>
<td>AD CHP</td>
<td>C&amp;I (&lt;1MW)</td>
<td>62.5%</td>
<td>3.87%</td>
<td>13.90%</td>
</tr>
<tr>
<td>Hydro</td>
<td>C&amp;I (1MW of less)</td>
<td>65%</td>
<td>3.87%</td>
<td>12.41%</td>
</tr>
<tr>
<td>Hydro</td>
<td>Utility (20MW)</td>
<td>65%</td>
<td>2.37%</td>
<td>10.91%</td>
</tr>
<tr>
<td>Solar PV</td>
<td>C&amp;I (1MW or less)</td>
<td>57.5%</td>
<td>3.87%</td>
<td>12.95%</td>
</tr>
<tr>
<td>Solar PV</td>
<td>Utility (5MW+)</td>
<td>57.5%</td>
<td>2.37%</td>
<td>11.45%</td>
</tr>
<tr>
<td>Wind</td>
<td>C&amp;I (500kW and 5MW)</td>
<td>72.5%</td>
<td>3.87%</td>
<td>14.66%</td>
</tr>
</tbody>
</table>

\(^{63}\) The full definition of commercial and industrial projects can be found in the accompanying CEPA report.
| Wind Utility (20MW) | 72.5% | 2.37% | 13.16% | 5.34% | N/A | Same = 5.34% |
Appendix B  List of stakeholders

22 stakeholders across ten different sectors were interviewed by our project team. Interviews were carried out over the phone between 22nd December 2016 and 30th January 2017, and were approximately one hour in duration. Although 22 stakeholders is a limited sample size, stakeholders were strategically selected to cover all key sectors including academics, financers, electricity suppliers, developers, equipment suppliers and technical consultants to include experienced and influential professionals with a strong understanding of the energy sector in Ireland. As such, we have gathered leading views and ideas on the topic. The views of stakeholder have been anonymised in this report.

Each interview was guided by a short questionnaire focusing discussion on the challenges, risks and solutions relating to developer-led community projects and community-led renewable energy projects, whilst emphasising sections of the questionnaire which best aligned with the stakeholder’s area of expertise. Stakeholders were also asked to provide their view on the definition of community in the context of renewable energy projects (Appendix C).

Table 24: Stakeholder Interviewed

<table>
<thead>
<tr>
<th>Group</th>
<th>Organisation</th>
<th>Interviewee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Energy</td>
<td>Templedderry Community Wind</td>
<td>John Fogarty</td>
</tr>
<tr>
<td></td>
<td>Sustainable Clonakilty</td>
<td>Xavier Du Buisson</td>
</tr>
<tr>
<td></td>
<td>Energy Co-operatives Ireland</td>
<td>Cormac Walsh</td>
</tr>
<tr>
<td></td>
<td>Aran Islands Energy Co-op</td>
<td>Dara O Maoldhia</td>
</tr>
<tr>
<td>Energy Associations</td>
<td>Irish Solar Energy Association (ISEA)</td>
<td>Conall Bolger</td>
</tr>
<tr>
<td></td>
<td>Irish Wind Energy Association (IWEA)</td>
<td>Mary Doorly</td>
</tr>
<tr>
<td>Energy Agencies</td>
<td>Tipperary Energy Agency (TEA)</td>
<td>Paul Kenny</td>
</tr>
<tr>
<td></td>
<td>Dublin Energy Agency - Codema</td>
<td>Joe Hayden</td>
</tr>
<tr>
<td>Developers</td>
<td>Enercon Wind Farm Services Ireland Ltd.</td>
<td>Nicholas Lyons</td>
</tr>
<tr>
<td></td>
<td>Gaelectric Bioenergy &amp; Solar</td>
<td>Mike Denny</td>
</tr>
<tr>
<td></td>
<td>Arcogen</td>
<td>Rick McGrath</td>
</tr>
<tr>
<td></td>
<td>Natural Forces</td>
<td>John Brereton</td>
</tr>
<tr>
<td>Financial</td>
<td>Bridge &amp; York</td>
<td>George Delaney</td>
</tr>
<tr>
<td></td>
<td>Clann Credo</td>
<td>Paul O’Sullivan</td>
</tr>
<tr>
<td></td>
<td>AIB</td>
<td>Luis Duran</td>
</tr>
<tr>
<td>Grid Connection</td>
<td>Mullan Grid</td>
<td>Rory Mullan</td>
</tr>
<tr>
<td>Electricity Buyer</td>
<td>Energia</td>
<td>Cormac Mannion</td>
</tr>
<tr>
<td>Academic</td>
<td>Joseph Curtin</td>
<td>Joseph Curtin</td>
</tr>
<tr>
<td></td>
<td>CUBS</td>
<td>Dr Celine McInerney</td>
</tr>
<tr>
<td>Government</td>
<td>Western Development Commission (WDC)</td>
<td>Helen McHenry</td>
</tr>
<tr>
<td></td>
<td>NESC</td>
<td>Dr Jeanne Moore</td>
</tr>
<tr>
<td>Planning</td>
<td>Fehily Timoney</td>
<td>Jim Hughes</td>
</tr>
</tbody>
</table>

Note that a total of 27 stakeholders were contacted; a success rate of approximately 80%.

Ref: Ricardo/ED62960/Issue Number 1
Appendix C  Interview questionnaire

**Understanding/ definition of community renewable energy projects**

How would you define a community, when thinking about community renewable energy? What are the key characteristics?

**Community development of renewable energy projects**

What are the benefits of community development of renewable energy projects? What are the risks?

What are the top five barriers to community development of renewable projects?

**Shared ownership of renewable energy projects**

What are the benefits of shared ownership renewable energy projects? What are the risks?

What are the top five barriers to community shared ownership of renewable projects?

**Incentivising of community developed renewable energy projects**

How could community development of renewable energy projects be incentivised?

How could community shared ownership of renewable energy projects be incentivised?

If community developed renewables were incentivised, do you think that should be in the same way (i.e. same instrument) that all non-community developed renewables are incentivised?

**Community benefit payments**

What are the impacts of community benefit payments?

Who should receive community benefit payments?

Who should manage community benefit payments?

Would community benefit increase public acceptance of renewable development?

**Financing community renewable energy projects**

What are the barriers to financing community developed projects?

What are the barriers to financing community shared ownership projects?

How can these barriers be addressed?

What additional financing costs might there be for community projects?

**Questions for DSOs**

What specific barriers are there for community projects accessing the grid?

What barriers are there for communities to supply directly to consumers?

How could access to grid be modified to accommodate community projects?
<table>
<thead>
<tr>
<th>Questions for planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>What preferential treatment could community owned/ developed projects be granted?</td>
</tr>
<tr>
<td>Questions for equipment suppliers</td>
</tr>
<tr>
<td>What preferential terms could you offer community developments?</td>
</tr>
<tr>
<td>Questions for PPA off takers</td>
</tr>
<tr>
<td>What preferential terms could be offered to communities?</td>
</tr>
<tr>
<td>What role could aggregating community owned projects take?</td>
</tr>
<tr>
<td>How could consumers be facilitated to purchase power directly from community generators</td>
</tr>
<tr>
<td>Final questions/ wrap up</td>
</tr>
<tr>
<td>Would you be able to attend a workshop at the end of January?</td>
</tr>
<tr>
<td>Is any other information that we should take into consideration?</td>
</tr>
</tbody>
</table>
Appendix D  Workshop content

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Led by</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:30 – 10:00</td>
<td>Registration &amp; Coffee</td>
<td></td>
</tr>
<tr>
<td>10:00 – 10:15</td>
<td>Introduction and overview of project &amp; RESS analysis</td>
<td>Paul Ahern - DCCAE</td>
</tr>
<tr>
<td>10:15 – 10:30</td>
<td>Project progress and overview of community models assessed</td>
<td>Ricardo Energy &amp; Environment (Simon Morris)</td>
</tr>
<tr>
<td>10:30 – 10:45</td>
<td>Discussion</td>
<td>SEAI, DCCAE and Ricardo Facilitators</td>
</tr>
<tr>
<td>10:45 – 11:45</td>
<td>Breakout group session 1: Barriers</td>
<td>SEAI, DCCAE and Ricardo Facilitators</td>
</tr>
<tr>
<td>11:45 – 12:00</td>
<td>Coffee</td>
<td></td>
</tr>
<tr>
<td>12:00 – 13:00</td>
<td>Breakout group session 2: Solutions</td>
<td>SEAI, DCCAE and Ricardo Facilitators</td>
</tr>
</tbody>
</table>

The primary focus of the workshop was to build upon and verify the policy options identified through the literature review and stakeholder interviews.

During group exercises, the facilitator guided the delegates through the assessment of the key challenges identified (focusing separately on community-led and developer-led community projects) and facilitated discussion on policy options to address the challenges. Outputs from these discussions were recorded and used to inform task 3 (see Section 2).

Challenges discussed

- What impact does this challenge have on shared-ownership renewable energy projects?
- How is this challenge linked to current policies or regulations (or lack of policies or regulations)? And in which sectors?
- How will the significance of this challenge change over time?
- How could this challenge be overcome?

Policy option discussion questions

- Advantages of each policy option. Which barriers would it address?
- What are the associated risks with each policy option?
- What are the likely impacts on commercial developers?
- What are the likely impacts on other stakeholders (excluding community)?
Appendix E  State Aid

The European Commission’s State Aid regulation approach is designed to prevent government funding from causing unfair competitive advantages within a given market. In reviewing policy options for the support of renewable energy deployment, there are a number of routes available that will comply with State Aid legislation, including block exemptions and a full notification procedure, which is known as an individual exemption.

General Block Exemption Regulations (GBERs) No.651/2014\(^6\) provide a list of specific conditions under which Member States may support various activities without being required to complete the full notification procedure. Provided the block exemption conditions are met, the programme manager may simply notify the Commission via a retrospective transparency notice.

If it is not possible to comply with all the conditions of a block exemption, the government must apply for an individual exemption using the full notification procedure which can take at least 3-6 months.

The first step in reviewing State Aid compliance is to determine whether State Aid is present. To achieve this there are 4 questions that must be answered:

1. Is the assistance granted by the state or through state resources?
2. Does the assistance give an advantage to one of more undertakings over others?
3. Does the assistance distort of have the potential to distort competition?
4. Does the assistance affect trade between Member States?

If the answer to all 4 questions is ‘yes’ then the planned support constitutes State Aid and the regulations therefore apply.

