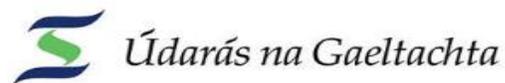


Local Energy
Communities:
Pathways in a Sustainable
and Renewable Future
November 11th 2020



How to Accelerate the Energy Transition in NPA Communities

Orla Nic Suibhne & Ian Brannigan WDC





WDC – about us

- WDC is an independent state agency with over 20 years experience of supporting the growth of the West of Ireland region through analysis, investment and regional based development (<https://westerndevelopment.ie/key-projects/european-projects/>)

By enabling the businesses and communities to access international expertise and finance the WDC has delivered a significant advantage to the West of Ireland region.

Since 2009 we have worked on 13 projects, valued at more than €26,774,414, with over 50 European partners. These projects have supported hundreds of regional jobs with 391 SME's directly supported here in Irelands West.

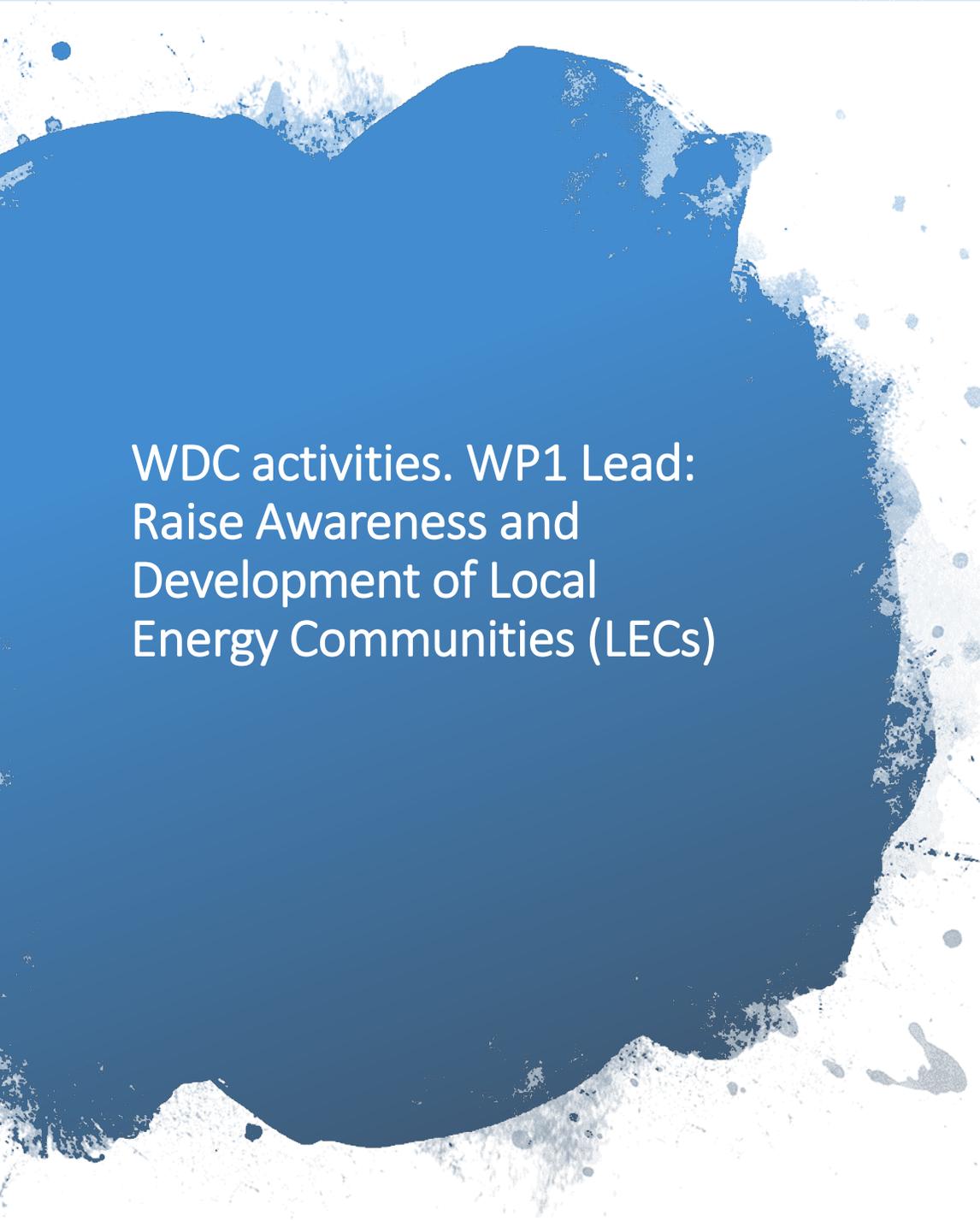
We have collaborated with partners from Northern Ireland, UK and Scotland, Nordic Countries and other EU countries such as Greece, Germany and Italy. These projects are bespoke and are developed by experts in their relevant fields to enhance the regions and countries economic and social opportunities.

