

Interreg



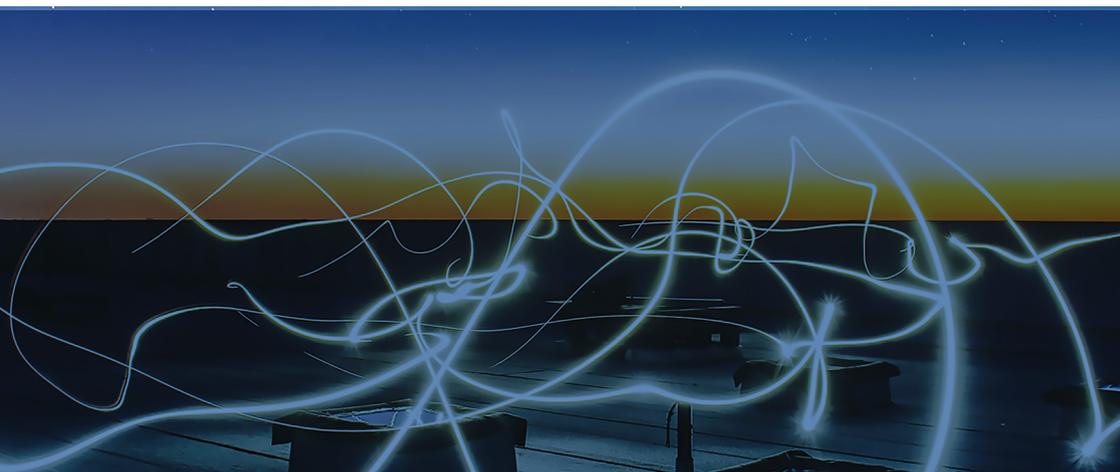
EUROPEAN UNION

2 Seas Mers Zeeën

LECSEA

European Regional Development Fund

**THERE IS
A FUTURE
FOR ENERGY
COMMUNITIES**



LECSEA is an Interreg North Sea Region funded project by 4 countries and 9 project partners

Intercommunale Leiedal (BE)

CD2E (FR)

Essex County Council (UK)

Gemeente Breda (NL)

Universiteit Gent (BE)

Pas-de-Calais Habitat (FR)

POM West-Vlaanderen (BE)

West Sussex County Council (UK)

WVI (BE)