For the purposes of this work, there are five key State Aid routes that we have indicated as relevant to the policy options under consideration:

i. De minimis aid
ii. Article 25 Aid for research and development projects
iii. Article 41 Investment aid for the promotion of electricity from renewable sources
iv. Article 42 Operating aid for the promotion of electricity from renewable sources
v. Article 43 Operating aid for the promotion of electricity from renewable sources in small scale installations

The following section describes each of these routes in more detail, although the exact application of the regulations would need to be examined in more detail prior to implementation of each specific policy option. This is primarily due to the influence that the regulations may have on the detailed design of the policy implementation mechanism.

i. De minimis

The \textit{de minimis} exemption permits aid of up to EUR 200,000 to an individual undertaking (from all sources) in any rolling three-year fiscal period. If the potential recipient is receiving any other \textit{de minimis} aid from another source, they must declare this. It is the recipient’s responsibility to ensure that they do not breach the EUR 200,000 ceiling, and \textit{not} the funder’s responsibility.

\(^6\) \url{http://ec.europa.eu/competition/state_aid/legislation/block.html}
ii. Article 25: Aid for research and development projects

Article 25 (2(d)) allows funding awards up to EUR 7.5 million to cover up to 50% of the costs of feasibility activities. This can be uplifted by 10% for medium-sized enterprises, and by 20% for small enterprises.

iii. Article 41: Investment aid for the promotion of electricity from renewable sources

Article 41 allows funding awards up to EUR 15 million for new renewable energy installations, with an aid intensity of 35-45% of eligible costs (depending on the type of installation). This can be uplifted by 10% for medium-sized enterprises, by 20% for small enterprises, by 15% for projects located in Assisted Area (a), and by 5% for projects located in Assisted Area (c). Further to this, under Article 41(10), the aid intensity may be set by the funder subject the support mechanism being a competitive process.

The assisted areas are shown in the following map:


iv. Article 42: Operating aid for the promotion of electricity from renewable sources

Article 42 allows funding awards up to EUR 150 million for generators of renewable electricity, provided the aid is applied for in a competitive process (the limit is the combined budget of all schemes being funded under a single support mechanism). This competitive process can be limited to specific technologies, which requires an additional submission to the European Commission. Such aid cannot be granted for more than 5% of the planned new electricity capacity from renewable energy sources per year in total. Aid shall only be granted until the plant generating the electricity from renewable sources has been fully depreciated.
Any investment aid previously received must be deducted from the operating aid, so a plant that has received capital funding for construction cannot receive operating aid without accounting for the capital aid (either by repaying the capital aid, or by deducting this amount from the operating aid).

There are specific provisions for small electricity producers:

- Aid of up to EUR 15 million per project may be granted in the absence of a competitive bidding process to installations with an installed electricity capacity of less than 1 MW for the production of electricity from all renewable sources except for wind energy; and
- For wind energy, aid up to EUR 15 million per project may be granted in the absence of a competitive bidding process to installations with an installed electricity capacity of less than 6 MW or to installations with less than 6 generation units.

There are further restrictions on the amount of aid per unit of energy and rate of return when aid is granted in the absence of a competitive bidding process, which only apply to installations with an installed electricity capacity of more than 500 kW or for wind energy, a capacity of more than 3 MW or to installations with more than 3 generation units.

The aid per unit of energy shall not exceed the difference between the total levelised costs of producing energy from the renewable source in question and the market price of the form of energy concerned. The levelised costs shall be updated regularly and at least every year.

The maximum rate of return used in the levelised cost calculation shall not exceed the relevant swap rate plus a premium of 1.00%. The relevant swap rate shall be the swap rate of the currency in which the aid is granted for a maturity that reflects the depreciation period of the installations supported.

v. Article 43: Operating aid for the promotion of electricity from renewable sources in small scale installations

Article 43 allows funding awards up to EUR 15 million for small scale generators of renewable electricity with an installed capacity of less than 500 kW for the production of energy from all renewable sources except for wind energy, for which aid shall be granted to installations with an installed capacity of less than 3 MW or with less than 3 generation units, and for biofuels, with an installed capacity of less than 50 000 tonnes/year.

For the purpose of calculating those maximum capacities, small scale installations with a common connection point to the electricity grid are considered as one installation. Aid shall only be granted until the plant generating the electricity from renewable sources has been fully depreciated. Any investment aid previously received must be deducted from the operating aid, so a plant that has received capital funding for construction cannot receive operating aid without accounting for the capital aid (either by repaying the capital aid, or by deducting this amount from the operating aid). There are further restrictions on the amount of aid per unit of energy and rate of return.

The aid per unit of energy shall not exceed the difference between the total levelised costs of producing energy from the renewable source in question and the market price of the form of energy concerned. The levelised costs shall be updated regularly and at least every year.

The maximum rate of return used in the levelised cost calculation shall not exceed the relevant swap rate plus a premium of 1.00%. The relevant swap rate shall be the swap rate of the currency in which the aid is granted for a maturity that reflects the depreciation period of the installations supported.

Further information can be found here: [http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2014.187.01.0001.01.ENG](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2014.187.01.0001.01.ENG)
Appendix F  International models for community energy

This Appendix draws heavily on the suite of IEA-RETD reports that Ricardo wrote (IEA-RETD, 2016).

Canada

Description of model

There are a variety of support mechanisms and policies led and funded by Federal, Provincial, Municipal and Regional governments in Canada as well as private (and public-private) entities. Overall, the development of renewable energy projects and community investment in renewables varies significantly between Provinces. Different Provinces have varying support mechanisms for community groups at different stages of a project evolution, e.g. feasibility, development, construction and operation. Support mechanisms include grants, low interest loans, financial incentives, tax rebates and advantageous PPA agreements as well as expert support, contractual templates, etc. Each support mechanism is subject to its own eligibility criteria.

The definition of community varies mainly by region and policy type. Generally, the Canadian definition of community has a wider scope than in the UK, including not only not-for-profit groups and aboriginal communities, but also municipal governments, universities and different forms of shared ownership deals.

Figure 9 summarises many of the support packages available for communities in Canada.

Figure 9: Support available to community projects

<table>
<thead>
<tr>
<th>Type of support</th>
<th>What</th>
<th>Stage of Energy Project: feasibility, development, construction and operation</th>
<th>Community / Beneficiaries</th>
<th>Funder/provider</th>
</tr>
</thead>
</table>
| Grant           | Green Municipal Fund[^67] | ● Feasibility studies  
● Pilot projects  
● Development  
● Construction | Municipal Governments in Canada and their partners’ e.g. not-for-profit companies | Federation of Canadian Municipalities (FCM) through Canadian Government endowment |
| Grant           | Local Government Infrastructure Planning Grant Programme[^69] | ● Community energy scoping/planning | British Columbia | Government of British Columbia |
| Grant           | Bullitt Foundation Grant[^70] | ● Community energy support, e.g. grant provided to Community Energy Association | Not-for-profit organisations in British Columbia | Bullitt Foundation |

[^68]: http://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations/first-nations-clean-energy-business-fund
[^69]: http://www.csod.gov.bc.ca/3qd/infra/infrastructure_grants/infrastructure_planning_grant.htm
[^70]: http://www.bullitt.org/grants/grantmaking-process/
<table>
<thead>
<tr>
<th>Grant</th>
<th>Programme/Description</th>
<th>Activities</th>
<th>Funding Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grant</strong></td>
<td>EcoAction Community Funding Programme[^71]</td>
<td>Development • Construction</td>
<td>Environmental groups • Community groups • Community-based associations • Aboriginal groups</td>
</tr>
<tr>
<td><strong>Grant</strong></td>
<td>Energy Innovation Programme: Clean Energy Innovation[^72]</td>
<td>Development projects • Feasibility studies • Development initiatives</td>
<td>Local and provincial governments • First Nations • Associations • Utilities • Private Companies</td>
</tr>
<tr>
<td><strong>Grant</strong></td>
<td>Innovative Clean Energy (ICE) Fund[^73]</td>
<td>Development of pre-commercialization technologies</td>
<td>Local government • Aboriginal groups in British Columbia</td>
</tr>
<tr>
<td><strong>Grant</strong></td>
<td>Community Energy Leadership Programme[^74]</td>
<td>Development • Construction</td>
<td>Local governments • First Nations governments in British Columbia</td>
</tr>
<tr>
<td><strong>Grant</strong></td>
<td>New Building Canada Fund - Small Communities Fund[^75]</td>
<td>Development • Construction</td>
<td>British Columbia</td>
</tr>
<tr>
<td><strong>Grant</strong></td>
<td>Community Energy &amp; Emissions Planning[^76]</td>
<td>Planning</td>
<td>British Columbian communities with population of under 75,000</td>
</tr>
<tr>
<td><strong>Grant</strong></td>
<td>Alberta Indigenous Solar Programme[^77]</td>
<td>Development • Construction</td>
<td>Aboriginal groups in Alberta</td>
</tr>
<tr>
<td><strong>Grant</strong></td>
<td>ecoENERGY for Renewable Power[^78]</td>
<td>Construction</td>
<td>Energy Cooperatives (large scale)</td>
</tr>
<tr>
<td><strong>Grant</strong></td>
<td>Aboriginal Energy Partnerships Programme[^79]</td>
<td>Feasibility • Development • Construction</td>
<td>Aboriginal Groups in Ontario</td>
</tr>
</tbody>
</table>

[^71]: [https://www.ec.gc.ca/ecoaction/](https://www.ec.gc.ca/ecoaction/)
[^73]: [http://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/innovative-clean-energy-solutions/innovative-clean-energy-ice-fund](http://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/innovative-clean-energy-solutions/innovative-clean-energy-ice-fund)
[^74]: [http://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/community-energy-systems/community-energy-leadership-programme-eligibility](http://www2.gov.bc.ca/gov/content/industry/electricity-alternative-energy/community-energy-systems/community-energy-leadership-programme-eligibility)
[^75]: [http://www2.gov.bc.ca/gov/content/transportation/funding-engagement-permits/funding-grants/small-communities-fund](http://www2.gov.bc.ca/gov/content/transportation/funding-engagement-permits/funding-grants/small-communities-fund)
[^77]: [http://aboriginal.energy.ca/aref-funding](http://aboriginal.energy.ca/aref-funding)
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans</td>
<td>Toronto Sustainable Energy Funds[80]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aboriginal Loan Guarantee Programme[81]</td>
<td></td>
</tr>
<tr>
<td>Financial Incentive</td>
<td>Ontario feed in tariff[82]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community feed in tariff (COMFIT)[83] now ended</td>
<td></td>
</tr>
<tr>
<td>Financial Incentive</td>
<td>Banff Municipal feed in tariff[84]</td>
<td></td>
</tr>
<tr>
<td>Financial Incentive</td>
<td>Alberta Municipal Solar Programme[85]</td>
<td></td>
</tr>
<tr>
<td>PPA agreements</td>
<td>Net Metering Programme[86]</td>
<td></td>
</tr>
<tr>
<td>PPA agreements</td>
<td>Enhanced Net Metering[87]</td>
<td></td>
</tr>
<tr>
<td>General guidance</td>
<td>Community Energy Planning Toolkit[88] and Renewable Energy Guide for Local</td>
<td>Note: this programme was closed to new applicants on August 6, 2015.</td>
</tr>
<tr>
<td></td>
<td>Governments[89]</td>
<td></td>
</tr>
<tr>
<td>Equity Funding</td>
<td>First Nations Clean Energy Business Fund[90]</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- [84] https://www.banff.ca/solar
- [85] http://www.mccac.ca/programmes/AMSP
- [88] http://communityenergy.bc.ca/?dn=download_category-planning
Qualitative/indicative assessment of the public resources and costs required to operate model

The models used to support community energy in Canada are predominately led and funded by federal, provincial, municipal and regional government. However, private entities including private organisations, funds, associations and utility companies also provide support as described below:

i Provincial and federal government support

Provincial and federal government provide joint funding for infrastructure projects in smaller communities, e.g. New Building Canada Fund and Smaller Communities Fund. Provincial and federal governments also direct significant funding for grants predominantly to Aboriginal groups, e.g. the B.C First National Clean Energy Business Fund, Community Energy Leadership Programme in BC which is also available for some non-aboriginal governments, and the Alberta Indigenous Solar Programme.

