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EUROPEAN UNION
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European Regional Development Fund

LECo

Local Energy Communities

Report on Best Practice Legal Framework / Ownership models for Community Energy Projects

1.0 INTRODUCTION

The involvement of communities in energy initiatives can take various forms from project initiation, administration, development, decision making and financial support. Projects can be fully community owned & develop out of grassroots actions, may be developed between communities, NGOs & local government or may be developed under co-ownership arrangements with the private sector. This report will review the forms of ownership available to communities, and also demonstrate the benefits and weaknesses of each.

Role of communities in the Energy Transition: Within the context of an energy transition to a low carbon economy, new roles for local communities are emerging, whereby they are transitioned from being passive consumers to active prosumers with the possibility of local generation, demand response and energy efficiency measures. The energy transition will require significant mainstreaming of niche social and technical innovations to succeed at the community level, for example electric vehicles, heat pumps, smart meters, sustainable energy communities, domestic PV, and battery storage.

Community led initiatives based on local collaborative solutions that can be set up by individuals, groups of individuals, households, small businesses or local authorities that operate individually or in an organised way are often referred to as 'local energy communities'. These communities are expected to play an important role in the energy transition as they can enable the development of sustainable energy technologies and bring a variety of benefits to local communities.

Commission for the Environment, Climate Change and Energy, 2018.

Role of the LECo Project in community energy initiatives: The LECo project shall respond to the needs of remote communes and settlements for a sustainable energy supply. For this purpose an approach shall be developed to use as far as possible existing renewable resources for the energy supply improving building stock standards by combining new innovative technologies with locally available natural resources. The approach is based on the model of local cycle economy taking also in consideration the use of waste from households, agriculture and industries as potential source of energy. The project shall deliver a set of locally adapted concepts for Community based energy solutions in remote areas. These concepts will be modelled, developed and implemented in selected test communities in each participating country. The methodology for setting up such local adapted concepts and their implementation will be made available in form of a practical guideline which can be used for transferring the results to other locations.

Barriers to community energy: The LECo policy paper has identified common barriers to community energy projects (see below). It is essential that communities are able to participate in the energy transition to a low carbon economy. The barriers are:

Societal, cultural, political and/or organizational:
- Lack of historic experience with cooperatives and civic activism.
- Low trust in the cooperative model as a viable alternative.
- Lack of political support from local representatives.
- No experience with setting up cooperatives.
- Organisational challenges – pre-planning stage barriers.

Legal, administrative, bureaucratic:
- Complicated legal framework, high levels of bureaucracy to acquire licenses.
- Lack of national community energy strategy; lack of national targets for community energy projects, which then are broken down in Local Energy Action Plans by local authorities.
- Bureaucratic barriers to grid connection (complicated application procedures, uncertainty of approval, costs, time consuming).
- Not allowed to operate micro-grids - producing, own-use, selling within community, selling to third-parties – as compared to only: sell it to the grid and buy it back (often with low financial returns to the community – profits are again made by companies outside the community, which defeats the idea to keep revenue within the community).
- Lack of supportive local authorities and/or local energy agencies.
- Generally no support schemes for RES projects.

Technical:
- Technical challenges – lack of expert knowledge to design, plan, procure, implement, commission a project.
- Lack of expert knowledge for operation and maintenance.
- Size of energy project.

Financial:
- Financial challenges in the initial stages of project development; access to finance, grants, etc.
- Fair and secure payments for energy generated (insufficient Feed-in-tariffs, F-i-T only for wind, but not for Solar PV, no standardized PPAs, third-party-offtake not possible.
- Insufficient incentives for renewable heat projects: replacing fossil fuel heating with biomass boilers or solar thermal, heat pumps.
- Complicated tax rules, no tax exemptions.
- Generally no tax incentives for RES projects, lack of guarantees.

Challenges in mature cooperatives:
- Expansion of power generation, of number of members – how shall older and new membership shares be valued?
- Re-investment into existing installations.