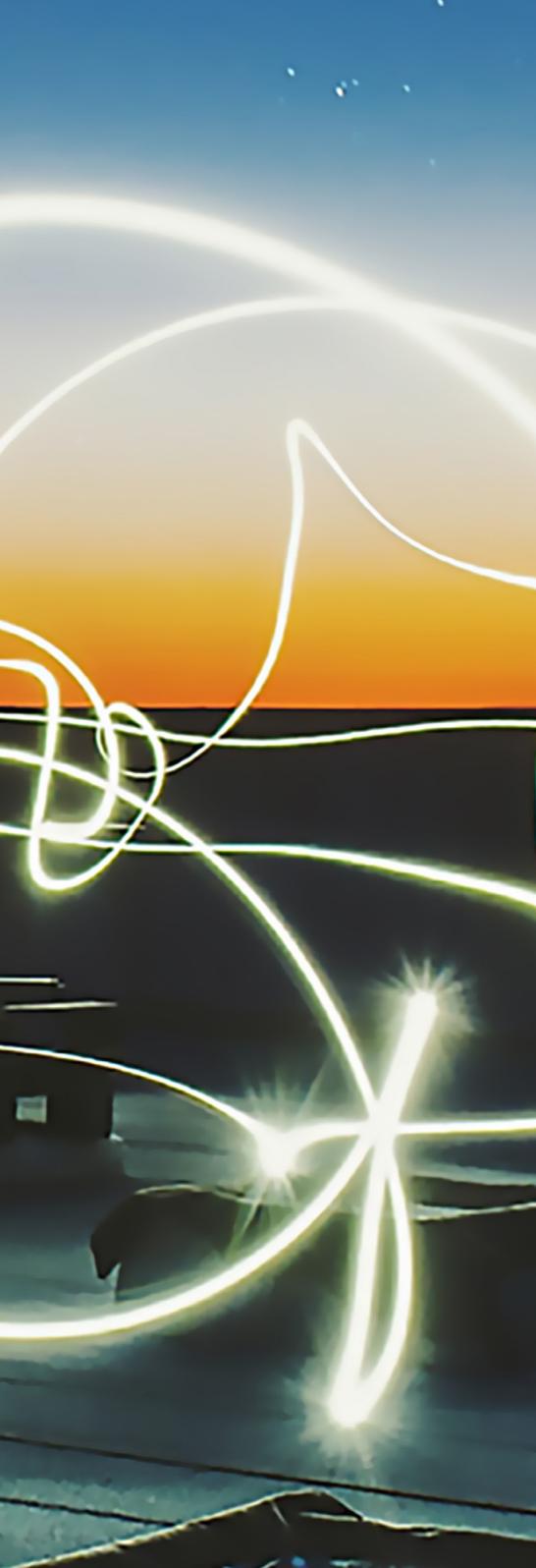


INTERREG 2 SEAS REGION

 Regions within
the NSR programme area







INTRODUCTION

We are facing an energy transformation towards a sustainable future. We all know that the energy issue is key in the light of carbon reduction, climate mitigation, energy affordability and our dependency on fossil fuels. Things are moving, and the EU has now enabled energy communities to be set up. They organise collective energy actions that will help open up pathways for a clean energy transition, while empowering citizens, businesses, public authorities and other organisations. At the same time, they have the potential to provide direct benefits to the stakeholders by advancing energy efficiency and lowering their power bills.

Within the Interreg-funded LECSEA project, the partners have set up pilots and defined opportunities and barriers for these energy communities in order to unlock extra potential of sustainable energy shared in energy communities. Through this project brochure, we are happy to share our lessons learnt. Also check our project website www.lecsea.eu.

Let's pave the way for a sustainable and shared energy transition.

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WHAT HAVE
WE DONE AND
WANT'S IN IT
FOR YOU?

LEARN

The LECSEA Resource Database offers legal, technical, organisational and financial information on energy communities, tested and tailor-made tools, services and methodologies to enable facilitators and different target groups. Also check the Energy Communities Repository of the European Commission (urban areas) or the Rural Energy Communities Advisory (rural areas).

Studies, reports, benchmarks, good practices...

- policy benchmark Belgium (Flanders), France, the UK, the Netherlands and Ireland
- most prominent barriers, opportunities and best practices
- review of tools and methods for emerging energy communities
- tools and methods to create business models for energy communities

Language

Resource type

Topic

Applicable in



Energiedelen Vlaanderen
Energiedelen Vlaanderen is a website by REscoop Vlaanderen with tailor-made information and tools for local authorities, SMEs, citizens, schools ... who are interested in setting up an energy community...



The Energy Communities Repository website
The Energy Communities Repository is an initiative on behalf of the European Commission to assist local actors (including citizens, local authorities, and businesses) with setting up and advancing cle...



Tenacity pays dividends for RE/SOURCED
This article sets out the regulatory challenges faced by the RE/SOURCED project team and the steps taken to overcome them. It highlights how regulations at a Member State level may not always align wL...



Most important decisions to enable smart local energy systems
The UK does not have the appropriate policy, institutional and regulatory framework to realise the technical, economic, and societal potential of SLES. This report is a summary of the findings from a s...



REPORT









LECSEA Resource Database

DO: PILOT PROJECTS

Energy communities and businesses

Energy sharing at 5 WVI business parks

Flemish intermunicipal organisation WVI is joining the transition to a decentralised, renewable, efficient and sustainable energy system. One of our spearheads is working on renewable energy at business parks. Within the Interreg 2 Seas project LECSEA, WVI is encouraging companies at five existing business estates to install solar panels. For each business park, we identify interesting roofs where solar panels have not yet been installed. We then find out which activity is carried out by the corresponding company. 221 businesses are subsequently contacted by the engineering office appointed to help them install solar panels. They receive a solar panel feasibility study if they wish to co-operate and share their energy data and energy price with us. All in all, studies for solar panels have been prepared for 30 businesses, based on which most companies have already requested quotes to install PV panels on their roofs.

WVI also recognises its role as organiser of energy communities and energy sharing on and around the business parks. Within LECSEA, WVI is exploring the possibilities of energy sharing and energy communities. Energy data analysis from the energy



monitoring platform in Veurne reveals that 75% of the power injected by 4 businesses may be absorbed by the 6 businesses that do not have solar panels. The remaining injection may be taken up by the 24/7 company at the business park. According to Flemish legislation, energy sharing through an energy community must be done free of charge, the point of view being that anyone who co-invests, is entitled to their share of the energy generated. Establishing and managing an energy community, however, is not free of charge. As a result, we focus on person-to-person energy sales between two businesses. WVI analyses this potential to share energy and connects both parties

Residual heat for Suikerpark Veurne

Thanks to the European Interreg 2 Seas project LECSEA, as landowner of the Suikerpark estate, WVI is able to explore the 'missing link' between the residual heat source at PepsiCo and the residential area beyond.

