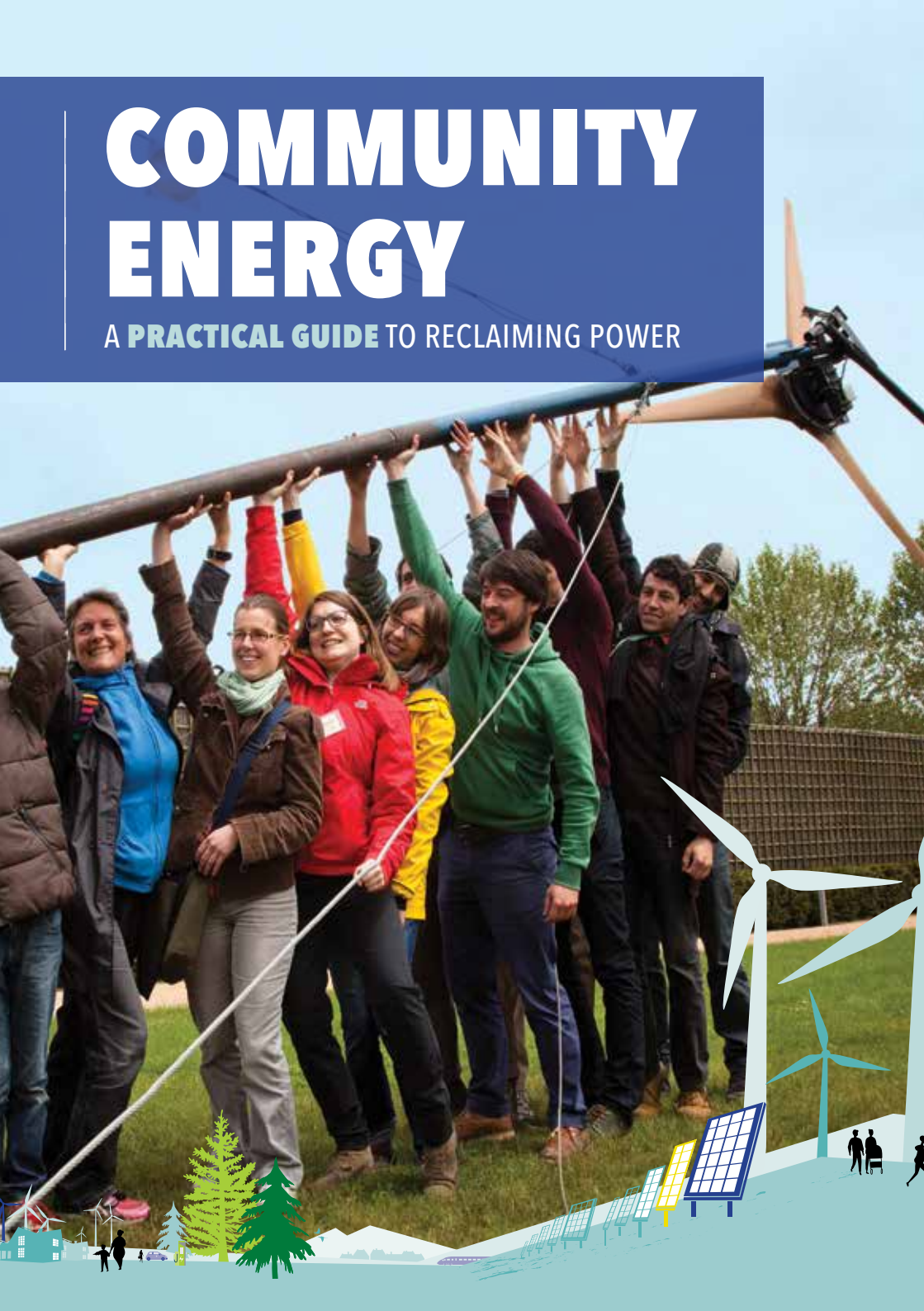
COMMUNITY ENERGY

A **PRACTICAL GUIDE** TO RECLAIMING POWER



COMMUNITY ENERGY

A PRACTICAL GUIDE TO RECLAIMING POWER

OCTOBER 2020

The organisations that authored this book cooperate together as part of the European Community Power Coalition. We would like to thank all the members of the European Community Power Coalition who reviewed and contributed to this handbook.