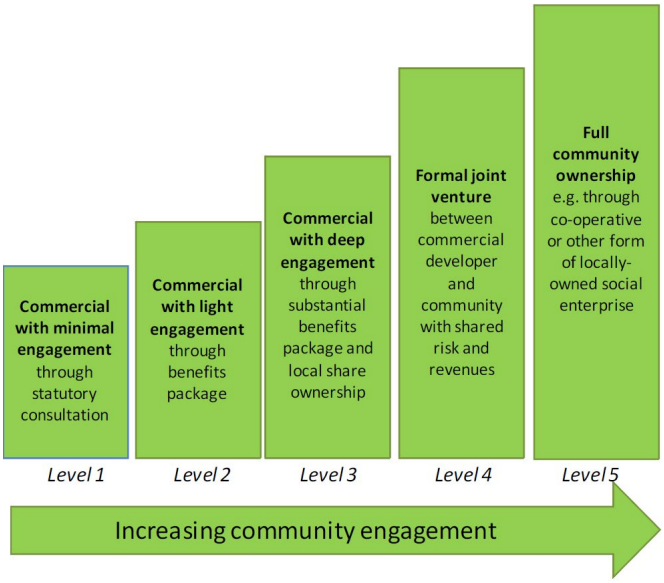
1.1 Ownership Options for LECs

Community Ownership: The need for those who contribute to and accommodate community energy projects to also reap the financial and social benefits they can bring, such as job creation, financial rewards and improved security of supply appears to be a widely held stance which is almost universally supported in the literature [1] [2] [3] [4]. In areas of Mainland Europe, the concept of community ownership has proved successful at incentivising the use of medium to large scale wind energy installations. For instance, as much as 80% of Denmark's wind energy capacity is owned by some form of community partnership [1]. Compare this to Ireland where there is currently only one community owned wind farm in Templederry, County Tipperary with a capacity of 3.9MW. There is currently 3025MW of installed wind capacity in Ireland [5]. This equates to 0.12%.

Community RE as a common/public good: Natural resources (including wind, solar and marine) are vested in the State for the benefit of all citizens under the Constitution in Ireland [6]. Is it appropriate for the State to allocate a proportion of these resources on a fair and a proportionate basis, for example though planning and/or taxation? Community ownership could be a solution to a "just climate transition" model that puts citizens at the heart of the energy transition [7]. According to Friends of the Earth Europe there are many benefits to community and cooperative ownership of RE, for example: it's good for the consumer as it increases competition resulting in a lower energy cost; it's good for the local economy as a locally owned windfarm gives eight times as much local added value as internationally owned projects; it's good for Europe as community energy policy is real to people on the ground, not an abstract Brussels action; and finally it's good for the planet as local ownership lowers local resistance and increases the levels of acceptance on the ground, this ultimately means more renewable installations.

The following models are the most common forms of community energy in practice:

- **The co-operative model:** membership based and democratic.
- **The joint venture:** co-ownership between cooperatives, municipalities and energy companies.
- **The local company:** initiated by a local entrepreneur, supported by the community.
- **The municipal utility:** a municipality owns and operates an energy utility.



Source: Action Renewables: Communities and Renewable Energy: a Study (2014).

Regardless of the specific legal forms local energy communities take, their emergence can be attributed to several key processes that are gaining traction across the EU [8]:

- Remunicipalisation – the process of increasing municipal control over local energy management;
- Devolution - the process of increasing the strategic and political role of local authorities in energy policy;
- Participative governance – the promotion of direct democracy and citizens' influence on energy and climate policies.

EU policy-makers have an important role in setting a level-playing field and minimum requirements for the promotion of local energy communities in the EU [8]. Hence, they should:

- Maintain a stable policy environment for promotion of renewable energy;
- Establish energy market rules that can support an energy transition in all aspects of the system;
- Ensure consistency and coherence between different policies.

National policy-makers are responsible not only for transposing and implementing EU legislation but also for defining specific national objectives and incentives for local energy communities [8]. Hence, they should:

- Acknowledge the role and specific needs of local energy communities in relevant national policies and legislation;
- Establish policies and rules that promote local energy communities and local collaboration;
- Adopt simplified and proportionate regulatory and administrative procedures for local energy communities;
- Ensure local energy communities have access to technical information, guidance and finance.

