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# LECo

## Local Energy Communities



**How to accelerate the energy  
transition for communities:  
A handbook for Finland**



# LECO

## Local Energy Communities

The LECO (Local Energy Communities) project supports small municipalities and communities in the partner regions of Finland, Ireland, Norway and Sweden to implement energy initiatives. This handbook intends to guide energy initiatives from the idea to conclusion. It includes links to important sources and recommendations for citizen engagement with policy development.

This information has been developed by LECO project partner LTU (Luleå University of Technology). Adaptations for Finland have been made by project partner Centria University of Applied Sciences.

### MAKE YOUR PROJECT WORK

Energy efficiency and small-scale renewable energy projects are typically started by an association of energy users or producers in a community in order to either provide energy that involves lower and stable energy costs or the possibility of additional future income.

A common feature of these initiatives is that they benefit the community and create economic cycles where the money does not unilaterally flow out of the area.

### Get your project started

Linking your energy efficiency or renewable energy project idea with energy strategies of the country and region will ease permitting and funding procedures. A clear vision on how your project can benefit households and the local community will increase interest and ensures active participation of community members. Engaging members in activities including public meetings, interviews and discussions with key people in the community on renewable energy possibilities will assist this

process. Visiting similar initiatives of other communities can also lay the foundation for a new community owned and led organization, which in Finland typically takes the form of an economic association (*Fi=taloudellinen yhdistys; osuuskunta*) or an limited company (Ltd). Once community members and all stakeholders are on board and organized and the acceptance of the general public is attained the idea can be launched. Aims and objectives must also be agreed upon. This will involve clarification of expectations, delegation of roles and responsibilities within the organization and in the project management. The next step is to make the project work.

### Planning, permissions and land use

Acquiring regulatory consents, such as building permission, grid connection permit or an Environmental Impact Assessment (EIA), can be exhausting, time-consuming and costly. The municipality's technical office (*Fi = Kunnan tekninen virasto*) shall be the first point of contact for information about permission and registration requirements. Depending on the chosen technology, capacity, visual design, existing detailed and land use plans, and other factors the planning officer can determine which regulations to apply and if more extensive permissions from the County Administrative Board are required.

The municipal energy advisor / local energy agency / energy utility and/or experienced installers are also familiar with required permissions for energy projects. Changes on existing buildings, e.g. increasing insulation and thus improving energy efficiency often requires a planning permission for minor construction (*Fi = toimenpidelupa*). Depending on the extent of the modification, the authorization procedure is divided into three levels: building permit, action permit and notification procedure. The authorization procedure required for struc-

tural modifications and the installation of energy systems varies by municipality. For instance, installation of solar panels may require authorization in certain conditions. For further information on the necessary permits and the documentation required can be obtained from the municipal technical office. Additional information about permissions can also be found at Lupapiste: <https://www.lupapiste.fi>

The construction of an industrial size wind turbine always requires a building permit according to the Land Use and Building Act (*Fi = Maankäyttö- ja rakennuslaki*). However, there are planning exemptions in respect of microgeneration technologies in certain circumstances. The potential building permit is handled by the municipality concerned.

An Environmental Impact Assessment (EIA) procedure is mainly applied in larger scale wind power projects. However, the EIA procedure can also be required in smaller wind power projects if the authority considers that the environmental risks are elevated. The Environmental Impact Assessment procedure is supervised by the Centre for Economic Development, Transport and the Environment (*Fi = ELY-keskus*).

A more detailed description of the required permits and the wind power development process can be found at: [http://www.ym.fi/fi-FI/Ajankohtaista/Paivitetty\\_suunnitteluopas\\_tuulivoimarak\(41181\)](http://www.ym.fi/fi-FI/Ajankohtaista/Paivitetty_suunnitteluopas_tuulivoimarak(41181)). In the early planning stage some indication of the available wind potential can be determined using the Finnish Wind Atlas. For larger wind power projects, however, more accurate wind measurements are needed.

The construction of a small hydro power plant requires a permit according to the Water Act. License applications are processed by the Regional State Administrative Agencies (*Fi = Aluehallintovirasto*).