It has proved difficult to estimate the total amount of Government and Provincial monies distributed to communities, partly because of the wide disparities between monies available in different parts of the country, and also the different degrees of uptake. However, some examples of Federal and Provincial support expenditure include:

i The Government of Canada and Federation of Canadian Municipalities (FCM), through the Green Municipal Fund, provided $31.5 million for 11 sustainable municipal projects as announced in 10/02/2016 (e.g. one of eleven projects was a renewable energy project where a $254,136 grant and $2,541,364 loan was provided to the Halifax Solar City Project). A further $10.3 million was announced on 22/04/2016.

ii The Government of British Columbia, through the First National Clean Energy Business Fund, provides up to $50,000 grants for project feasibility and up to $500,000 grants for project development/ construction. This funding is provided to Aboriginal Groups only.

Support

<table>
<thead>
<tr>
<th>Support</th>
<th>Locally Owned Renewable Energy Projects that are Small Scale (LORESS)</th>
<th>• Operation</th>
<th>Community Renewable Energy in New Brunswick</th>
<th>Government of New Brunswick</th>
</tr>
</thead>
</table>
| Support | Aboriginal Energy Partnerships Programme | • Feasibility  
• Development  
• Construction | Aboriginal Groups in Ontario | Government of Ontario |
| Support | Energy Partnership Programme | • Feasibility  
• Development | Ontario | Government of Ontario | Government of Ontario |

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Some Provincial governments have budgets to support the improvement or development of long-term comprehensive community energy plans like the Local Government Infrastructure Planning Grant Programme in British Columbia, which offers grants up to $10,000. As well as costs to taxpayers, some schemes increase charges to energy customers. For example, Ontario supports feed in tariffs, and until August 2015 Nova Scotia had a Feed in Tariff (COMFIT). The City of Banff (in the province of Alberta) also supports solar PV deployment through a municipal feed in tariff. The Ontario Feed in Tariff is unlike the FIT in the UK, as the FIT in Ontario is a total electricity price the generator receives. With the exception of solar PV, the first round (2009) had support tariffs up to 16 cents/kWh, and these have not changed considerably since then. However, with FIT uptake over this time there have been significant increases in Ontario electricity rates since 2009 - approximately a 12% increase per year.

### Utility company support

Utility companies provide support to community groups. For example, in British Columbia BC Hydro provides grants to support communities with the creation of their own Community Energy Efficiency Plan including identifying energy goals and objectives, assessing current energy policies, forecasting energy demand and supply, and identifying solutions and supporting policy options. BC Hydro also runs a Net Metering Programme which is designed for residential and commercial customers who want to connect a small electricity generating unit to the BC Hydro distribution system. Generating units up to 100 kW in capacity that use a clean or renewable resource are eligible to participate in the programme. BC Hydro have a similar programme for large generators. Nova Scotia Power offers a similar scheme – Enhanced Net Metering. The actual cost to BC Hydro for such schemes is likely to be minimal, if not even a net benefit as it may make it easier for the utility to balance its system.

### Charitable, foundation and association support

There are numerous other charitable funds and foundations, which provide grants and guidance which can be accessed by community energy groups, e.g. Bullitt Foundation and the Community Energy Association in British Columbia which receives money from membership fees, contributions, charitable donations, paid advisory work (e.g. for local governments) and charitable projects. For example, between 2010 and 2016 the Bullitt Foundation provided approximately $630,000 to 14 Canadian based associations and foundations (e.g. Community Energy Association).

### Summary of financial/ commercial structure of projects

Legal entities for community investment include cooperatives, larger community funds with particular tax advantages, and partnerships with the private sector to pool capital to develop renewable energy projects. As explained, it is also common for local groups/ organisations (e.g. NGOs, not-profit organisations, community groups and Aboriginal groups) to partner with municipal governments. For example, in

102 [http://www.cscd.gov.bc.ca/qqd/infra/infrastructure_grants/infrastructure_planning_grant.htm](http://www.cscd.gov.bc.ca/qqd/infra/infrastructure_grants/infrastructure_planning_grant.htm)
103 [https://www.banff.ca/solar](https://www.banff.ca/solar)
106 Note that electricity price increase are due to multiple factors.
order to be eligible for the Green Municipal Fund\textsuperscript{113} local groups/organisations must be partnered with a municipal government. The Fund includes grants to develop plans, conduct feasibility studies and pilot projects, and low interest loans (often combined with grants) to implement capital projects. The Provinces of Nova Scotia\textsuperscript{114}, New Brunswick\textsuperscript{115} and Quebec mandate utility companies to procure a percentage of electricity from clean energy sources, and other rules also require a certain percentage of this renewable electricity to come from projects that are majority owned by community-based entities. The corporate structures between the developer and community-based entity in these deals are limited partnerships.

The requirement for community entity majority voting units places the onus on developers and general partners to collaborate with community groups and carry out their agreed duties (e.g. managing, construction, etc.) in a way that is in line with the community groups’ interests, as the community group can remove the general partner, should issues arise.

Whilst the majority of shared ownership deals are small (sub 7MW) there are a few examples of larger shared ownership deals. For commercial developers there is therefore a dichotomy of whether to pursue shared ownership projects or develop them themselves. The latter are much easier, but the community support smooths planning issues and does enable the developer to attract higher support tariffs. Invariably developers game these shared ownership arrangements, restricting the level of dividends for example with ‘management charges’ or lend to communities at high rates of interest; but there are constraints placed by the Governments of Nova Scotia, New Brunswick and Quebec to reduce this gaming. For example, if developers are found to be flouting the regulations in Nova Scotia and Quebec developers are given one year to resolve the problem, otherwise the PPA price is reduced by approximately 30%.

**Measures included to ensure social acceptance of projects including community benefits**

Funding programmes for capacity building projects led by municipalities (e.g. the Local Government Infrastructure Planning Grant Programme\textsuperscript{116}) have a strong emphasis on developing plans and infrastructure that will enable the development of sustainable community infrastructure (e.g. community energy projects). In this way, allowing renewable energy schemes in certain places helps reduce planning complaints.

A significant proportion of financial support mechanisms (e.g. grants and low interest finance) are directed at Aboriginal communities. The vast majority of these mechanisms have a strong emphasis on providing Aboriginal groups with guidance and financial support so they can build clean energy systems. For example, B.C. First national Clean Energy Business Fund\textsuperscript{117} provides Aboriginal groups with funding to assist with clean energy project feasibility studies and engage with potential turbine manufacturers, installation companies, etc.

Another good example is The Energy Partnership Programme\textsuperscript{118} which promotes broad participation in Ontario’s energy sector by providing funding support to Indigenous communities, co-operatives, municipalities and public sector entities to develop energy projects. This includes support for assessing and developing partnerships for the purpose of developing renewable energy projects, and provides funding to cover costs related to conducting legal, technical and financial due diligence activities.

**Policy instrument/s used/ recommended**

In summary Figure 10 overleaf explains the different support available in Canada over the project life cycle, starting at early stage feasibility, then the development phase, before proceeding to construction and then commissioning.

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\textsuperscript{113} http://www.fcm.ca/home/programmes/green-municipal-fund/about-gmf.htm

\textsuperscript{114} http://www.novascotia.ca/just/regulations/regs/elecrenew.htm

\textsuperscript{115} Source: The Royal Gazette, Fredericton New Brunswick, Vol. 173, Wednesday, November 18 2015. ISSN 1714-9428.

\textsuperscript{116} http://www.cscd.gov.bc.ca/igd/infra/infrastructure_grants/infrastructure_planning_grant.htm

\textsuperscript{117} http://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations/first-nations-clean-energy-business-fund

\textsuperscript{118} http://www.ieso.ca/Pages/Participate/Funding-Programmes/Energy-Partnerships-Programme/default.aspx
Figure 10: Canadian support for community projects at different stages of project development and typical cash inflows (+) and outflows (-)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Typical elements within each stage</strong></td>
<td>• Finance to pay for, e.g. grant, equity (+)</td>
<td>• Finance to pay for, e.g. grant, equity (+)</td>
<td>• Finance, e.g. loans, share offers, equity investment (+)</td>
<td>• Sale of energy (+)</td>
</tr>
<tr>
<td></td>
<td>• Renewable energy resource estimates (-)</td>
<td>• Full feasibility (-)</td>
<td>• Equipment (-)</td>
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<td></td>
<td>• Select site (-)</td>
<td>• Bankable renewable generation estimates (-)</td>
<td>• Civils (-)</td>
<td>• Feedstock cost for biogas (-)</td>
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<td>• Planning fees (-)</td>
<td></td>
<td>• Insurance (-)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Deposits (grid &amp; equipment) (-)</td>
<td></td>
<td>• Finance payments – interest, dividends, etc. (-)</td>
</tr>
</tbody>
</table>

**Policy measures for any renewable project**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Grants available across Canada through Energy Innovation Programme: Clean Energy Innovation (+)</td>
<td>• Grants available across Canada through Energy Innovation Programme: Clean Energy Innovation (+)</td>
<td>• Grants available across Canada through Energy Innovation Programme: Clean Energy Innovation (+)</td>
<td>• Ontario feed in tariff (+)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Banff feed in tariff (+)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Net metering programme (British Columbia) and Enhanced Net Metering (Nova Scotia) (+)</td>
</tr>
</tbody>
</table>

**Examples of community specific policy measures in Canada**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Variety of grants available in some provinces. Eligibility varies (+)</td>
<td></td>
<td>• Low interest loans for not-for-profit organisations and not-for-profit partnerships with municipal government (e.g. Green Municipal Fund) (+)</td>
<td></td>
<td>• Rebates, e.g. Alberta Municipal Solar Programme (+)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Examples of other community support**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Variety of foundation grants available. Eligibility varies (+)</td>
<td>• Variety of foundation grants available. Eligibility varies (+)</td>
<td></td>
<td></td>
<td>• BC Hydro encourages net metering contracts between citizens and small generators to boost PPA revenue.</td>
</tr>
</tbody>
</table>

Examples of other community support:

- Variety of foundation grants available. Eligibility varies (+)
- Variety of foundation grants available. Eligibility varies (+)
- None
- BC Hydro encourages net metering contracts between citizens and small generators to boost PPA revenue.
Positive and negative features

Although there are a wide range of private and public support available for community groups in Canada, support is very much dependant on the location of the project, for example community groups in the province of Saskatchewan will have significantly less access to grant money and financial incentives that those located in British Columbia.