Local and regional authorities (LRAs) can complement the EU and national policies for promoting local energy communities and be important partners to local energy communities. Therefore, LRAs should:

- Adopt local policies for the development of local energy communities;
- Explore the opportunities to partner with or establish local energy communities.

If possible, a mix or a combination of public, community and private ownership should be available to communities. Community energy projects exist under very different legal structures across Europe. For LECo, the following countries will be explained: Ireland, Finland, Sweden and Germany.

1.2 Co-operative Model

The International Co-operative Alliance defines co-operatives as being comprised of 'autonomous groups of individuals established on a voluntary basis to meet their members' needs which can be economic, social or cultural' (http://ica.coop/en/what-co-operative). Energy cooperatives are one of the most common forms of local energy communities. They are membership based and democratic, and can provide different services across the energy sector such as: self-production and consumption; RE production for sale on the grid; ownership or operation of storage facilities, micro-grids and other distribution infrastructure; provision of energy efficiency and other services; aggregate demand response and distributed generation of RE to provide flexibility services [8]. Additionally, unlike traditional businesses, cooperatives are owned by their members/users on a 'one member – one vote' principle and aim to maximise local benefits rather than the return on capital. The cooperative has proven to be a good form of conducting business. Decision-making has been collectively in the hands of the members. The co-op board actively leads the organization, but all members are kept up to date, and are continually informed about new projects. Members are also paid separate compensations for construction and maintenance work done. New co-op members are required to pay a membership fee and resigning members will receive the current co-operative payment.

Finland: The confederation of Finnish cooperatives was founded in 1899. Finland has the most number of co-operatives in the world having 5000 in 2015 which employ 17% of the population. The cooperative system started in Finland at the end of the 19th century at a time when they were struggling for independence. There were 103 renewable energy cooperative enterprises in 2015. Most of these co-operatives were founded 1990-2010, when outdated heating systems combined with the rising oil price relative to woodchips fueled the emergence of energy cooperatives. Entrepreneurs got help in the form of energy consulting and subsidies. In Central Ostrobothnia, there are 6 (active) energy co-operatives with 400 members.

Germany: By end 2017, there were 855 energy co-operatives organized in the German Raiffeisen and Cooperatives Association since 2006 involving 183.000 citizens as members. They owned €682m in capital brought up by members with an average share of €3,729. They have carried out total investment of €2.5bn. A majority of 81% of the co-operatives is active with PV electricity production due to a profitable system of feed-in tariffs until 2014. This business model is guaranteed for 20 years after investment. After changes in the Renewable Energies Act the founding of Energy Cooperatives decreased dramatically.

Ireland: There is a long history of agricultural cooperatives in Ireland since the 1900s. The Irish Co-operative Organisation Society (ICOS) is the unifying force for the Irish co-operative movement. ICOS member co-operatives and their associated companies collectively have over 150,000 individual members, employ >12,000 people in Ireland (a further 24,000 abroad) and have a combined turnover of almost €15 billion in seven core categories, namely: multipurpose dairy co-ops; livestock sector co-ops; store, trade and wholesale co-ops; service-related co-ops; community-oriented, culture and leisure co-ops; food, fishing and beverage co-ops; and advisory and education-related co-ops. Energy cooperatives in Ireland are in their infancy, and there are currently 4 in operation.

Sweden: Cooperatives have a long tradition in Sweden, and the 100 largest cooperative enterprises have sales of SEK 400 billion per year and 100,000 employees, making cooperation a key part of Swedish business life [9]. Some of the biggest cooperatives are to be found in the agricultural sector and even supermarket COOP is a cooperative still. There are several different types of cooperatively or co-owned energy production. For example: community cooperatives with private members; housing cooperatives and municipality ownership. Farmers also invest in e.g. small-scale wind- or solar-energy production. Renewable energy cooperatives are not as common as in e.g. Germany, and to be found most in wind energy [10]. Due to a growing interest in solar energy, some solar PV cooperatives have been founded [11]. Co-owned small-scale hydropower exists [12] and small-scale local district heating is owned by farmers, individuals or are co-owned by local stakeholders [13]. Most co-owned energy production in Sweden has the organisational form of an economic association [14].