More importantly these efforts have supported the delivery of 21 new products through innovation and transnational collaboration which in turn have supported the growth of key emerging areas such as the regional creative economy (which has grown in value to over €700 M), Renewable energy and the green economy.

Currently we are involved 6 initiatives in the areas of Creative Economy, Niche tourism, Blue economy and SME mentoring , all areas of high potential for the region in the coming years.

WDC and LECo

- Local Energy Communities (LECo) - <http://leco.interreg-npa.eu/>
- NPA 3-year project which commenced in August 2017, budget €1.9m
- The LECO project aimed to enable communities in the NPA region to become self-sufficient regarding energy
- the WDC engaged with numerous communities that were already Sustainable Energy Communities with SEAI: (<https://www.seai.ie/community-energy/sustainable-energy-communities/>).
- Through three feasibility studies procured; we could see the immediate benefit that it gave to the communities; one of the three communities are now proceeding to the planning phase for a micro hydro project
- The WDC were the work package leaders for WP1 and were responsible for two of the main outputs, Biz Model & Training platform:



WDC activities. WP1 Lead:
Raise Awareness and
Development of Local
Energy Communities (LECs)

- The LECo approach to local community energy focused on three main pillars.
 1. Engagement, raising awareness and best practice;
 2. Energy Modelling and scenarios and delivering specifically Community Sustainable Action Plans; and
 3. Development of 'Energy Village' Strategic Planning and implementation.
- Contribution to policy paper for Ireland (Complete)
- PESTLE analysis on the barriers to community energy projects (Complete)
- Report on ownership models for Community Energy
- Report on financing of community energy projects
- Study Tour to Germany:(40 community members)
- Energy Village feasibility studies:
- Preparation of factsheets & Best Practice case studies
- Online training platform
- Energy Efficiency Training Webinars

WDC and LECO

- The WDC were the work package leaders for WP1 and were responsible for two of the main outputs, Biz Model & Training platform:
 - the online training platform available at www.localenergycommunities.net. The online training platform hosts all of the final output reports from LECO, and any community that wants to look at a possible project can access all of the reports for free.
- Completed reports by the WDC include:
 - Barriers to community energy projects
 - Ownership options for communities
 - Finance options for community energy projects
 - Case studies of successful community energy projects
 - Feasibility studies of community energy projects
 - Policy for community energy projects in Ireland



WDC and LECO

- The WDC organised a large conference in Galway in December 2019 “Community Owned Energy in Ireland: Lessons Learned from Germany and Denmark”. The event was well attended with 150 people and 30 people also watched online as the event was live streamed. The event was chaired by Paul Kenny CEO of the Tipperary Energy Agency.

Enda Gallagher DCCAE Athenry December 2019

- EnergyPLAN training completed: In February 2019, over 15 community members learned how to model the energy systems in their communities by learning how to use the advanced tool EnergyPLAN. Robert Fischer from the Luleå University of Technology (a partner in LECO) travelled to Ireland to deliver the training, where he was assisted by Xavier Dubisson



WDC and LECO

- Study trip to Germany complete: The second study trip in October 2019 was a direct result of the success of the first one in 2018. The community members from the feasibility study communities attended the second trip to further the knowledge transfer.”.
- *Joe Lowe, Head of the Leitrim Local Enterprise Office, who transnational attended the LECO study visit to Germany on behalf of the Local Authority, stated “This was a fantastic opportunity to see how community owned energy projects can participate in the energy transition, and we are looking proactively at similar opportunities in Sustainable Energy Communities within the County*



WDC and LECO

- Fact Sheets – Available on online training platform

The infographic is divided into two main sections: Solar Panels (left, blue background) and Air Source Heat Pumps (right, teal background). The Solar Panels section features a central illustration of a smiling sun with a face, rays, and a red tongue, positioned above a house with solar panels on its roof. A DC/AC inverter and a battery are shown below the panels. Text boxes explain that solar photovoltaic panels capture and convert sunlight into electricity, and that residential PV can eliminate 3 to 4 tons of CO2 emissions per year, equivalent to planting trees. It also notes that solar panels absorb the sun's energy and convert it to DC electricity, which is then converted to AC by the inverter. The Air Source Heat Pumps section features a central illustration of a house with a family (a man, a woman, and a child) inside. A heating system is shown, including an outdoor heat pump unit, a heating controller, a hot water cylinder, and radiators/underfloor heating. Text boxes explain that air source heat pumps extract heat from the air and upgrade it to a higher temperature for use in the home. It also notes that they are environmentally friendly, reducing harmful emissions by 60-80%, and that the unit extracts heat at a low temperature from the outside air, which is then upgraded to a suitable temperature for central heating. Larger radiators or underfloor heating help increase the performance of the heat pump. Both sections include 'Worth noting' and 'Check list' sections, as well as logos for LECO (Local Energy Communities) and the Northern Periphery and Arctic Programme (2014-2020) under the European Union.