- **Finnish Wind Atlas:** <http://www.tuuliatlas.fi/fi/index.html>
- **Centre for Economic Development, Transport and the Environment:** <https://www.ely-keskus.fi>
- **Regional State Administrative Agency:** <http://www.avi.fi>

## Financing the project

A project plan, a functioning organization structure and project management, references from previous successful projects are important elements in a funding application.

Funding options may be available from ongoing government programmes for your project type and size and it may be useful to rank them after examining the best match of funders criteria. Funding can also be secured from initiatives for rural development, EU structural funds, regeneration of areas, improvement of housing, charitable trusts and foundations, the lottery and private sector finance.

Government energy aid is available for the implementa-

tion of energy audits, investments that conserve energy and investments related to the use of renewable energy as well as for European Skills, Competences, Qualifications and Occupations (ESCO) projects. The low-carbon economy is promoted by structural funds. Business Finland will process all the aid applications.

**Business Finland; Energy aid:** <https://www.businessfinland.fi/en/for-finnish-customers/services/funding/sme/energy-aid>

## Implementing and completing the project

Once all permissions and declaration requirements are fulfilled, a suitable qualified installer is procured and awarded with the project contract. They will deliver and competently install the system. Ideally they will also provide comprehensive documentation of the system, training for operation and maintenance, which can be carried out by community members. The system is tested and commissioned. Evidence of completion is submitted to funding providers. Milestones and finalization have been celebrated and communicated.

The project and all the experiences with it are evaluated and documented in a final project report. Highlighting lessons learned, expected and unexpected problems and benefits, achievements and other – hopefully mostly positive experiences - is important for the community and the members of the cooperative. After successful implementation of the first project, new ideas will evolve and new projects will follow.

## ORGANISATIONAL FORMS FOR SMALL-SCALE ENERGY PROJECTS

Such projects are typically owned and operated by a cooperative or a community enterprise, which in Finland takes the legal form of an economic association (*Fi=taloudellinen yhdistys; osuuskunta*) or an limited company (*Ltd*). Aspiring and existing entrepreneurs can seek free advice from the Finnish Enterprise Agency in their area. The Enterprise Agency is a nationwide network of business advisors and experts.

**Finnish Enterprise Agencies:** <https://www.uusyrittyskeskus.fi>

**Cooperative institutions and associations:**

- **Pellervo - Osuustoimintakeskus:** <https://pellervo.fi>
- **Pro-Agria:** <https://www.proagria.fi>
- **Ruralia Institute of the University of Helsinki - The Co-op Network Studies (CNS):** <https://www.helsinki.fi/fi/ruralia-instituutti>
- **Martat:** <https://www.martat.fi>



## TECHNOLOGIES AND PROJECT TYPES

Table: Projects for energy efficiency, renewable electricity and heat, and bioenergy supply:

Renewable electricity	Renewable heating/cooling	Renewable fuels	Energy efficiency
Wind energy (onshore)	Domestic solar thermal heat (hot water and heating)	Biodiesel	Improving building envelopes
Wave and tidal energy	Large solar thermal heat integrated with DH	Bioethanol	Applying advanced building standards
Small (domestic rooftop) solar PV or small ground-mounted.	Solar thermal cooling	Plant oil	Residential buildings
Large solar PV (roof- or ground-mounted)	Ground source heat-pumps and floor heating systems	Forestry residues; wood-chips; Pellets; waste-wood	Public buildings Commercial buildings Apartment buildings
Small hydropower	Water heat-pumps (lakes, rivers, ocean)	Peat for District Heating boilers; peat for residential use.	
Biogas electricity or CHP.	Air heat-pumps		Street lighting
Wood-fired micro CHP.	Wood-fired boilers Peat-fired boilers		
Local district heating CHPs: • Biogas-CHP • Wood-fired-CHP • Peat co-fired-CHP	Biogas, biodiesel-fired boilers	<b>Transport sector:</b> Focus on walking, cycling, and public transport. Biogas for busses, etc. Electric vehicles, charging stations	
Micro-grid and electricity storage: • Behind the meter • On the grid	Local district heating boilers: • Biogas • Wood-fired • Peat co-fired		