1.2 Joint Venture

A joint venture (JV) is when co-ownership occurs between cooperatives, municipalities and energy companies. It may also be called a public-private partnership (PPP). Such models, while still rare, present unique opportunities for regional cooperation, not just in renewable energy production but also in grid ownership [7]. Public-private partnerships (PPPs) are also a good way to both maximise efficient use of local resources and promote community power. The JV mechanism entails the investment of funds by communities into a Special Purpose Vehicle which is partly owned by the community and a developer. Each shareholder thereby owns a portion of the RE infrastructure.

Finland: There are many practical examples of co-ownerships between municipalities and energy companies in Finland. However, these are in large part achieved with a jointly owned limited company and not via specific JV- arrangements.

Germany: Co-ownership between citizens and municipal or private companies in the renewable energy sector is established in many ways in Germany, depending on scale and structure of the project and the involved parties. Local public utilities and energy co-operatives often found a limited partnership (German: GmbH & Co. KG) where the co-operatives liability is limited to its investment to the project. Also, co-operatives with the municipality being a member are common, especially with biomass-based district heating in villages. When tendering for wind projects, bidders with a certain share of citizen investment enjoy advantages, however this has led to misuse in the early tendering rounds in 2017. In the federal state of Mecklenburg-Vorpommern, a citizens' and municipalities' share of 10% each is mandatory for wind energy projects since 2016.

Ireland: No formal regulations relating to joint ventures in Ireland currently exist. However, this model will become evident in Ireland following the initiation of the new Renewable Electricity Support Scheme (RESS), where from 2020 onwards developers will need a minimum of 20% community owned investment. An example of a PPP in Ireland is ESB Networks (the DSO) have a JV with Kingspan to supply a funded solar model.

Sweden: District heating companies in Sweden are in many cases municipally owned, often with a professional energy company as shareholder. Small-scale and cooperatively owned energy production (wind, solar, hydro, local district heating) have either the organisational form of economic association [14] or are shareholder companies.

1.3 Local Company/CLG

This scenario is generally initiated by a local entrepreneur, and is fully supported by the local community. The full support is evidenced with no planning objections.

Finland: This kind of business form is not known in Finland.

Germany: Outside of electricity self-consumption and grid injection by local entrepreneurs (most likely farmers and manufactures), community energy projects involving local private companies are largely built around district heating. In order to use heat from biogas CHP or excess heat from manufacturing processes, heating grid and operating company are developed in co-operation with the municipality and citizens.

Ireland: This model is evident in Ireland in the smaller RE installations. For example, a local farmer gets permission to connect 3 x 900kW turbines on his land. There are no objections from the local community and planning permission is granted.

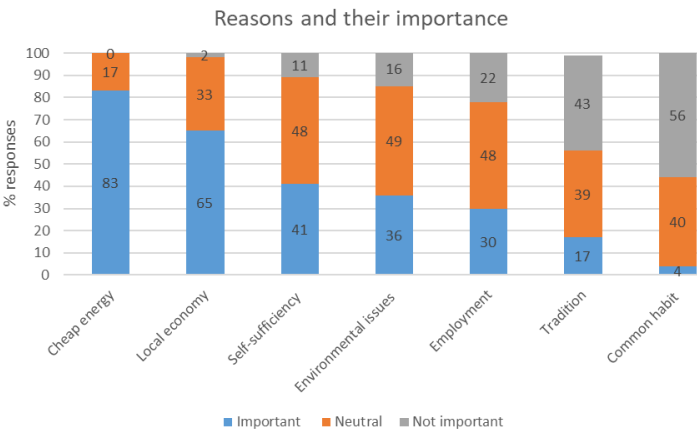
Sweden: Electricity generation, which is individually owned or owned by a local company supplies electricity for own consumption and sells overcapacity into the national grid. Heat supply from individually owned small-scale local district heating to residents and commercial facilities receives the support from the local community by the decision to connect to the heat distribution system. In Sweden, there is no legal enforcement possible to connect to such a system.