As explained, some developers game shared ownership arrangements, restricting the level of dividends for example with ‘management charges’ or lend to communities at high rates of interest; but there are constraints placed by the Governments of Nova Scotia, New Brunswick and Quebec to reduce this gaming.

Danmark

Description of model

Denmark was the global pioneer for community energy and in the 1970s, 1980s and 1990s the Danish rules encouraged small renewable schemes as the electricity generated by wind turbines in effect had to be owned and used locally, i.e. the electricity generated by a wind turbine could not exceed the local consumption of electricity. This led to smaller cooperative wind projects, for example a 250kW turbine generating maybe 750MWh of electricity per year, with 190 or so local members. The calculation of 190 local members is on the basis of the current average annual Danish household electricity consumption of about 3,900kWh. Initially all consumers had to be within 3km of the installation. There were generous tariff subsidies and later Feed in Tariff to support this.

The IEA-RETD report states that “by 2001, more than 80% of the 6,300 wind turbines in Denmark were owned by wind energy cooperatives, or individual farmers, with over 150,000 Danish families owning wind turbines or shares in wind cooperative”.

In 1999 the ownership rules changed. With advances in wind turbine technology wind turbines became larger and larger, and without the rules linking local demand to local supply the wind farm projects of the last 17 years have predominantly been large schemes wholly owned or led by commercial developers. There have been very few new community wind projects. A similar trend has happened with older community owned wind projects, with the IEA-RETD report noting that many old community-owned wind turbines have been repowered with Government support but “as repowering is very complex, many cooperatives were sold off to commercial actors”.

There are two community specific policies:

- To help with the costs of feasibility studies communities can access convertible loan guarantees of up to 500,000 DKK (€67,000) per project. Should the project not proceed the loan is converted to a non-repayable grant;
- Any wind turbine project greater than 25 metres in height has to under the Promotion of Renewable Energy Act of 2009 offer at least 20% of the shares in the project to local residents within 4½ km of the wind farm. As stated by the IEA-RETD report “However, in
practice most investors develop several wind turbines or projects at once and then sell one (or a number) of their turbines to a community organisation after commissioning – aiming of realising one 100% community ownership installation”\(^{122}\).

The two mainstay national policies for renewables (whether developed by communities or commercial developers) are:

i  Subsidies for small scale strategically important grid connected renewable technologies such as wave power and certain biogas plants\(^{123}\). However, there is only 25 million DKK (about €3.35 million) per year of these subsidies\(^{124}\).

ii  Three types of premium tariffs, being either:
   o  Competitive tenders for offshore wind projects, with the cheapest bidder winning.
   o  Fixed premiums for onshore wind and hydro.
   o  For biogas and solar PV a sliding premium which covers the difference between the wholesale price and a statutory support level – so if wholesale prices are high the level of support is much lower (or zero) than if wholesale prices are low.
   
   The fixed premiums give a fixed tariff for the first 25,000 load hours. As Denmark has high capacity factors (circa 40% or more) this equates to tariffs for about 7¼ years.

As subsidies are continually reducing securing the best possible Power Purchase Agreement (PPA) electricity price becomes even more important. In response to the large number of community owned schemes, in 2009 an independent trading cooperative energy broker Vindenergi DK started trading minimising risks and the complexities for communities wanting to negotiate favourable deals. It has been very successful. The IEA-RETD report states that “more than 50% of total installed wind capacity (around 2,500MW) was traded by Vindenergi DK, with many cooperatives and private generators using them”\(^{125}\).

Qualitative/indicative assessment of the public resources and costs required to operate model

The costs of all the subsidies to renewable projects are ultimately paid by electricity consumers through the Public Service Obligation (PSO). Very large electricity consumers (exceeding 100 GWh per year) pay a reduced levy\(^{126}\). The PSO makes up about 11% of electricity bills\(^{127}\). In May 2016 a legal case claiming that the Danish wind subsidies favour Danish companies was upheld by the European courts, resulting in a risk that the PSO may be abandoned\(^{128}\). However, recently a solution appears to be found with the PSO liability being shifted away from electricity consumers to taxpayers\(^{129}\).

\(^{122}\) Idem. p.8.

\(^{123}\) Idem. p.10.


\(^{126}\) Ecofys. Design features of support schemes for renewable electricity. 2014. p. 17


### Summary of financial/commercial structure of projects

Most wholly owned community projects are structured as General Partnerships, a legal form which is corporation tax exempt and where each investor has one vote regardless of the number of shares that investor holds. However, above a certain level of dividends (approximately €940) investors have to pay income tax on other dividends. Therefore, this retains the concept that citizens receive tax benefits if the revenues from the scheme are close to the annual electricity bills citizens may face.

As well as General Partnerships, municipalities also invest in renewable energy projects, setting up their own companies. The municipality can access low-cost loans from the Government for this.

With both General Partnerships and municipal investments there is not the concept of community benefit, i.e. giving remaining profits to a local charitable cause. Such projects, of which there are few, tend to be set up as community foundations.

For shared ownership schemes under the Promotion of Renewable Energy Act of 2009 these are normally structured as companies, liable to Danish corporation tax. However, as explained above, in reality commercial developers sell one or two wind turbines to communities which can then be set up as corporation tax exempt General Partnerships. This is a Split Ownership shared ownership model, with the community maybe having an agreement to share the grid connection with the developer.

### Measures included to ensure social acceptance of projects including community benefits

As explained, historically and aligned to the principle of local generation for local demand local wind projects tended to be one or two turbines close to small communities. Such schemes received widespread local support. However, as wind farms have become bigger, and developed by large companies there has been increasing public antagonism towards wind projects. In an attempt to reduce this the Danish Government introduced three policies:

- The Promotion of Renewable Energy Act of 2009 with its requirements for wind farm developers to offer up to 20% of the shares in the wind farm to residents living within 4½ km of the wind farm. Some initial analysis by Kenny et al. reports that between 2009 and 2011 there were 15 shared ownership projects and the average investment per citizen was €108,029, a very significant sum. This leads one to question the numbers, and whether the currency is indeed Euros (€s) or Danish Krone, which would make the sum about €14,375 per citizen, still a very large amount. This obligation can be seen as beneficial as it increases the chance of local acceptance of schemes, but also as an additional cost for developers to pay for the marketing of the projects and receive only 80% of the net profits generated.

- Setting statutory compensation rules through the planning system – the ‘adjacent residences’ scheme. Any citizen living within six times the height of a wind farm can receive Government compensation. As wind turbines may have hub heights of 100 metres, and blades of 100 metres in diameter, this means that anyone living within about 1km of a wind farm will receive compensation.

- Central Government grants which are given to municipalities if wind projects (whether community led or developer led) proceed for municipalities to spend on enhancing the local landscape or encourage recreation, e.g. with parks and sports areas. The IEA-RETD report states, “However, only few municipalities have utilized the full amount of funding available to the municipality. For instance, by the end of January 2015 an amount of 76.2 million DKK

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132 Idem. p.15.

(€10.3 million) was available, while only 24.8 million DKK (€3.3 million) had been used under the scheme.\textsuperscript{134}

**Policy instrument/s used/ recommended**

In summary Figure 11 explains the different support available in Germany over the project life cycle, starting at early stage feasibility, then the development phase, before proceeding to construction and then commissioning.

**Positive and negative features**

With changes in the levels of subsidies available in the past 17 years there have been very few new wholly owned community schemes. Prior to 1999 there were some community schemes where the community made charitable donations allowing those affected citizens with limited financial means. Now the move towards citizens investing in shared ownership projects has reversed some of the early community principles about community ethos, working together to allow citizens to in effect only consume green energy.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Typical elements within each stage</strong></td>
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<td>• Finance, e.g. loans, share offers, equity investment (+)</td>
<td>• Sale of energy (+)</td>
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<td></td>
<td>• Renewable energy resource estimates (-)</td>
<td>• Full feasibility (-)</td>
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<td>• Select site (-)</td>
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<td>• Feedstock cost for biogas (-)</td>
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<td>• O&amp;M contracts (-)</td>
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<td>• Land rent (-)</td>
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<td>• Planning fees (-)</td>
<td></td>
<td>• Insurance (-)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Deposits (grid &amp; equipment) (-)</td>
<td></td>
<td>• Finance payments – interest, dividends, etc. (-)</td>
</tr>
</tbody>
</table>
| **Policy measures for any renewable project** | None                                             | None                                             | Government grants to municipalities that allow wind turbine projects for parks and sports facilities (at no cost to investor) | Premium tariffs (+):
|                        |                                                   |                                                   |                                                   |   o Competitive tenders                      |
|                        |                                                   |                                                   |                                                   |   o Fixed premiums                            |
|                        |                                                   |                                                   |                                                   |   o Sliding premiums                          |
|                        |                                                   |                                                   |                                                   | • Subsidies for strategic small renewables (+) |
|                        |                                                   |                                                   |                                                   | • Statutory compensation for citizens living within 6x height of turbines (-) |
| **Examples of community specific policy measures** | 500,000 DKK loan for feasibility studies  | None                                             | None                                             | Promotion of Renewable Energy Act of 2009 with requirement for 20% local share ownership (-) |
|                        |                                                   |                                                   |                                                   | Community energy broker to maximise sale price of electricity (+) |
| **Examples of other community support**     | None                                             | None                                             | None                                             |                                                   |
Description of model

In Germany there is considerable policy support for renewable energy, but nothing additional or specific for community renewable community energy. Nevertheless, there is some regional and state governmental community policy support including:

- Evidence that some regional and state governments provide assistance to communities developing rooftop solar projects or other renewable projects; and
- The State of Mecklenburg-Vorpommern’s “Citizen and Municipal Participation Law” of April 2016 stipulates that wind farm developers must offer either an equity stake of up to 10% of the project or interest bearing bonds to citizens living within 5km of the project. Another of the other 16 States, Thuringia, has issued voluntary guidelines for all wind farm developers to offer shares, savings bonds or participation certificates.