SOLAR PANELS

PHOTOVOLTAIC (PV)

What are they?
Solar photovoltaic panels capture and convert sunlight into electricity.

Why install?
Reduce your bills
Free power for 25+ years and protect against rising energy costs.
Environmentally friendly
Residential PV can eliminate 3 to 4 tons of CO2 emissions per year, equivalent to planting trees annually.

How do they work?
Solar panels absorb the sun's energy and convert it to DC electricity.
The solar inverter converts DC electricity from your solar modules to AC electricity, which is used by most home appliances.
Electricity flows through your home via a meter.
Excess electricity produced by your solar panels is fed to the electric grid or stored in a battery.

Worth noting:
Solar PV panels produce electricity, whereas Solar Thermal panels heat hot water.
You do not need direct sun light to generate electricity however the amount of energy generated by your panels will depend on a range of factors including the hardware chosen, size of system, the geographical location and the direction in which the panels are installed.

Check list:
Make sure your site is suitable.
Check if there are any grants available.

AIR SOURCE HEAT PUMPS

What are they?
Air source heat pumps extract heat from the air and upgrade it to a higher temperature to be used in the home.

Why install?
Environmentally friendly
Reducing harmful emissions by 60% - 80%.
Running costs much less.
Costing up to half as much per unit of heat produced.

How does it work?
The unit extracts heat at a low temperature from the outside air.
Using electricity, it then upgrades the heat to a temperature suitable for central heating.
Larger radiators or underfloor heating help increase the performance of the heat pump.

Worth noting:
Air source heat pumps are increasingly popular for domestic homes, but water and ground source heat pumps also exist. Find out which technology is best suited to your home.
Heat pumps require electricity to work.
Good insulation and draft proofing is advised to increase the performance of your heat pump system.
The main system includes an outdoor unit and a large indoor storage cylinder.

Check list:
Make sure your site is suitable.
Check if there are any grants available.