WVI will make an investment into part of a heat network at Suikerpark in the city of Veurne, Flanders. Surplus heat produced by one company at the business park will be transferred to a new residential area. To manage this process, a new and innovative way of collaborating resembling an EC will be created. Setting up an energy community to share heat with households through the heat grid in Veurne is not possible for several reasons. On the one hand, waste heat (heat surplus) is not considered renewable

energy; on the other hand, the energy cannot be shared for free because the investment in the heat grid and disconnection must be recouped. Parties active in the energy sector such as Fluvius and Noven must not participate in an energy community, and large companies such as PepsiCo can only participate in a citizen EC without having a say themselves.

The innovative aspect lies in the use of surplus heat from private partners, making things run



WVI Suikerpark - Heatnet



Tubes heatnet Suikerpark Veurne

fully on sustainable energy with a significant CO₂ reduction compared to the use of fossil fuels (an estimated 1,456 tonnes of CO₂ reduction in the next 10 years).

” *Europe wants all member states to be climate neutral by 2050. In order to achieve that goal, we will have to try and make maximum use of sustainable heat. As a Flemish network operator, Fluvius wants to take its responsibility to realise even more public heat networks.*

Frank Vanbrabant, CEO Fluvius

The public-private collaboration between businesses, network operator Fluvius, heat supplier Noven, WVI and the city of Veurne is equally innovative. A legal investigation into the workings of such a collaboration will be conducted during this project.

Finally, WVI started an investigation into a possible expansion of said heat network. An

inventory of heat consumers was made, on the basis of which several scenarios were worked out. Upon consultation with the stakeholders, Veurne city council, PepsiCo, Noven, Fluvius and WWI, it was decided to have a closer study of a network expansion towards the hospital site and business park. The hospital site is also home to technical school VTI and a residential care centre, who, together, have an interesting heat demand. In addition, three food companies were detected that use heat between 70°C to 80°C in their production processes. An additional business along the route was also included in the exercise. Noven and Fluvius will now figure out whether a viable business case can be made based on the case study.

Investment: € 750,000

EU funding: € 450,000

Heat from drinking water pipe at De Voerman (BE)

At the De Voerman site in Anzegem, Flanders, regional public developer Leiedal is setting up a gas-free district in a very unique way. What is most particular about the project, is that both heating and cooling will be harvested from the drinking water mains (run by De Watergroep) passing along the site.

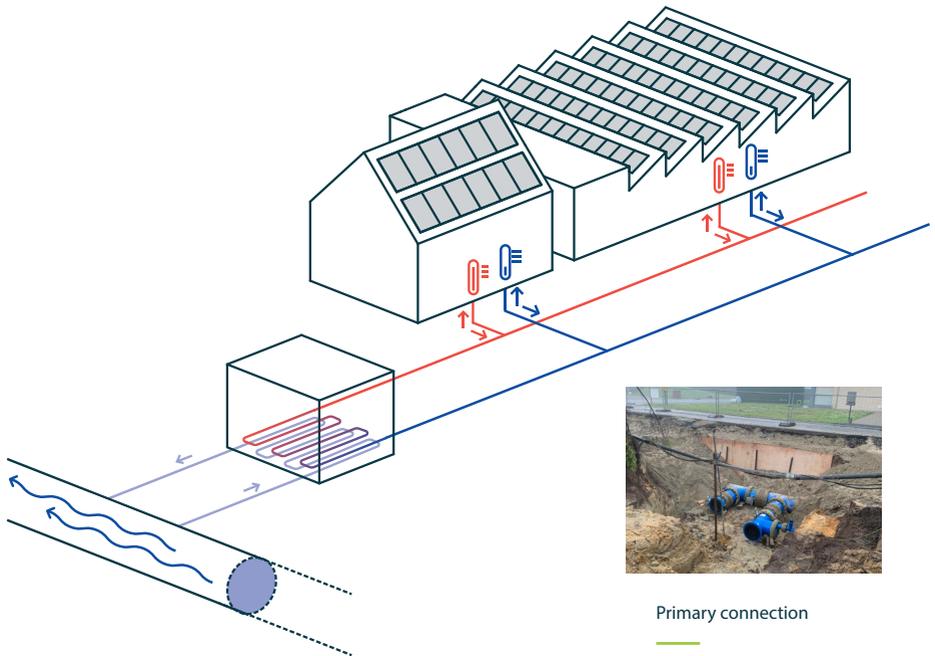
From that main drinkwater pipe, Leiedal will extract heat in winter and cold in summer for a new neighbourhood with 30 dwellings and about 10 adjacent SMEs.