However, in Germany community ownership does not have the same meaning as it does in the UK and other jurisdictions where community projects distribute remaining profits in the scheme to charitable causes, thereby offering benefits to those who have limited financial means. Rather, in Germany the beneficiaries tend to be citizens who have cash resources and want to invest in the scheme. Further, many community schemes are small cooperatives owned by three or four farmers (rather than widely among many individuals) who jointly invest in a biogas installation or wind turbine and share all the profits between themselves. Therefore, ultimately community ownership benefits residents who have money to invest, and those without money are not able to share the benefits.

The three mainstay national policies for renewables (whether developed by communities or commercial developers) are:

i. They are given guaranteed dispatch connections to the grid which means that the wholesale price ends up being set by the marginal thermal generation plant, except in the rare instances where renewable energy generation exceeds national demand; and

ii. Any developer can access very attractive loans of up to €25m from KfW (the German public bank), sometimes for up to 100% of the cost of the assets. This has spurred the large scale expansion of solar PV in particular in the country. Not set by any policy, but rather as a result of the wider cooperative movement, cooperative banks have also emerged offering competitively priced loans to renewable cooperatives; and

iii. Historically attractive Feed in Tariffs (FiTs) whether developed by a community or commercial developer. As of early 2017 FiTs have now been limited to projects less than 100kW, typically small scale solar projects that small businesses or cooperatives may develop.

From 100kW to an upper band (750kW for onshore wind and solar and 150kw for biogas - see Figure 12 overleaf) the support is a market premium - a fixed total price per kWh with generators receiving as a top up the differential between the fixed price and a centrally determined rolling wholesale price. Therefore, developers have to negotiate Purchase Power Agreements (PPAs) with energy supply companies (called ‘direct marketing’) to try to match or better the centrally calculated wholesale price. This can be complicated for

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communities, as communities often only do one project, and therefore cannot learn from experience.\footnote{IEA-RETD (2016), Cost and financing aspects of community renewable energy projects. Volume II: German Case Study. Ricardo Energy & Environment and Ecologic Institute, IEA-RETD Operating Agent, IEA Implementing Agreement for Renewable Energy Technology Deployment (IEA-RETD), Utrecht, 2016. pgs.6-7.}

**Figure 12: Different systems of Government support for different scales of renewable project**

<table>
<thead>
<tr>
<th></th>
<th>Wind</th>
<th>Solar</th>
<th>Biogas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FiT</strong></td>
<td>&lt;100kW</td>
<td>&lt;100kW</td>
<td>&lt;100kW</td>
</tr>
<tr>
<td><strong>Market premium fixed support price</strong></td>
<td>100 – 750kW</td>
<td>100 – 750kW</td>
<td>100 – 150kW</td>
</tr>
<tr>
<td><strong>Auctions</strong></td>
<td>&gt;750kW</td>
<td>&gt;750kW</td>
<td>&gt;150kW</td>
</tr>
</tbody>
</table>


A number of pilot auctions have already been held in 2015 and 2016, and auctions are now the new standard for wind and solar projects above 750kW and biogas projects above 150kW. As with direct marketing, the auction system works against small community developers as bidding into the auctions is complicated and costly, and for communities who may only be developing one scheme they may find it hard to pay off these costs if their auction bid fails.

Due to this difficulty a number of German states are now considering a special carve out where communities are able to build schemes at the eventual auction price if they wish.\footnote{Morris, C. April 2016. German PV auctions reach record low price, but most bids still lose. Blog post accessed at: http://energytransition.de/2016/04/german-pv-auctions-reach-record-low-price-but-most-bids-still-lose/} This means that communities do not need to go through the tendering process, but can wait until the price is set and can then work out if their scheme could be profitable at that support price.

There is additional support for those generators who can modulate their energy generation to demand needs. This therefore benefits those biogas projects where generation can be varied at different times of the year, or within a day by storing biogas in tanks for use during evenings when electricity prices are higher.

**Qualitative/indicative assessment of the public resources and costs required to operate model**

Due to the historically high FiT rates there is an approximately 6 c/kWh surcharge to the cost of electricity to residential consumers, which is approximately a quarter of the total domestic electricity price of about 24c/kWh. Larger businesses do not have to pay this surcharge.\footnote{Thalman E. What German households pay for power. 16 December 2016. Blog post accessed at: https://www.cleanenergywire.org/factsheets/what-german-households-pay-power} Therefore, more affluent domestic consumers have been installing solar panels on their roofs to reduce their electricity bills. There are also interest free loans for residential battery systems linked to PV units to peak shift power, which because of the very high retail price is again worthwhile. Therefore, it is the poorest members of society, or those living in flats, that have the highest electricity tariffs.

**Summary of financial/ commercial structure of projects**

As explained, one reason why community projects are successful in Germany is because the definition of community is broad with many community projects being three or four farmers jointly...
investing in a wind turbine or anaerobic digestion (AD) biogas project. So rather than the profits being used for wider community benefit activities, the profits are given to the investors. It is for this reason that community renewable energy projects pay German corporation and trade tax.

There are about 1,000 renewable energy cooperatives in Germany. Whilst different individuals or organisations can own different numbers of shares, the German principle of cooperatives is that each member (whether they have 1 share or 1,000 shares) gets one vote. As stated in the IEA-RETD report “The average financial contribution to energy cooperatives that are members in the German cooperative association Deutscher Genossenschafts- und Räiffeisenverband (DGRV) is €3,298 per member in 2014 and around €5,500 according to a survey of Leuphana University”.

The other main ownership route is through closed end funds which give investors fewer rights, as management is separated. Although there are fewer closed end funds they tend to be used for larger deals so attract many investors.

As the renewable energy market is very mature in Germany very often communities will sub-contract the development and construction phases to specialist sub-contractors, seeing the investment like any other investment individuals may make, yet one that ties into the concept of Energiewende - the transition by Germany to a low carbon, environmentally sound, reliable, and affordable energy supply.

**Measures included to ensure social acceptance of projects including community benefits**

As a result of the Energiewende and the ability for residents to become involved in the energy revolution by installing solar PV panels on their roofs there is widespread acceptance of renewable energy generation, with citizens becoming particularly supportive of civic participation. Hall, et al. report that German “co-operatives constitute 21% of the 34GW installed capacity under citizen ownership”.

However, whilst there is widespread acceptance of rooftop mounted solar PV, there is increasing reticent to wind projects, and also biogas projects as most biogas projects use crops (e.g. maize) as their energy source.

Even without the shared ownership obligations in some States larger commercial wind developers are often keen to enter into shared ownership deals as a way to reduce planning objections. Further, in a recent paper by Bauwens, Gotchev and Holstenkamp they note that the anti-wind protest movement “seems to be less strong in some areas with high penetration of community wind”.

**Policy instrument/s used/ recommended**

In summary explains the different support available in Germany over the project life cycle, starting at early stage feasibility, then the development phase, before proceeding to construction and then commissioning.

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Figure 13: German support for community projects at different stages of project development and typical cash inflows (+) and outflows (-)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical elements</td>
<td>• Finance to pay for, e.g. grant, equity (+)</td>
<td>• Finance to pay for, e.g. grant, equity (+)</td>
<td>• Finance, e.g. loans, share offers, equity investment (+)</td>
<td>• Sale of energy (+)</td>
</tr>
<tr>
<td>within each stage</td>
<td>• Renewable energy resource estimates (-)</td>
<td>• Full feasibility (-)</td>
<td>• Equipment (-)</td>
<td>• Renewable incentives (+)</td>
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<tr>
<td></td>
<td>• Select site (-)</td>
<td>• Bankable renewable generation estimates (-)</td>
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<td></td>
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<td>• O&amp;M contracts (-)</td>
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<td>• Planning fees (-)</td>
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<td>• Insurance (-)</td>
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<td></td>
<td>• Deposits (grid &amp; equipment) (-)</td>
<td></td>
<td>• Finance payments – interest, dividends, etc. (-)</td>
</tr>
<tr>
<td>Policy measures</td>
<td>None</td>
<td>None</td>
<td>• Attractive KfW loans for up to €25m (+)</td>
<td>• Preferential grid access (+)</td>
</tr>
<tr>
<td>for any renewable</td>
<td></td>
<td></td>
<td></td>
<td>• FiTs (+)</td>
</tr>
<tr>
<td>project</td>
<td></td>
<td></td>
<td></td>
<td>• Direct marketing support (+)</td>
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<td></td>
<td></td>
<td></td>
<td>• Electricity auctions (+)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Payments for ongoing attractive loans (-)</td>
</tr>
<tr>
<td>Examples of</td>
<td>None</td>
<td>None</td>
<td>Some states stipulate that any renewable developer has to make some shares or bonds available to local residents</td>
<td>None</td>
</tr>
<tr>
<td>community specific</td>
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<tr>
<td>policy measures in</td>
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<tr>
<td>Germany</td>
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<tr>
<td>Examples of</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>other community</td>
<td></td>
<td></td>
<td>• Cooperative banks lend money at competitive rates (+)</td>
<td></td>
</tr>
<tr>
<td>support</td>
<td></td>
<td></td>
<td></td>
<td>• Payments for ongoing competitive cooperative loans (-)</td>
</tr>
</tbody>
</table>

Positive and negative features

Due to the absence of national policies for community renewable energy, and the fact that the States of Mecklenburg-Vorpommern and Thuringia have only recently introduced their shared ownership requirements it has not been possible to make an assessment of the specific community energy support, apart from to acknowledge that even without particular special provisions community owned renewable projects are very common and widely accepted as a vital contribution to Energiewende.
**United Kingdom**

### Description of model

Acknowledging the difficulties communities have in raising money for the feasibility and development stage levels different countries in the UK have different policies. As can be seen in **Figure 14**, England, Scotland, and Wales have their own programmes although the English Rural Community Energy Fund loans have attracted less demand given the high 45% interest rate and are only available in rural communities with less than 10,000 residents, or areas are classified by the Office of National Statistics as 'predominantly rural'.

As well as providing financial support each country has its own development officers to assist communities through the project development cycle, and guidelines, information documents and financial models to assist communities realise their ambitions.