This project is part of the European Climate Initiative (EUKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

If you have questions or feedback about the information contained in this book, please contact us:

Friends of the Earth Europe
www.foeeurope.org

REScoop.eu
www.rescoop.eu

Energy Cities
www.energy-cities.eu

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Cover image: Enercoop members erecting a wind turbine. © Enercoop

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THE ENERGY TRANSITION NEEDS YOU

Welcome to your community energy handbook. This is your go-to guide, packed with instructions, practical tips and resources, to build a local, community-led renewable energy revolution in Europe.

Community energy is key to a decarbonised economy and a crucial step in tackling climate change. This is about more than windmills and solar panels. Community energy can help find a new balance between local economies and the global economy. It can help overcome the urban and rural divide, and close the gap between north and south, between rich and poor — because it empowers local people. Community energy leads to energy democracy, holding the promise of an economy and society based on co-operation rather than competition, within the boundaries of planet earth.

Whether you're a curious individual, a group of people embarking on a renewable energy journey, a local authority making plans, or an up-and-running energy cooperative — this step by step guide is for you.

THIS STEP BY STEP GUIDE IS FOR **YOU**

THE ORGANISATIONS BEHIND THIS BOOK

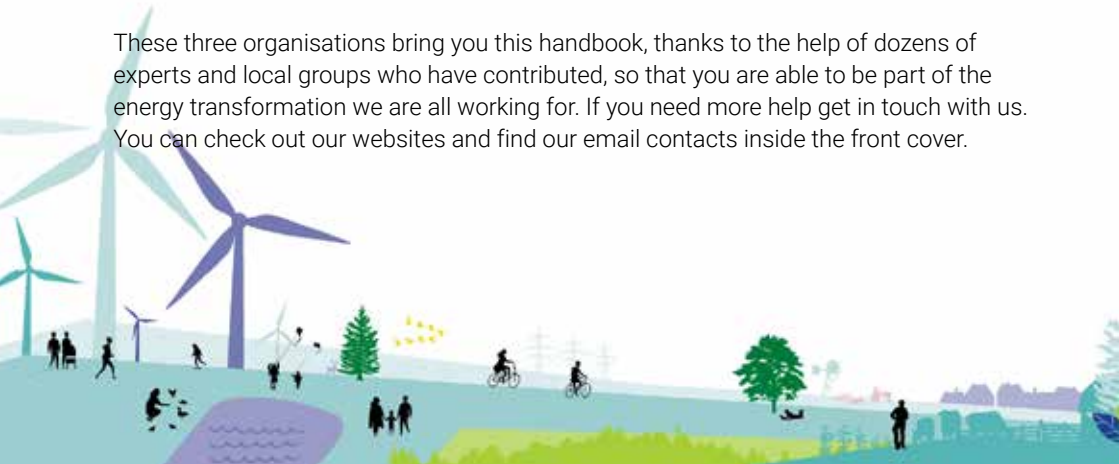
The book was put together by three organisations who work together to speed up the development of community energy across Europe.

Friends of the Earth Europe is the largest grassroots environmental network in Europe, uniting more than 30 national Friends of the Earth organisations with thousands of local groups. Friends of the Earth Europe campaigns for environmental justice and for solutions that create socially just societies, and has been working to put the energy transition in people's hands since 2013.

Energy Cities is a network of 1,000 local governments in 30 countries. Energy Cities believes that the energy transition is more than renewable energy or great technologies: it is about the wise use of resources while strengthening local participation and well-being in a democratic Europe. Energy Cities wants a radical transformation of energy systems and policies, giving citizens the power to shape a decentralised and

REScoop.eu is the European federation of citizen energy cooperatives, representing over 1500 cooperatives and their 1 million citizens. Founded in 2013 and building on several decades of experience with energy communities, we ensure that the voices of citizens are heard at the EU-level, and we support energy communities with technical expertise, capacity building, and communications.

These three organisations bring you this handbook, thanks to the help of dozens of experts and local groups who have contributed, so that you are able to be part of the energy transformation we are all working for. If you need more help get in touch with us. You can check out our websites and find our email contacts inside the front cover.



HOW TO READ THIS BOOK

We hope this manual inspires you, and helps you understand the steps to create your very own community energy project.

This handbook can't cover every aspect of launching a community energy project, but we have included as much information and practical tips as possible to help you navigate the field — and useful links to more resources. This guide aims to be as useful as possible to people and communities across Europe (and maybe further afield), while also providing some specific answers to your questions for a variety of European countries.