LECO
Local Energy Communities

Northern Periphery and Arctic Programme
2014-2020

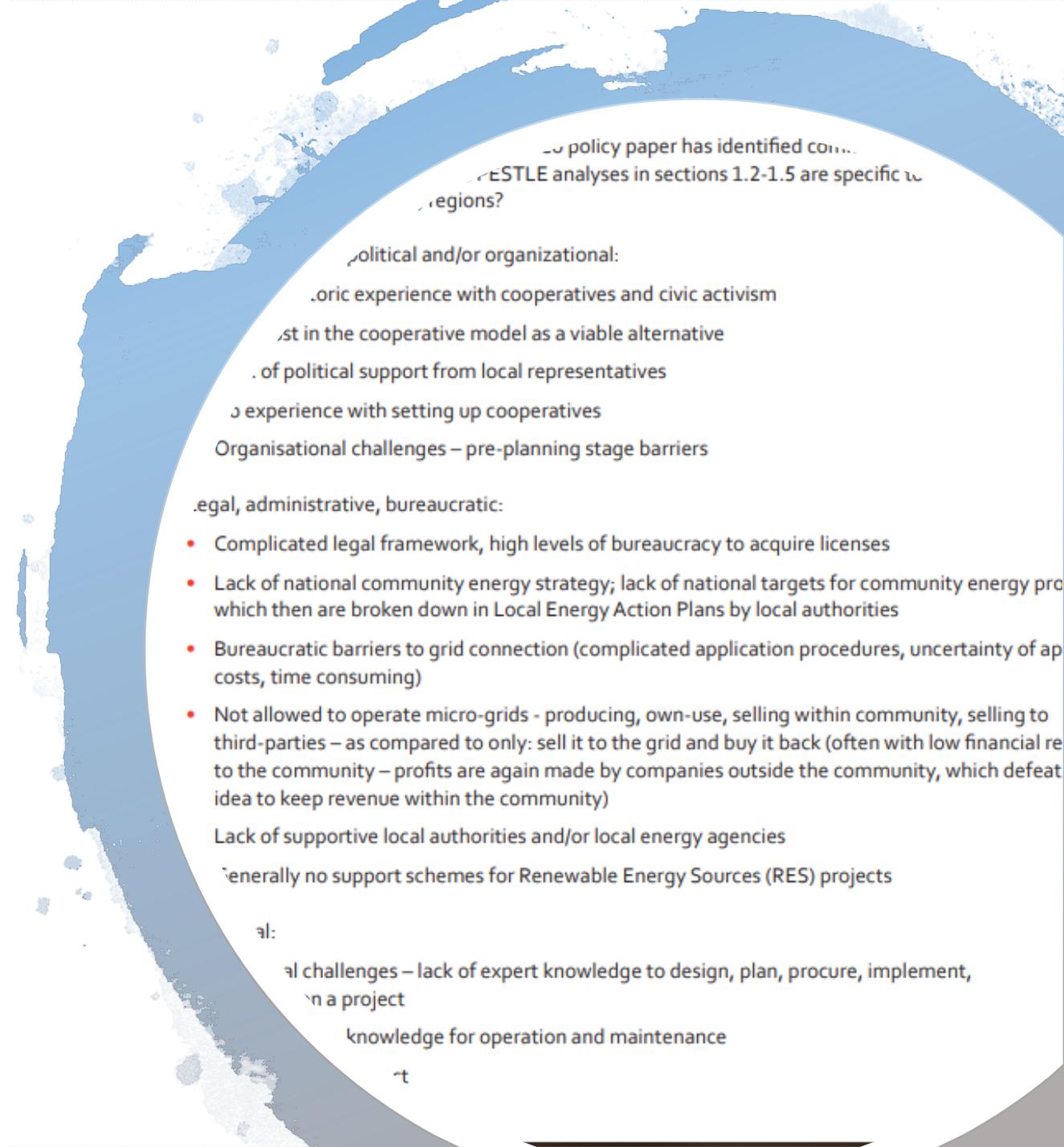
EUROPEAN UNION
Investing in your future
European Regional Development Fund

LECo – Raising Awareness Events & Dissemination

- National Bioenergy Conference
- Westport Energy Awareness Event
- Community Energy Tour Erris
- LECo Project Launch
- North Leitrim Energy Awareness Day
- Climate Change Conversations: Carrick on Shannon
- National Renewable Energy Co-op Conference (
- Ennis Energy Awareness Event
- Re-Direct Conference Claremorris
- An Taisce Climate Ambassador (ALL YEAR)
- two study trips to Germany with participant communities identified from each partner region. In 2018 participants from community energy groups visited the Rhein-Hünshuch District and in 2019 the study tour took place in the Aller-Leine-Tal region. During the study trip the participants visited regions of best practice in local community energy and met with experts both formally and informally

Engagement and Co-analysis of need

- A core approach of the LECo project was to initiate engagement with relevant stakeholders. This involved LECo partners working with local inhabitants, community energy cooperatives, local energy agencies, social enterprises and local authorities as well as relevant dissemination of information targeting their specific needs. These initiatives included organising workshops/seminars, completing surveys and conducting PESTLE analysis in order to identifying barriers.



... policy paper has identified com...
... PESTLE analyses in sections 1.2-1.5 are specific to...
... regions?

... political and/or organizational:

- ... oric experience with cooperatives and civic activism
- ... st in the cooperative model as a viable alternative
- ... of political support from local representatives
- ... 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 pro... which then are broken down in Local Energy Action Plans by local authorities
- Bureaucratic barriers to grid connection (complicated application procedures, uncertainty of ap... 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 re... to the community – profits are again made by companies outside the community, which defeat... idea to keep revenue within the community)

Lack of supportive local authorities and/or local energy agencies

... generally no support schemes for Renewable Energy Sources (RES) projects

... al:

- ... al challenges – lack of expert knowledge to design, plan, procure, implement, ... on a project
- ... knowledge for operation and maintenance

... t

LECO – Potential value

- Electricity markets are changing in Ireland
 - Auction based in line with Europe
 - Renewable Electricity Support Scheme (RESS Consultation)
- Communities can now be involved!!
- Online platform available
- Network developed – transnational
- Fact sheets / Model business plan pro bono access
- Biz model mapped out and available
- SWOT Analysis
- Contacts and context to move communities forward



The Project Partners

Centria University of Applied Sciences (Lead Partner) (FIN), Lohtaja Energy Cooperative (FIN), Western Development Commission (IRL), The Gaeltacht Authority (IRL), Luleå University of Technology (SWE), Jokkmokk Community (SWE), Arctic University of Norway (NOR), Renewable Energies Agency (GER)