**Figure 14: Different Government grants for the development phase of community projects**

<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>Northern Ireland</th>
<th>Scotland</th>
<th>Wales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial feasibility</td>
<td>RCEF £20k Stage 1 Feasibility Grants.</td>
<td>N/A</td>
<td>CARES Start Up Grant (£10k or £20k)</td>
<td>Similar to Scotland but more flexibility</td>
</tr>
<tr>
<td>Development phase</td>
<td>RCEF £130k Stage 2 Development Loan with a 45% total interest rate</td>
<td>N/A</td>
<td>£150k Pre-Planning loan at 10% interest per year</td>
<td>Similar to Scotland but more flexibility</td>
</tr>
<tr>
<td>Total number of Government paid development officers</td>
<td>Uncertain but believed to be 2 or 3</td>
<td>N/A</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

**Sources:**


Beyond specific Government support, there are a number of social investors lending to the sector, as shown in **Figure 15**. Most will only lend from financial close onwards (once all the planning issues, grid connection issues, etc. have been resolved), but in Wales the Robert Owen Community Banking will lend for the development phase.
### Figure 15: Other loans available to communities in the UK

<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>Northern Ireland</th>
<th>Scotland</th>
<th>Wales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial feasibility</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Loans provided by social lender</td>
</tr>
<tr>
<td>Development phase</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Robert Owen Banking at 6-10%</td>
</tr>
<tr>
<td>Construction/</td>
<td>As well as commercial lenders and crowd</td>
<td>As well as commercial lenders and crowd</td>
<td>As well as commercial lenders and crowd</td>
<td>As well as commercial lenders and crowd</td>
</tr>
<tr>
<td>operations phase</td>
<td>funding sites social loans from:</td>
<td>funding sites social loans from:</td>
<td>funding sites social loans from:</td>
<td>funding sites social loans from:</td>
</tr>
<tr>
<td></td>
<td>• Big Issue Invest</td>
<td>• Big Issue Invest</td>
<td>• Big Issue Invest</td>
<td>• Big Issue Invest</td>
</tr>
<tr>
<td></td>
<td>• Charity Bank</td>
<td>• Charity Bank</td>
<td>• Charity Bank</td>
<td>• Charity Bank</td>
</tr>
<tr>
<td></td>
<td>• Social Investment Business – Community Investment Fund</td>
<td>• Social Investment Business – Community Investment Fund</td>
<td>• Social Investment Business – Community Investment Fund</td>
<td>• Social Investment Business – Community Investment Fund</td>
</tr>
</tbody>
</table>

**Sources:**

Some of these funders were active in the market before CARES, however most entered the market after CARES was initially set up in 2009 filling a market gap providing construction finance to small scale projects.

As well as this specific support all communities can access the same tariff support mechanisms as other renewable developers, namely:

1. Feed in Tariffs for 20 years, with the latest tariffs for January to March 2017 shown in Figure 16 overleaf. As can be seen there is now no support for onshore wind greater than 1.5MW. Applications for new Feed in Tariff supported projects end in March 2019, and it is uncertain what will happen after that date;

2. The Renewables Obligation which is a market based instrument where different technologies receive different multiples of Renewables Obligation Certificates (ROCs) per MW of capacity for 20 years. The scheme will close for new projects in March 2017;
iii For renewable projects that will generate heat there is the Renewable Heat Incentive (RHI), which for domestic schemes is for seven years and for commercial (non-domestic) schemes is for 20 years;

iv In 2015 some larger scale technologies became eligible to bid for Contracts for Difference (CfD) deals. At the end of 2016 a second round of CfD contracts were announced which will be for offshore wind, tidal, biogas, dedicated biomass CHP, geothermal, energy from waste and gasification.

Figure 16: The Feed in Tariff for technologies January – March 2017

<table>
<thead>
<tr>
<th>Technology</th>
<th>Band</th>
<th>p/kWh</th>
<th>Technology</th>
<th>p/kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV (other than stand-alone) with total installed capacity of 10 kW or less</td>
<td>Higher*</td>
<td>4.11</td>
<td>Hydro generating station with total installed capacity of 100kW or less</td>
<td>7.63</td>
</tr>
<tr>
<td></td>
<td>Middle*</td>
<td>3.70</td>
<td>Hydro generating station with total installed capacity greater than 100kW but not exceeding 500kW</td>
<td>6.11</td>
</tr>
<tr>
<td></td>
<td>Lower*</td>
<td>0.52</td>
<td>Hydro generating station with total installed capacity greater than 500kW but not exceeding 2 MW</td>
<td>6.11</td>
</tr>
<tr>
<td>PV (other than stand-alone) with total installed capacity greater than 10 kW but not exceeding 50kW</td>
<td>Higher*</td>
<td>4.32</td>
<td>Hydro generating station with total installed capacity greater than 2 MW</td>
<td>4.43</td>
</tr>
<tr>
<td></td>
<td>Middle*</td>
<td>3.89</td>
<td>Wind with total installed capacity of 50kW or less</td>
<td>8.26</td>
</tr>
<tr>
<td></td>
<td>Lower*</td>
<td>0.52</td>
<td>Wind with total installed capacity greater than 50kW but not exceeding 100 kW</td>
<td>5.42</td>
</tr>
<tr>
<td>PV (other than stand-alone) with total installed capacity greater than 50 kW but not exceeding 250kW</td>
<td>Higher*</td>
<td>1.99</td>
<td>Wind with total installed capacity greater than 100kW but not exceeding 1.5 MW</td>
<td>3.51</td>
</tr>
<tr>
<td></td>
<td>Middle*</td>
<td>1.79</td>
<td>Wind with total installed capacity exceeding 1.5MW</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>Lower*</td>
<td>0.52</td>
<td>Anaerobic digestion with total installed capacity of 250kW or less</td>
<td>5.99</td>
</tr>
<tr>
<td>PV (other than stand-alone) with total installed capacity greater than 250 kW but not exceeding 1 MW</td>
<td>N/A</td>
<td>1.65</td>
<td>Anaerobic digestion with total installed capacity greater than 250kW but not exceeding 500kW</td>
<td>5.53</td>
</tr>
<tr>
<td>PV (other than stand-alone) with total installed capacity greater than 1 MW</td>
<td>N/A</td>
<td>0.52</td>
<td>Anaerobic digestion with total installed capacity greater than 500kW</td>
<td>5.70</td>
</tr>
<tr>
<td>Stand-alone solar photovoltaic</td>
<td>N/A</td>
<td>0.42</td>
<td>Combined Heat and Power with total installed capacity less than 2kW</td>
<td>13.45</td>
</tr>
<tr>
<td>Export Tariff all technologies</td>
<td></td>
<td></td>
<td>Export Tariff all technologies</td>
<td>4.91</td>
</tr>
</tbody>
</table>

* For solar PV projects the higher tariff is applied for buildings that have an Energy Performance Certificate (EPC) of Level D. The middle tariff is for buildings again with an EPC of D or greater, but where the developer has developed 25 or more small installations. The lower tariff rate is for any building below an EPC rating of D.


As most community schemes in the UK have been sub 5MW the Feed in Tariff is therefore the support tariff most commonly chosen. However, at the end of 2015 the Feed in Tariffs for all technologies (except hydropower) were cut significantly, meaning that many community project that had not pre-accredited for the Feed in Tariff (only possible when the community has secured planning permission, a signed grid connection agreement and for hydropower relevant water licences and consents also) found that their schemes were no longer viable.
Nevertheless, there are three small FiT exemptions for community projects, namely that:

- For smaller scale PV projects the threshold for the higher tariff is an EPC category G\(^{148}\).
- Once communities have pre-accredited they are given an additional six months’ leeway before they have to be commissioned\(^{149}\), so solar PV deals are allowed 12 months, biogas and onshore wind 18 months and hydropower 2½ years; and
- The maximum size of FiT project is 5MW but if a community partners with another developer then the maximum size of each separate installation can be 5MW each even if the grid connection is shared. This had led to a number of 4.99 MW x 4.99MW solar farms, with significant economies of scale being achieved and a shared grid connection\(^{150}\).

As well as these FiT exemptions there are also guidelines for any renewable developer to consider selling some of the equity in the project to a local community group or local citizens. The UK Infrastructure Act 2015 gives the Secretary of State the right to enforce this, with a minimum requirement of at least 5% being sold, but to date this has not been exercised\(^{151}\). However, in Scotland the ‘Good practice principles for shared ownership of onshore renewable energy developments’ states that “shared ownership should become the standard, and are committed to working with industry, community groups and other stakeholders to ensure this becomes a reality”\(^{152}\). There have already been a few shared ownership deals in Scotland.

Lastly, historically various forms of income tax relief were available for investors in renewable projects, but for any project supported by a Feed in Tariff or RHI this is no longer possible.

# Qualitative/indicative assessment of the public resources and costs required to operate model

For a domestic customer the costs of the FIT, RO and CfD programme is currently about 7.35% of the average electricity bill\(^{153}\). The share of this built by communities has been estimated in the IEA-RETD report for the UK as only about ¼% of the total amount of renewable assets built\(^{154}\).

In terms of the cost to Government (and ultimately the tax payer) of grants, loans and development officers Scotland has the most comprehensive support programme for community renewables. In 2015-16 the cost of the development officers, the CARES support team and the sum of all the CARES grants and loans was about £6.1 million in 2015-16\(^{155}\). However, this cost also includes costs associated with the delivery of the costs associated with the delivery of Wave Energy Scotland's activity. More than 20 community energy schemes have closed with the CARES programme and the CARES programme has enabled the Scottish Government to exceed its 2020 target of 500MW of community and rural business energy in 2016 which includes both community-led and developer-led community projects. A new target of 1GW has now been set for 2020.

# Summary of financial/commercial structure of projects

As explained in Figure 17 overleaf there are many legal structures communities can choose, although the bulk of the community deals have been structured as Community Benefit Society (Bencoms). Although Bencoms are liable to pay corporation tax, normally the Bencom will gift aid any remaining profits to a charitable cause.


\(^{149}\) Idem. p.33.


\(^{151}\) Section 38 of Part 6 of the UK Infrastructure Act 2015 states “The Secretary of State may make regulations which give individuals resident in a community or groups connected with a community (or both) the right to buy a stake in a renewable electricity generation facility that is located — (a) in the community (if it is a land-based facility), or (b) adjacent to the community (if it is an offshore facility).”


Figure 17: Different legal structures for community projects

<table>
<thead>
<tr>
<th>Legal Structures</th>
<th>Description</th>
<th>Corporate tax paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Society: Community Benefit Society (BenCom)</td>
<td>A group of more than three members registered under the Financial Conduct Authority (FCA) that operate for no profit, trade to benefit the boarder community, and are governed by charity law.</td>
<td>Y</td>
</tr>
<tr>
<td>Registered Society: Cooperative</td>
<td>A group of more than three members registered under FCA that operate for no profit, and run for the mutual benefit of their members that use its services.</td>
<td>Y</td>
</tr>
<tr>
<td>Community Interest Company (CICs)</td>
<td>A form of limited company that is governed by the Companies Act 2004 and is designed for social enterprises.</td>
<td>Y</td>
</tr>
<tr>
<td>Private Company Limited by shares (CLSs) if wholly owned by a registered charity</td>
<td>Private limited company, where shareholders’ liability is limited to the capital originally invested, with shares not listed on a stock exchange.</td>
<td>Y</td>
</tr>
<tr>
<td>Private Company Limited by guarantee (CLGs) if wholly owned by registered charity</td>
<td>A limited company registered with Companies House and governed by Company Law, with a limited liability status with shareholders guaranteeing to pay £1 - £10 if insolvency occurs.</td>
<td>Y</td>
</tr>
<tr>
<td>Charitable Trust</td>
<td>An irrevocable trust established for charitable purposes.</td>
<td>N</td>
</tr>
<tr>
<td>Charitable incorporated organisation (CIO)</td>
<td>An organisation with charitable aims that meets the public benefit test, is incorporated without being a company, and is registered with the Charity Commission.</td>
<td>N</td>
</tr>
</tbody>
</table>


The IEA-RETD report estimates that in June 2015 there were about 100 community projects in the UK, so by now there may be 130 or so.