We hope you find this guide valuable in your journey to take on the climate crisis and reclaim power.

When the time is right, ideas have simmered, and you've gathered the right group of people, this booklet will be waiting for you. You can keep coming back to it. **The sooner you start, the better!**

ENERGY REVOLUTION: IT'S UP TO US

Wind farm, Italy.
© italianestro/Shutterstock

DECADE ZERO: ACT NOW!
CHAPTER 0

We are facing a convergence of crises. From our climate to our health, economy, society, and democracy. All seem interconnected. Across Europe, communities are already living with the first impacts of climate change, such as droughts, crop failures, floods and wildfires. These impacts are more severe in countries in the Global South, countries least able to cope with these impacts - where more and more people are being forced to flee their homes, driven out by extreme weather.

This is the face of climate injustice: those who have contributed least to global warming are facing its worst impacts, with marginalised communities across the world most at risk. As scientific reports grow more alarming every year, time is running out. Due to Europe's historical responsibility in causing this crisis, we have a duty to lead in tackling it.

Our world needs a rapid exit from all fossil fuels, to transition from an extractive economy to a regenerative society. It means a new, just energy system that is 100% renewable, democratically owned and doesn't compromise the well-being

Community energy celebration at Westmill Wind Co-op.

DECADE ZERO: ACT NOW!
CHAPTER 0

The climate crisis often feels like it stems from a lack of community and democracy. Corporations run the energy system for profit, leaving little room for people to have a say. A culture of individualism and competition has eroded communities. Many people understandably feel disillusioned and disconnected from the current system. But we have also seen during the COVID-19 pandemic how quickly instincts for mutual aid and collaboration can emerge.

Community-owned energy is one practical way forward out of multiple crises. By putting energy back in the hands of people and communities, we can take on climate and social challenges collectively. Community energy can revitalise your local economy, by creating local jobs, reducing energy bills, and helping money stay in the community. It strengthens communities, reduces energy poverty and enables people to cut their energy consumption — thereby reducing potential local opposition to new renewable energy projects.

Climate breakdown is not inevitable. People are taking matters into their own hands, and building a new energy system that works for all. **A better world lies ahead. You and your community can be part of building it!**

An online learning tool to help understand the complexity of climate change and why it demands an approach of climate justice. https://www.climatejusticesyllabus.org

IPCC: a story of three possible warmer worlds. https://www.ipcc.ch/report/infographic/worlds-apart/

50 resources on climate justice. A directory for Quakers. https://www.quaker.org.uk/documents/50-resources-climate-justice

Social movements, environmental and development NGOs, trade unions, faith and other civil society groups come together to assess the UNFCCC climate commitments. https://www.equityreview.org/

THE ENERGY TRANSITION IS IN YOUR HANDS
CHAPTER 1

If you feel overwhelmed by the climate crisis, you're not alone. It is often hard to imagine where to even begin. Actions like petitions or demonstrations don't feel enough to meet the scale of the crisis, and demanding action from political leaders can also feel disempowering, when you want to make changes yourself.

We need a very different energy system. We need to stop burning fossil fuels that disrupt our climate, and we need a decentralised system to switch to 100% renewables. To make that switch, we also need to dramatically reduce our energy consumption.

This is a handbook to give you the tools to get practical and take action. Taking practical steps to initiate projects and change things with others in your community is the best way to relieve climate anxiety.

You and your community won't be on your own. Millions of people across Europe are stepping up, growing their own food, reusing and upcycling used products, creating sharing communities, resisting fossil fuel projects, and running community spaces. Community energy initiatives in particular have great potential to tackle climate change.

We need all hands on deck to transform our energy system. We need to think beyond electricity and include community projects on heat and transport, as many community projects are already doing.

Demanding action from politicians is important, but we can also take matters into our own hands. You can start building the energy system of the future in your neighbourhood, your university, or your town, right now.

THE ENERGY TRANSITION IS IN YOUR HANDS
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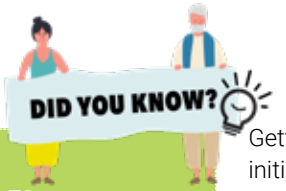


THE GERMAN 'ENERGIEWENDE'

In Germany the energy transition or energy "turn around" is called the Energiewende. Germany is one of the countries with the highest share of renewables in the world, largely thanks to passionate activists and their communities who led this revolution.