” *We see this pilot really as a way of gaining experience with larger heat networks, and as such actively promote this concept with project developers.*

Brecht Vermeulen, president De Watergroep

” *This heat exchanger allows us to extract approximately 4 degrees from the streaming drinking water.*

Bert De Winter, director
of innovations De Watergroep



Primary connection

The realisation and management of this primary circuit will be done by De Watergroep, making carefully sure the heating infrastructure does not compromise the drinking water quality. The 'secondary circuit' involves a neutral-temperature heat network (10-15°C) with decentralised heat pumps at customer side.

Following a feasibility study, more detailed technical and financial calculations were made concerning the secondary heat network.

Investment: € 312,000

EU funding: € 187,200

Ostend Science Park

Within the LECSEA framework, POM West Flanders is working on the realisation of 'Business Parks of the Future'. When the European Commission launched the Clean Energy Package with the innovative concept of local energy communities, it raised a lot of expectations. Could an LEC be a key component of the business park of the future?

A feasibility study was carried out on an energy concept with collective components that was developed earlier in 2020 for Ostend Science Park (OSP), the park still being under development.

The following questions were addressed:

- What are the technical, legal and financial conditions for the realisation of the energy concept?
- Does the establishment of an LEC offer advantages as to the realisation of the energy concept?
- What role could an ESCO play in all this?

POM distilled 11 lessons learnt..

Based on the study, the OSP Board of Directors decided not to opt for the collective scenario, but to include higher requirements in the conditions of sale regarding gas-free HVAC, energy monitoring and renewable energy production. As an LEC would result in additional costs and restrictions without generating additional benefits, none shall be established (for now).

Ostend Science Park - copyright Ghent University



In December 2022, the businesses at OSP decided collectively to connect to the same energy management platform with support from POM, aiming to gain more insight into their own energy consumption. OSP, meanwhile, aims for a better understanding of the science park energy needs on the whole, the potential of renewable energy production and the energy sharing potential between businesses at the park.

From the research at OSP and the learning points from the pilot projects of the other LECSEA partners, it appears that setting up an LEC at a Flemish business park with mainly SMEs, where each stakeholder has equal voting rights and the right to leave the community at any time, is anything but easy. The LEC business case needs to be very attractive indeed, if it is to overcome the differences in motivation, commitment weaknesses, the requirements in terms of legal organisation of the community and the fact that, for many businesses, energy supply is not considered one of their core activities. The question then arises whether the chances of success for an LEC might be higher if there is a link between the potential participants. POM West Flanders is further developing this track.

Together with corporations 't Werkpand and OCK, POM manages a patrimony of buildings consisting of offices and start-up infrastructure. A collective energy management system (EMS) and mapping of the energy needs of this patrimony was started in early 2023. At the same time, the feasibility of renewable energy production by solar panels is being charted. The EMS will allow to simulate the impact of PV and map the potential of energy sharing within the patrimony.

Hazeldonk and Hoogeind

The LECSEA Breda project is based on collected and analysed spatial, real-estate and energy data and maps the potential energy transition for every big business park in Breda, The Netherlands.

It makes clear what we can do individually, saving energy to minimise energy consumption and using solar panels to maximise energy production, and what can we do together.

A Green Deal and Breda Energy were set up to facilitate this process for the business park associations. The main approach is to use sustainable energy where it is produced to prevent congestion on the grid.

To that end, the Breda municipality and Platform BV Breda facilitated business improvement districts and business park associations and asked them to take action by delivering feasibility studies based on all market initiatives in their area.

Two business cases at Hoogeind and Hazeldonk were accepted by the initiators. However, electric grid congestion due to the first-in-first principle by grid operator Enexis has changed both cases.



Hazeldonk parking

Nevertheless, the business associations' ambitions are improving. In particular, LCHM (Logistic Centrum Hazeldonk Meer) now has a monitoring system and is looking for investments like a battery and setting up an energy community.

Re-Energise Manor Royal

LECSEA has enabled companies located at the Manor Royal Business District in Crawley, West Sussex, to form a local energy community and work together on new, clean energy projects.

Manor Royal is the largest business park in West Sussex and home to approximately 700 businesses that employ 30,000 people.