**Policy instrument/s used/ recommended**

In summary Figure 18 explains the different support available in the UK over the project life cycle, starting at early stage feasibility, then the development phase, before proceeding to construction and then commissioning.
Figure 18: UK support for community projects at different stages of project development and typical cash inflows (+) and outflows (-)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Typical elements within each stage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance to pay for, e.g. grant, equity (+)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renewable energy resource estimates (-)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select site (-)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outline costs and benefits (-)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy measures for any renewable project</strong></td>
<td>None</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Examples of community specific policy measures in UK</strong></td>
<td>Feasibility Study Grants</td>
<td>Development phase loans</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Feasibility Study Grants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development phase loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage</th>
<th>Feasibility</th>
<th>Development</th>
<th>Construction</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Examples of other community support</strong></td>
<td>None</td>
<td>In Wales loans from Robert Owen Community Bank</td>
<td>Crowd funding (+)</td>
<td>Crowd funding (+)</td>
</tr>
<tr>
<td>None</td>
<td>In Wales loans from Robert Owen Community Bank</td>
<td>Crowd funding (+)</td>
<td>Loans from social lenders (+)</td>
<td>Loans from social lenders (+)</td>
</tr>
</tbody>
</table>
## Definitions of community

The following table summarises the key characteristics of community as defined in various countries and regions around the world.

<table>
<thead>
<tr>
<th>Country</th>
<th>Context of definition in Country of Origin</th>
<th>Definition</th>
<th>Ownership model</th>
<th>Geographic boundary</th>
<th>Co-ops</th>
<th>Citizens</th>
<th>Community groups</th>
<th>Charities</th>
<th>Municipalities</th>
<th>Local Authorities</th>
<th>SMEs</th>
<th>Educational bodies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>General</td>
<td>Community energy is referred to as Bürgerenergie, which translates literally as “citizen energy.” Private persons and/or small agricultural businesses (along with other legal entities) invest individually or together into RES installations.</td>
<td>Shared-ownership Wholly community-owned</td>
<td>Nonspecific, but &quot;local&quot;</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>UK</td>
<td>FIT policy</td>
<td>Based on Ofgem definition: &quot;Any of the following which has 50 or fewer employees: a charity; a subsidiary wholly owned by a charity; a community benefit society or co-operative society; or a community interest company.&quot;</td>
<td>Wholly community-owned</td>
<td>Non specific</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Canada</td>
<td>National and Provincial programmes.</td>
<td>The definition varies mainly by region and policy type (see Appendix F).</td>
<td>Shared-ownership Wholly community-owned</td>
<td>Nonspecific, but generally &quot;local&quot;</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Denmark</td>
<td>General</td>
<td>Community led projects consist of a group of people who participate in the energy transition by cooperating in the field of renewable energy. These projects are initiated, developed, and operated primarily by the local community and often run in the form of &quot;general partnerships&quot;. However, the nature of local ownership has changed significantly over the last six years with new projects exclusively owned by local citizens becoming the exception rather than the norm.</td>
<td>Shared-ownership Wholly community-owned</td>
<td>% of local residents within 4.5km of the wind farm or within the municipality</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Region</td>
<td>General</td>
<td>Community groups, local authorities, housing associations, other Scottish public bodies, charities, including faith organisations, further and higher education establishments, local businesses, and Scottish farms and estates.</td>
<td>Shared-ownership Wholly community-owned</td>
<td>Nonspecific, but generally “local”</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>--------</td>
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<td>---</td>
</tr>
</tbody>
</table>
| EU     | General | A renewable energy community is defined as either an SME or not-for-profit organisation, the shareholders or members of which operate in the field of renewable energy fulfilling four of the following criteria:  
   i) Shareholders or members are persons, local authorities (including municipalities) or SMEs operating in the fields of renewable energy;  
   ii) At least 51% of the shareholders or members with voting rights of the entity are natural persons;  
   iii) At least 51% of the shares or participation rights of the entity are owned by local members, i.e. representatives of local public and local groups;  
   iv) At least 51% of the seats in the board of directors or managing bodies of the entity are reserved to local members, i.e. representatives of local public and local private socio-economic interests or citizens having a direct interest in the community activity and its impacts; and  
   v) The community has not installed more than 18 MW of renewable capacity for electricity, heating and cooling and transport as a yearly average in the previous five years. | Shared-ownership Wholly community-owned | Nonspecific | Y | Y | Y | Y | Y | Y | Y | Y |
Appendix H  Recommendations by Irish community energy stakeholders

Three main reports prepared by different Irish stakeholders that provide their own recommendations for the growth of the community energy sector.

A. Tipperary Energy Agency

SEAI funded a report by the Tipperary Energy Agency in entitled “Legislative Mechanisms for Local Community Ownership and Investment in Renewable Energy Infrastructure” that was published in November 2016 (Tipperary Energy Agency, 2016). Three main options were proposed.

Option One

As citizens living very close to large scale renewable energy installations are most affected by them, it is proposed that renewable energy developers are required to give a mandatory stake in the development to all residents living within one kilometre of project. 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 as current property law would not support such an imposition on private development rights. It may also render certain renewable developments unviable from a developer / funder perspective.

Option Two

It is proposed that Ireland partially imitate the Danish model “option to purchase” scheme. The Danish Government places an obligation on renewable developers of installations above a certain MW threshold to offer for sale shares in their projects to citizens living within a pre-determined radius of the development. The obligation to offer shares would be attached to planning conditions 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 needed 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 is proposed, subject to affordability and consultation, a formalised mechanism to support a ‘community gain’ approach for all projects both above and below Strategic Infrastructure Development (SID) thresholds is adopted. There are a variety of ways a community gain scheme can be implemented, as documented in the IWEA “Good Neighbour” report (IWEA, 2013). The principle of local control to determine the use of funds and an objective, transparent and fair administration process (e.g. by a trusted intermediary) should be core to the development of this process.

This proposal would not require legislative change as it non-mandatory and non-binding, and indeed is generally accepted as common practice. Effective implementation would require the development of detailed guidelines and the identification of a trusted intermediary.
B. Irish Solar Energy Association: “ Communities Participation Proposals”


Proposal 1

Community benefit payments for projects at or below 4MW, or on 5MW sites that are in poorer solar PV areas. For larger 5MW+ projects both community benefit and shared ownership structures (explained in Proposal 3 below) could be adopted.

Proposal 2

Creating a Community Energy Investment Fund which allows the wider Irish Community to invest in solar PV with the regulated backing of the Irish State. Consideration could also be given to helping those communities near solar PV projects to invest even if they do not have their own capital.

Proposal 3

Shared ownership of projects is most suitable for larger projects above 5MW. Here the project developer would manage the project and set up a project company. A community (via an appropriate community organisation and which would initially be defined as being within a geographical radius of e.g. 10km) would then be offered shares by the project developer.

C. Friends of the Earth

A Friends of the Earth Paper (Friends of the Earth, 2014) suggests:

- Facilitating access to the National Grid for communities, micro-generators and auto generators;
- Fair and secure payments to support community energy and micro-generation at prices that balance the long term socioeconomic costs of this generation (including reduction in transmission losses, CO2 reduction, EU targets and balance of trade improvements) with the total net metering price and ensures the PSO levy is maintained at close to current levels;
- Funding and financial support to groups in initial stages of development, feasibility, planning and construction – in particular to bridge the gap during first round financing between feasibility and planning;
- Facilitating the development of community micro grids through a smart grid programme;
- Developing a National Community Energy Strategy; and
- Facilitated public engagement and public participation in national energy policy as an essential pre-requisite for the required energy transition. This would include information, workshops, public meetings and debates around the country.
## Appendix I  Stakeholder policy design considerations

The following table includes policy design considerations that were raised by stakeholders during the workshop and interviews. How they have been accounted for is also shown.

**Table 25: Stakeholder policy design considerations**

<table>
<thead>
<tr>
<th>Stakeholder policy design considerations</th>
<th>How addressed in this report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience needs to be gained in community engagement, in the first instance, then move towards</td>
<td>Ensuring communities are appropriately supported through engagement and development of the project is a role of the Trusted Intermediary - Supporting measure 1 (Sections 7.3.1 and 8.6.1 ).</td>
</tr>
<tr>
<td>community-led projects.</td>
<td></td>
</tr>
<tr>
<td>International models (e.g. policy and regulations) should be referenced/used where possible rather than</td>
<td>This was integral to the identification of primary policies</td>
</tr>
<tr>
<td>building policy and regulations from scratch.</td>
<td></td>
</tr>
<tr>
<td>The role of local champions is essential to keeping community-led projects alive.</td>
<td>Supporting local champions is the role of the TI - Supporting measure 1 (see above)</td>
</tr>
<tr>
<td>The size and scale of community impact of a project should be considered when determining whether</td>
<td>Again supporting engagement would be the role of the TI - Supporting measure 1 (see above)</td>
</tr>
<tr>
<td>community engagement takes place.</td>
<td></td>
</tr>
<tr>
<td>Standards and policies must enable developers and communities to engage in a way that is transparent and</td>
<td>Again supporting engagement would be the role of the TI - Supporting measure 1 (see above)</td>
</tr>
<tr>
<td>builds trust.</td>
<td></td>
</tr>
<tr>
<td>There needs to be a clear definition of shared ownership and rules for community participation are key.</td>
<td>The definition of developer-led community projects and community-led projects has evolved from this study and will evolve further through the consultation stage</td>
</tr>
<tr>
<td>Formation and guidance for collaborations are needed. These should be as simple as possible. Could include</td>
<td>Again the role of the TI (see above)</td>
</tr>
<tr>
<td>SPVs such as co-operatives.</td>
<td></td>
</tr>
<tr>
<td>Ability to directly supply energy is popular, there is a lot of demand from communities and business.</td>
<td>This was considered as an enabling policy</td>
</tr>
<tr>
<td>Third party (independent) due diligence of any offer or gift to community.</td>
<td>This could be the role of the TA (see above)</td>
</tr>
<tr>
<td>A scheme similar to the Trusted Intermediary in Scotland (CARES) would be valuable.</td>
<td>Considered as an enabling policy</td>
</tr>
<tr>
<td>Risk associated with community ownership at early stages of projects, when a project remains very high</td>
<td>Noted</td>
</tr>
<tr>
<td>risk (e.g. prior to planning approval).</td>
<td></td>
</tr>
<tr>
<td>Pilot community renewable projects should be considered.</td>
<td>Noted</td>
</tr>
<tr>
<td>There is a perceived lack of joined up thinking between government (e.g. CER: grid connection policy,</td>
<td>Noted</td>
</tr>
<tr>
<td>private wire; DSO, TSO; SEAI: Wind Energy Policy Statement; DCCAE: Renewable Electricity Policy and</td>
<td></td>
</tr>
<tr>
<td>Development Framework.</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix J  Stakeholder developer-led community policy options