- 42.9% of the electricity produced in Germany in the third quarter of 2019 was generated by renewable energy sources, compared to 31.6% in 2016.
- 42% of the renewable electricity generated in Germany in 2016 came from projects carried out by the citizens or with strong public participation.

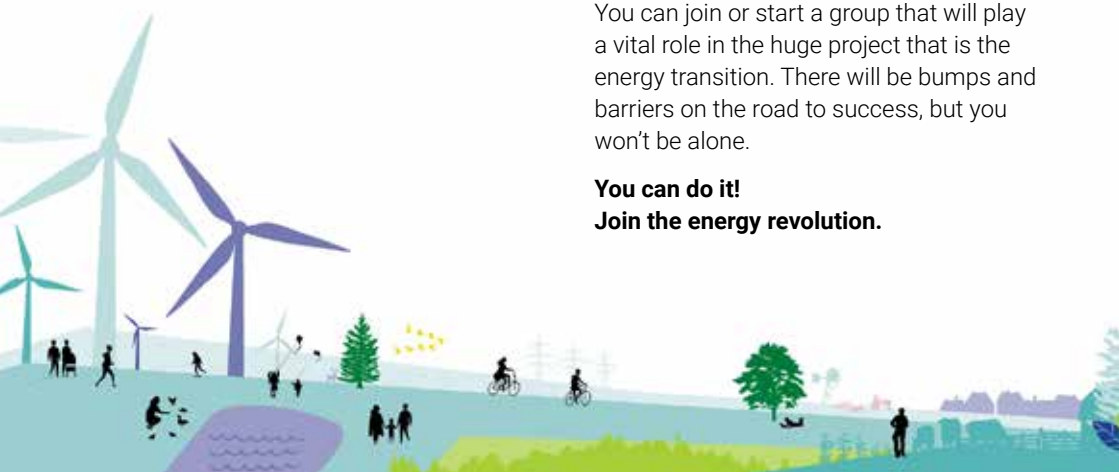
Getting involved in a community energy initiative is not always easy but it can transform your community, take back power from big polluting corporations, as well as kick-start a local energy transition. You will get to know your neighbours, and experience a new feeling of being connected and rooted in your community. Being part of a group, working together to overcome challenges is rewarding and empowering.

You will learn new ways to talk about climate change and other global issues that affect your community by bringing the conversation close to home, to your school, neighborhood, or city.

This guide is a call to action. It's a call to get active locally, and become part of a growing movement of people who are reclaiming power. It will connect you and your community to a history of decades of local action on energy, since the very first communities set up their own renewable projects in Denmark in the 1970s.

You can join or start a group that will play a vital role in the huge project that is the energy transition. There will be bumps and barriers on the road to success, but you won't be alone.

You can do it!
Join the energy revolution.



THE ENERGY TRANSITION IS IN YOUR HANDS
CHAPTER 1

TEN REASONS TO START OR JOIN A COMMUNITY ENERGY PROJECT

1. You'll be building the system needed to stop the climate crisis
2. Community renewables redirect money supporting the fossil fuel system
3. It can reduce energy poverty in your area
4. You'll get to know your neighbours and strengthen your community
5. You will produce your own renewable energy
6. It creates spaces to educate people on the issues of energy, climate and democracy
7. It keeps the money locally in your community
8. You will show other communities what is possible
9. It will contribute to creating a more local, more circular economy
10. You will be building the kind of world you want to see

The Energy Transition to Energy Democracy from REScoop.eu
https://www.rescoop.eu/toolbox/the-energy-transition-to-energy-democracy

The social impact of energy communities: ten benefits they bring.
https://www.rescoop.eu/news-and-events/news/the-social-impact-of-energy-communities-ten-benefits-they-bring