### Improving building envelopes and replacing heating systems:

- **Energiatehokas koti:**  
<https://www.energiatehokaskoti.fi>
- **Energiatehokkuussopimukset:**  
<http://www.energiatehokkuussopimukset2017-2025.fi>

### Hydropower:

- **Pienvesivoimayhdistys ry:**  
<http://pienvesivoimayhdistys.com>  
<https://www.facebook.com/pienvesivoima>

### Solar energy:

- **Aurinkoteknillinen yhdistys ry:**  
<http://www.aurinkoteknillinenyhdistys.fi>

### Wind energy:

- **Tuulivoimayhdistys:**  
<http://www.tuulivoimayhdistys.fi/tietoa-tuulivoimasta/tietoa-tuulivoimasta>

### Bioenergy:

- **Bioenergia ry:** <http://www.bioenergia.fi>
- **Lämpörittäjyydestä:** <http://www.lampoyrittajat.fi/L%C3%A4mp%C3%B6ritt%C3%A4jille>

### Biogas:

- **Suomen biokaasuyhdistys:**  
<http://www.biokaasuyhdistys.net>
- **Suomen kaasuenergia:**  
<https://suomenkaasuenergia.fi/maakaasu-ja-biokaasu>

## CITIZEN ENGAGEMENT IN POLICY DEVELOPMENT

Within the context of a low carbon energy transition, new roles for local communities are emerging; transitioning them from passive consumers to active prosumers with local generation, demand response and energy efficiency measures possible. Community members with interest and enthusiasm for energy initiatives can engage in national policymaking, regional and municipal development planning processes through activities including participation in public consultation, public hearings, seminars, road-shows, writing submissions to local and central authorities, letters to media and contributions in social media forums. Local energy advisors and energy offices are important stakeholders who engage directly with citizens and SMEs. Individual citizens and community organizations are invited to participate in such activities. As in all Local Authority planning, citizens can engage in the development and updates of such local energy plans.

### Recommendations for policy adaptations and engagement:

- Establish local energy agencies and mandate them to provide energy advice and practical support in energy project identification and development.
- Reduce bureaucracy in application procedures for the different support mechanisms.
- Ensure and improve long-term policy and financial security for community energy investments.
- Develop a more holistic and broad approach that ensures that all relevant sectors, including efficiency in buildings and industries, electricity and heating as well as transport sectors are receiving adequate support.
- Biogas development requires more attention.
- Legally enforcing direct and long-term community financial benefits from wind-power developments with Denmark and Germany as examples would increase acceptance (reducing NIMBY effects) of such developments.
- Develop more long-term perspectives, strategies and plans on regional or county level, which are to be adhered to even after changes in political majorities. These shall also guide municipal planning and regional authorities coordinate and monitor.
- Provide more long-term financial support to municipalities to build and retain human resources enabling the development of long-term local strategies and the implementation of energy projects.

## OTHER LINKS

- **Motiva:** <https://www.motiva.fi>
- **Työ- ja elinkeinoministeriö (Energiatuki):** <https://tem.fi/energiatuki>
- **Energiavirasto:** <https://www.energiavirasto.fi/energiatehokkuussopimukset>
- **Teknologian tutkimuskeskus VTT Oy:** <http://www.vttresearch.com>
- **Lähienergialiitto:** <https://www.lahienergia.org>
- **Energiateollisuus:** <https://energia.fi>
- **HINKU – Kohti hiilineutraalia kuntaa:** <http://www.hinku-foorumi.fi>
- **FISU - Finnish Sustainable Communities:** <http://www.fisunetwork.fi>



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## Project Partners

Centria University of Applied Sciences (Finland),  
Western Development Commission (Ireland), Luleå University of Technology (Sweden),  
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The Gaeltacht Authority (Ireland), Lohtaja Energy Cooperative (Finland),  
UiT – the Arctic University of Norway (Norway)

\*Outside the NPA Programme area