1.5 Municipal Utility Company

This scenario is when a municipality owns and operates an energy utility. Where municipal companies are established, openness and public answerability is essential to ensure transparency and accountability. Prior to privatisation, municipalities were at the centre of providing public services such as heat, electricity and water [7]. They should be able to play a leading role in generating local community power again, however it needs to be recognised that profits may be placed ahead of public interests.

Finland: There are currently over 400 energy utilities listed in the Finnish Energy Authority's Power Plant Register. Municipalities and cities are in many cases the owners of these energy companies - either totally or partially. However, the share of fully municipality owned energy companies has decreased recent years, and a number of municipalities have completely abandoned their holdings. Some municipalities do not perceive that operating an energy utility is their function, also economic reasons has affected the decision to abandon their ownership. However, most of the municipalities in Finland still want to hold on to their holdings because they see this as a way to ensure affordable energy to the residents.

The consulting and engineering company Pöyry conducted a survey targeting Finnish municipality leaders in regarding their motivation to maintain their shares in local energy companies:



Germany: Municipal utilities are very common in Germany. Following a privatisation trend in the 1980s and 1990s, the trend inverted and 284 companies in the German energy sector were (re-)municipalised between 2000 and 2017. As of 2018, the German Association of Local Utilities (VKU) counts 733 members active in electricity supply, 646 in heat and 574 in gas. They provided about 12% of the electricity in Germany and own almost 45% of the power distribution grids. Further, they operate 335,000 km of gas and 21,000k m of heating grids. Their organisational model differs depending on the type and scale of the business as well as the municipalities administrative capabilities: Municipal enterprises without an own legal entity (Eigenbetrieb) and public-law institutions (Anstalt öffentlichen Rechts) have low funding thresholds and are suitable for relatively small scale businesses, while limited liability companies (GmbH) are most popular. Public utilities of larger cities tend to be stock-companies.

Ireland: There is no evidence of this currently in Ireland.

Sweden: In Sweden, municipal utility companies are very common. In 2017, the 290 municipalities in Sweden had 449 municipally owned companies in the area of energy production and distribution. Most of them are district heating companies with or without electricity generation (CHP) and electricity distribution companies. These utilities can also own shares in hydro-, wind- and solar energy production. The organisational and business models are usually shareholder companies and trusts. Other forms are economic associations, partnerships and non-profit associations [15].

1.6 Strengths and Weaknesses of each Model

Model Type	Strengths	Weaknesses
Co-operative Model	Co-ops are voluntary and democratic, usually one vote per member Increase community acceptance Common economic, social and cultural goals	Raising capital can be challenging Lack of technical resources Lack of technical knowledge Lack of skills
Joint Venture	Partnership can de-risk a venture by providing grant and funding expertise Increase community acceptance	Cultural and social differences between the community and the operator Communication barriers between the parties Community gain definition can be blurred between parties
Local Company/CLG	Increase community acceptance	Raising capital can be challenging Lack of technical resources Lack of technical knowledge Lack of skills
Municipal	Partnership can de-risk a venture by providing grant and funding expertise	Cultural and social differences between the community and the operator
Utility Company	Increase community acceptance Can aim to share publicly owned land	Communication barriers between the parties Community gain definition can be blurred between parties

Source: Hanna, R. 2017, Community Renewables Innovation Lab, Energy Transition Platform Policy Briefing.

The following is a set of core recommendations for legal frameworks concluded in the publication Community Power [7]:

- Wide range of legislative and policy models needed for community ownership and participation in both energy production and consumption
- At least partial community ownership and effective community participation in commercial RE projects
- Governments need to establish legally binding targets for community power
- Community RE projects should not have to participate in competitive bidding processes
- Self-consumption should be the most incentivised method for community power projects
- Governments need to provide financial support (grant aid, cheaper credit etc.) to enable pre planning, planning works and grid connection
- Local supports needed for communities to assist with the navigation of regulations
- Community leadership needs to be taken into consideration for planning decisions
- Equitable grid access is needed for communities
- EU legislation needs to consider more support and promotion of community power projects

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Project Partners

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*Outside the NPA Programme area