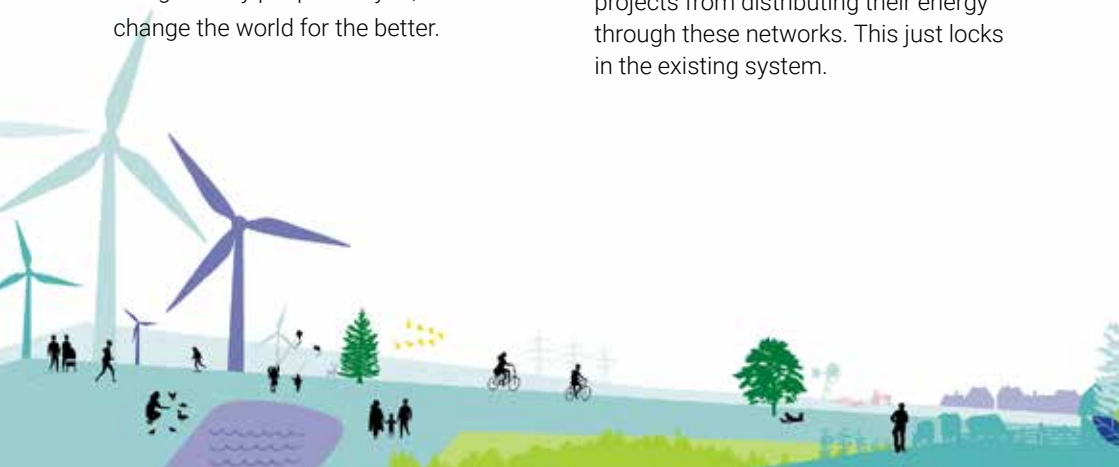
EUROPE'S ENERGY SYSTEM IS AT A CROSSROADS
CHAPTER 2

In 2020, the majority of our energy still comes from polluting fossil fuels. A shocking 82% of the energy consumption in the European Union comes from fossil fuel and nuclear. Equally problematic, much of the energy system is controlled by big companies that operate for profit.

But Europe's energy system is now at a crossroads. The old system of overproduction, polluting energy and huge companies that run the system for profit is changing. A new system is being built, based on renewables. And much of it is decentralised, flexible, and owned by communities and citizens. This system is being built by people like you, who want to change the world for the better.

THE ELECTRICITY GRID: A KEY FIGHT

Big energy companies are causing problems for the climate and our communities because they hold massive political and economic power. These companies, and their subsidiaries, often own the electricity grid, which gives them power to decide who can access the energy highway. In France for example, Electricité de France (EDF) and its subsidiaries Enedis and RTE exclusively operate most of the country's electricity transmission and distribution systems, preventing small and community-owned projects from distributing their energy through these networks. This just locks in the existing system.



EUROPE'S ENERGY SYSTEM IS AT A CROSSROADS
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TWO SYSTEMS VYING FOR CONTROL

The old, fossil, corporate-owned system co-exists today with the new democratic, renewable energy system — and the old system is fighting the new. The big energy companies which still control most of our energy system are doing everything they can to maintain their power, publicly attacking community-owned renewables.

Part of their plan is to spread damaging stories, arguing for example that community energy projects only benefit a privileged few. The examples in this book will show you this is far from the case. On the contrary, people's motivation is often to support their local community or their opposition to oppose polluting energy. This book also presents community energy projects that aim to take ownership of the energy grid, such as Schönau, the case study of chapter 13, to run it in the interest of people.

We need to speed up the transition to renewables and build the new energy system as fast as possible. That's where you and your community come in!

Community energy production in Europe has huge potential: a recent study found that half of EU citizens – including local communities, schools and hospitals – could be producing their own renewable electricity by 2050, meeting 45% of the EU's energy demand.

NEW EU LAWS COULD CHANGE THE GAME

New energy legislation, agreed at EU level in 2019, should boost community energy and help community projects across Europe. Energy communities across the EU have won new rights that should guarantee they can participate in the energy transition. Acknowledgement of their role, and new rights to produce, consume, sell and store renewable energy are now enshrined in EU law for the first time.

This is an important opportunity to promote many more people-powered renewables projects, and for governments to support them.

These rights for community energy are included in the EU clean energy package agreed in 2019.

It also included the following targets for 2030:

- 40% cut in greenhouse gas emissions compared to 1990;
- 32% share of renewable energy sources in the EU's energy mix;
- 32.5% improvement in energy efficiency compared to 2007.

However, things are changing fast, and (at time of writing) it looks likely these inadequate targets will be revised upwards under the European Green Deal.