<table>
<thead>
<tr>
<th>Policy Option</th>
<th>Description</th>
</tr>
</thead>
</table>
| Mandatory requirement for citizens to be **gifted** a stake (shares/revenue/percentage ownership) in all renewable projects. | - This requires commercial developers to give a stake in the project to a local community in one of the forms of shared ownership as above. This could be to the community (e.g. a local charity), or to individuals within the community.  
- DCCAE to provide best practice guidelines and mandatory requirements.  
- This could potentially be enforced through a planning requirement.  
- Note that stakeholders do not believe that mandatory gifting is practical and may not be a strong incentive for communities. |
| Mandatory requirement for citizens to be **offered** stake (shares/loan note/revenue/percentage ownership) in all renewable projects. | - This requires commercial developers to offer communities or individuals within the community the opportunity to invest in renewable projects.  
- This could potentially be enforced through a planning requirement.  
- DCCAE to provide best practice guidelines and mandatory requirements. |
| Mandatory requirement for developers to engage with communities in some renewable projects. | - Top down enforcement of community engagement. Where meaningful engagement with project promoters should be facilitated by a Government intermediary (called a Trusted Intermediary (TI)).  
- DCCAE to provide best practice guidelines and mandatory requirements.  
- Capacity auctions require developers to bid for contracts, introducing competition. Rules can be set to specify how many MW of capacity are auctioned across groups of bidders. This gives preferential access to the auctions for certain projects.  
- Capacity auctions could be designed to reflect either a graded level of community ownership as in Canada, or a minimum community ownership hurdle. |
| In a capacity auction mechanism, such as Contracts for Difference, auction rules could account for provision of shared ownership. | - For example, the DSO or TSO could be required to allocate a certain MW to projects who have some form of shared ownership.  
- An alternative would be net metering which could allow generators to export the balance of generation not used on site. Favourable grid export options will likely only be possible for small scale. |
<p>| Facilitate favourable grid export options for community developer-led community projects. | - By selling electricity direct to consumers, this potentially allows greater revenues for the electricity at closer to retail rates rather than wholesale rates. |
| Allow developer projects to direct supply consumers, such as local business, schools, public sector. | - A differential price made available to projects that include some form of community ownership (e.g. up to 10MW). This can provide an incentive for projects to look for community investors. Rules needed to stop gaming. |</p>
<table>
<thead>
<tr>
<th>Policy Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accelerated planning process where communities are involved</td>
<td>• Simplified and/or quicker planning process would be an incentive for developer to engage with communities.</td>
</tr>
<tr>
<td>Independent advisory service.</td>
<td>• A Trusted Intermediary could provide community groups with advice (e.g. liaison officer). The officer could be the single entity liaising with the community.</td>
</tr>
<tr>
<td></td>
<td>• Guidance could include advice to ‘flip’ assets between developer and community groups once projects are up and running.</td>
</tr>
<tr>
<td>Information hub</td>
<td>Covering crowdfunding mechanisms and project financing models.</td>
</tr>
<tr>
<td>Investment guarantee</td>
<td>Either the Government or other stakeholders with high credit ratings could provide a guarantee or an insurance product for investors in community-led projects</td>
</tr>
</tbody>
</table>
## Appendix K  Stakeholder community-led policy options

<table>
<thead>
<tr>
<th>Policy Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow wholly owned community projects to directly supply consumers, such as local business, schools, public sector.</td>
<td>Developer-led community projects supplying local schools and public sector buildings have been popular in the UK, particularly with projects which sell discounted electricity to schools, whilst giving wider community benefits. With the drop in the FIT in the UK, commercial renewable projects and community projects in the development phase are looking at direct supply, either through private wire or a virtual network as a means of increasing revenues for projects.</td>
</tr>
<tr>
<td>Grant funding provided to communities for feasibility stages of the project</td>
<td>This de-risks the earliest stages of the project (and the higher risk stages) for the community. The grant programme could be run by the Government, or a Government agency.</td>
</tr>
<tr>
<td>Soft loans to communities with write off facility to develop a project through the planning, legal structuring, grid connection and land agreement phases before a project becomes investment-ready</td>
<td>Like the feasibility stage there is still a high chance of failure. Again this could be managed by the Government or a Government agency. At the point at which the project becomes investment-ready, then requirement for write off is removed.</td>
</tr>
<tr>
<td>Soft loan to communities for construction and capital costs (during construction phase, so no development risk or write off facility)</td>
<td>Small scale projects can have problems accessing finance for a project if the community has no assets to borrow against as project finance from a bank can be difficult to obtain as due diligence costs are high.</td>
</tr>
<tr>
<td>Green bond allowing communities/ citizens to invest in renewable projects</td>
<td>A bond offering a particular return, allows a lot of flexibility as to which projects are funded (particularly with regard to location and commercial viability) and allows the risk to be shared across a portfolio of projects. Similar schemes are being considered by the Scottish Government.</td>
</tr>
<tr>
<td>Small scale generators could be incentivised to match local demand on the distribution network, reducing transmission level supply</td>
<td>A similar requirement was implemented in Denmark during the early years of the development of the wind sector. This ensures that generation was only built close to the demand, so reducing any requirement for grid upgrades.</td>
</tr>
<tr>
<td>Tax incentives offered for community groups/ individuals within the community to invest in the project.</td>
<td>Increases funding available for wholly owned community projects. EII is an existing source of tax-incentivised investment in renewables in Ireland.</td>
</tr>
<tr>
<td>Independent advisory service.</td>
<td>This could be a role for the Government funded Trusted Intermediary assisting communities setting up projects, and supporting communities procure specialist technical, legal and financial advice.</td>
</tr>
<tr>
<td>Information hub.</td>
<td>An information hub would be one of the roles of a Government funded Trusted Intermediary supplying information on technologies, codes of governance, etc.</td>
</tr>
<tr>
<td>Investment Guarantee</td>
<td>Either Government or other stakeholders with high credit rating could provide a guarantee or an insurance product for investors in community-led projects. This would lead to a rapid increase in citizen involvement in community energy if returns are higher than other essentially risk free savings products.</td>
</tr>
</tbody>
</table>
# Appendix L  Management of community benefit

Approaches to the development, implementation and management of community benefit mechanisms vary. These can include policies, schemes, guidance, etc. The following Sections explain what happens in some different jurisdictions.

### Scotland

<table>
<thead>
<tr>
<th>Title</th>
<th>The Highland Council Community Benefit Policy(^{156})</th>
</tr>
</thead>
</table>
| Overview | The policy sets out a framework for supporting communities and developers with a transparent and equitable method for distributing Community Benefit funds across the Highlands. The framework explains allocation factors (e.g. proximity to site, visual impact, etc.), and the distribution and governance of funds.  

The policy is not a requirement; is only applicable where communities or developers invite the Council to negotiate on their behalf. |
| Implementation | The Council is responsible for negotiating Community Benefit across Highland and is the first point of contact for Developers. The Council then plays a key role in calculating the proportional share of Community Benefit from each development. |
| Management | If the Council is requested to negotiate the deal, the Council becomes the first point of contact for Community Benefit issues for communities.  

The Council will support the establishment of appropriately constituted or contracted organisations to administer funds, but communities are expected to consider how Community Benefit payments are received and distributed in their own communities.  

The Council is also responsible for maintaining a Register of Community Benefit agreements. |

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\(^{156}\) The Highland Council, Guidance on the application of The Highland Council Community Benefit Policy for Communities and for Developers of Onshore and Offshore Renewable Energy Developments, February 2013.
**Northern Ireland**

<table>
<thead>
<tr>
<th>Title</th>
<th>The Fermanagh Trust guidance&lt;sup&gt;157&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>Provides recommendations for communities, developers, local authorities, and government on developing a Community Benefit framework.</td>
</tr>
<tr>
<td>Implementation</td>
<td>Not for profit organisations are to take the lead role in establishing good practice guidance including a policy on community engagement and promoting a toolkit on community benefits.</td>
</tr>
</tbody>
</table>

**Responsibilities for communities**

- Communities to explore the range of community benefits which can be provided.

**Duties for developers**

- Developers should provide communities with minimum payments per MW of installed capacity.
- Developers should consider offering some form of community ownership as part of a community benefit package.
- Developers should develop clear protocols on effective community engagement (covering construction and post construction).

**Duties on public sector bodies**

- Local Councils should formally establish guidance protocols (based on good practice) which provide frameworks for developer engagement with the Councils and local communities.
- The Department of Enterprise, Trade and Investment is to actively support local communities in their positive role supporting wind farm projects and encouraging the creation of a low carbon society.
- The Department of Agriculture and Rural Development is to ensure models of good practice, as evidenced in Scotland and Wales, are followed for wind farm projects on land managed by the Forestry Service. This includes the engagement and partnership working with rural communities and the private sector.
- A Government Department is to take the lead role in developing a more coordinated approach to wind farm developments involving the government, private sector and communities, to build upon the principles of sustainable development.

Denmark

Denmark has a number of schemes to support and benefit to local communities.

<table>
<thead>
<tr>
<th>Title</th>
<th>The option to purchase Scheme&lt;sup&gt;158&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>The development of wind turbines over 25 meters in height, including offshore turbines built without governmental tender, must offer for sale at least 20% of the wind turbine project to the local population. Anyone within 4.5 kilometres of a turbine or within the municipality in which the turbine is located can purchase shares. If more than 20% of residents want to purchase shares, then people who live closest have first priority.</td>
</tr>
<tr>
<td>Implementation</td>
<td>Developers must hold meetings (advertised by local newspapers) to provide information on the sale of the project asset, including budgets, liabilities per share, and the price of shares on offer.</td>
</tr>
<tr>
<td>Management</td>
<td>Energinet.dk must approve the sales material as a condition for the wind turbine developer obtaining the price supplement provided for in the Danish Promotion of Renewable Energy Act.</td>
</tr>
</tbody>
</table>

Appendix M  Bibliography


IWEA. (2013). *Good Neighbour: IWEA Best Practice Principles in Community Engagement & Community Commitment*.