Re-Energise Manor Royal, which launched in March 2023, will increase the amount of clean energy generated, shared and used by businesses. It will reduce their energy costs and carbon emissions, helping them towards net-zero operation.

The community's first project, a 71kW solar PV installation, has been approved and a pipeline of new solar PV projects is under development to secure a long-term income for the community and enable it to provide other benefits, including:

- peer-to-peer energy trading.
- aggregating locally generated solar power to secure a higher price on the energy market.
- investing in battery storage technology and offering 'grid services' to the wider electricity network to generate additional revenue.
- collectively buying energy services, such as maintenance contracts for energy systems, to deliver better value for money.
- providing specialist advice and support to businesses.

Re-Energise Manor Royal has been set up as a Community Benefit Society and operates on a not-for-profit basis by reinvesting the financial surplus it makes from selling energy and other services into new energy projects.



Manor Royal BID

Energy Communities and public authorities

Drilling for heat at Wevelgem Campus

The Campus project site is located in the centre of the municipality of Wevelgem (Flanders) and contains several public services such as an primary and secondary school, a preschool, a residential care home and a so-called social house. Regional developer Leiedal has guided the process of building a central Borehole Thermal Energy Storage (BTES) system for a renewable energy community. The system is being installed underground on public domain. A total of 112 boreholes are drilled, each 65 meters deep. Geothermics will be used to provide heating and cooling for the existing and planned buildings.

This project has public and semipublic partners join forces in a unique collaboration. Using fossil-free geothermal energy, they will be heating and cooling existing and new



buildings collectively at the Campus site. Heat in winter and cooling in summer, pumped up from 65-meter boreholes in the ground. Low-temperature district heating will heat and cool some of the larger buildings.

” *Innovative heat networks such as this are important steps towards a climate-neutral region.*



120 drillings up to 60 m

Leiedal carries the investment cost of €457,000, 60% of which is subsidised by Europe through the LECSEA project, and remains the owner for a minimum of 5 and a maximum of 12 years. During that time, the regional developer will draw from its knowledge and expertise to help establish a real LEC, locally embedding the heat network's benefits to the fullest. The Wevelgem municipal council and public welfare organisation have made the grounds for the BTES field available to Leiedal by way of surface rights. The social house, care home and preschool will connect to the BTES systematically. As a BTES field can provide heating and cooling for many decades and is even extendable, buildings that are left out for now may still use the technology at a later stage.

The role of the Leiedal energy brokers proved particularly important to gather, inform and unburden the stakeholders involved. Leiedal will engage an Energy Service Company (ESCO) to ensure central management of the BTES system, to unburden the project partners financially and technically, and to gain efficiency and obtain an optimisation in the heating and cooling of the targeted buildings.

Investment: € 457,000

EU funding: € 274,200

Energy Communities and local citizens

Essex

As part of the LECSEA partnership, Essex County Council collaboratively developed a model of community energy group mentorship. This model endeavours to empower communities to spearhead grassroots, bottom-up, locally sensitive responses to the climate and energy crises facing Europe, while also catalysing wider equitable outcomes in communities in areas such as health, economic development and civic pride.

Four groups have currently arisen from the mentorship funded by LECSEA, with each group taking different approaches to local and national net-zero ambitions in addition to levelling up communities: from locally led retrofit services and energy assessments, through community championed and partly funded school decarbonisation, to local area energy planning on how to decarbonise heating in off-gas villages. What each approach has in common, however, is the belief in the power of community energy groups to transform communities for the better from within those very communities themselves.

Saffron Walden Community Energy



Halewick Lane Virtual Power Plant

A former waste transfer site at Halewick Lane on the edge of the South Downs National Park is being redeveloped by West Sussex County Council as the location for a large grid-connected battery to support the development of local energy communities in the area.

The site was made ready for the installation of a 24MW/24MWh lithium battery by:

- the demolition of old buildings containing asbestos and site remediation
- the installation of cabling to the nearest connection point over 5 kilometers away

The project will cost £23.6m and is supported by a grant of £500,000 from the Interreg 2 Seas programme. When operational, the battery will support community-owned renewable energy projects by operating as the core of a virtual power plant. As a VPP it will:

- provide flexibility services to stabilise the electricity network locally;
- buy excess zero-carbon electricity from businesses with solar power and sell it back as required, keeping energy local;
- be the focus for aggregation of other smaller batteries in the area, increasing the income for their owners through provision of grid services which they could not provide working individually.

Energy Communities and social housing

Renewable solar energy for tenants in social housing - Pas-de-Calais Habitat (FR)

Committed to responding to the rising cost of energy and the climate emergency, Pas-de-Calais Habitat (PDCH) has adopted, in partnership with eco transition deployment centre CD2E, an innovative economic, energy, social and environmental model.

The LECSEA project deploys a model of collective services based on the development of large-scale renewable energies associated with the control of energy expenditures. This allows social housing landlords to self-finance the modernisation of this sector of activity for the benefit of the most vulnerable populations.

By introducing the notion of energy production by the social landlord linked to investment prices and not prices based on the evolution of the price of gas, the office has succeeded in designing an energy service with controlled prices. Thanks to the European funds of the Interreg 2 Seas programme, the supply of electricity to our tenants is carried out between one or more producers and one or more final consumers linked together within a legal entity (PMO).

The installation of PV panels, connected directly to the electrical panel of the common areas, brings two advantages: the development of conditions



L'énergie alimente les communs, passe sur le réseau puis est redistribuée chez les locataires de l'immeuble.

Scheme autoconsommation collective

Installation solar panels social housing



for the contribution of the tenants to the local services and a direct impact on the purchasing power.

Ambitious and innovative, the contributions of the LECSEA project are of various kinds:

- economic: it highlights the market potential offered by social housing to the regional solar industry
- environmental: it opens the way to the mass production of the innovative solar panel support “eco-rack” and to an improved carbon footprint
- technical: it demonstrates the maturity of the legal and monitoring tools related to collective self-consumption in France and Europe
- social: it promotes the involvement of tenants in eco-responsible approaches

Investment: € 975,298.93

EU funding: € 585,179.36

SHARE

Training sessions

The installation of PV panels, connected directly to the electrical panel of the common areas, brings two advantages: the development of conditions for the contribution of the tenants to the local services and a direct impact on the purchasing power.

Final Conference

The installation of PV panels, connected directly to the electrical panel of the common areas, brings two advantages: the development of conditions for the contribution of the tenants to the local services and a direct impact on the purchasing power.

During The LECSEA final conference, one central question was on the table: "Is there a future for energy communities?" Trying to find answers, speakers and participants from France, the UK, The Netherlands and Belgium gathered at the impressive Transfo site - a heritage power plant to be equipped with the energy system of the future.

The consensus is straightforward: "Yes! There is a future for energy communities, but..."

We are not in the future we hoped to be. Following the implementation of the



Final Conference at Transfo (BE)

ambitious and visionary energy communities concept by the EU member states, we find ourselves unable to make the necessary step forward. Somewhere, the implementation of the energy communities concept got stuck. Today's energy market is organised via a rigid legal/organisational entanglement designed for the energy system of the past, the vertical energy system. To grow, energy communities need the fertile ground of policies embracing citizens and SME's as active, emancipated energy citizens and not merely passive consumers, individually or as a group. Today, they are barely allowed to carry out the activities as presented in the definition: to produce, distribute and sell energy in their community, as protagonists in a horizontal energy system.

Communities are excited, they are getting ready, waiting to be unleashed. The conference keenly demonstrated the potential of citizens and SME's to jointly take action as energy communities. Success stories, however, need long and intensive processes, resulting in setting up smart but complex organisational structures in order to comply with all requirements. Moreover, the lack of clear and simple procedures hampers the access of broad segments of society.

As such, the LECSEA project has made a number of policy recommendations in order to fully deploy the potential of energy communities, which should result in a more equitable energy transition, bringing the benefits of clean energy to all.

Policy recommendations to the EU

- Assess the impact of EU and national regulation on energy communities: is it effective and efficient?
- Adjust the directives by
 - improving their coherence,
 - removing existing barriers that block the full deployment of the concept of energy communities.
- Provide arrangements for small groups of citizens to make it easy to adopt renewable energy collectively.

Policy recommendations to national authorities

- Define high-potential use cases for energy communities and facilitate said use cases when transposing the EU directives.
- Design light, proportionate procedures and obligations, adapted to the scale of (small) energy communities.
- Provide instruments to
 - support project development,
 - reduce the risks and
 - secure (pre)funding of investments by energy communities.

Policy recommendations to local authorities & actors

- Define in your energy strategies an active role for citizens and SME's so they become actors in your strategy.
- Facilitate by way of community building citizens and businesses to accept the energy transition. Get the vibe. Community building is a long-term process.
- An energy community is not a goal, it is a means.



”

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Transfo Zwevegem

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