NEW RIGHTS FOR COMMUNITIES

1) CITIZENS AND COMMUNITIES RECOGNISED AS ACTORS IN THE ENERGY SYSTEM

The EU Renewable Energy Directive, agreed in 2019 contains new definitions that acknowledge how citizens can get involved in renewables through renewable energy communities (RECs). People, local authorities and small and medium-sized enterprises (SMEs) can set up legal entities to produce renewable energy, these RECs are recognised as playing a central role in the energy system and must be supported by EU governments. Through energy communities, citizens may generate financial resources through specially dedicated funds that are then distributed locally to provide services or to meet local needs.

EUROPE'S ENERGY SYSTEM IS AT A CROSSROADS
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2) CITIZENS ARE EXPLICITLY GIVEN THE RIGHT TO PRODUCE, STORE, CONSUME AND SELL THEIR OWN RENEWABLE ENERGY

For the first time ever, EU law recognises that you as a citizen have a right to invest in the energy system. If you find that there are legal barriers to producing, storing, selling or owning your own renewable energy, it is the duty of your government to make sure that you actually can do these things.

3) YOUR GOVERNMENT MUST CREATE AN ENABLING LEGAL FRAMEWORK TO SUPPORT CITIZENS

Every EU country is required to make sure the legal system supports community energy. Enabling frameworks could, for example, make support schemes available to provide funding for projects; or create an agency to provide advice and support, and to lay out rules to enable access to the energy grid.

4) YOUR GOVERNMENT MUST SIMPLIFY ADMINISTRATIVE PROCEEDINGS FOR CITIZEN AND COMMUNITY PROJECTS

One of the difficulties of setting up a community energy project is administrative complexity. It's good to be prepared for a lot of paperwork, for planning permission for example, or applications for financial support. Thanks to EU law however, it's now the duty of your government to ensure that administrative procedures are simplified for citizen and community projects.

5) YOUR GOVERNMENT MUST ASSESS THE BARRIERS AND POTENTIAL OF COMMUNITY ENERGY

It is the duty of your government to assess the barriers and potential of renewable energy communities in your country. The law requires they do this by summer 2021, but some national governments are doing it sooner. Find out if this assessment has already been published! It will be a good source of information on the obstacles you can expect in your country.

EAST AND WEST, DIFFERENT OUTLOOKS

The rights for communities mentioned above will be particularly useful for helping the energy democracy movement in Eastern Europe. This is because energy ownership is well developed in some Western countries such as Germany and Denmark but it is still in its infancy in many Eastern European countries. Some of the problems come from understandable scepticisms about cooperatives due to how cooperatives were mis-used during communist times. If you find this a problem in your national context don't focus on the form your project should take but on the activities and how the benefits can be shared with everyone. We have tried to include some success stories from Eastern Europe but there are not yet as many successes to share there as we would like and sadly most of the success stories in this book are Western. We are working to change that and we hope you can too!

GETTING POLITICALLY ACTIVE

Most of the advice in this handbook is aimed at making change by building the new system we want. Sometimes you might also need to get political with your local group, to push for changes at the political level. At the time of writing, EU laws are being transposed into national laws, sometimes slowly and inadequately. Check with the REScoop.eu or a Friends of the Earth group in your country to get the latest information on this process.

It's important that your department or ministry of energy sees community groups demanding their rights to participate in the energy system. You could for example write a letter to your energy minister and your local political representatives, to explain your local group wants to be part of the energy transition. Let them know you expect the Renewable Energy Directive to be fully transposed into national law, to support your project.

The Renewable Energy Directive gives you rights, demand them!

EUROPE'S ENERGY SYSTEM IS AT A CROSSROADS
CHAPTER 2

The Energy Atlas - Facts and figures about renewables in Europe.
https://www.foeeurope.org/energy-atlas

Vision Statement sets out demands for a future energy system for Europe which is sustainable, carbon-free, socially fair, publicly owned and controlled by local communities and people. https://communitypowercoalition.eu/community_power_booklet_v5-screen.pdf

This paper is a guide for national decision makers who face the task of putting aspects of the Clean Energy Package into their national legislation.
https://www.rescoop.eu/toolbox/how-can-eu-member-states-support-energy-communities

This booklet explains how new EU renewable energy legislation could be used to unleash a wave of fossil-free community energy across Europe.
https://www.foeeurope.org/unleashing-power-community-energy

THE BENEFITS OF COMMUNITY ENERGY
CHAPTER 3

This chapter gives you an overview of the many benefits of community energy, showing how these projects benefit the energy system and society more widely.

1. PHASING OUT FOSSIL FUELS

Community-owned renewable energy projects significantly cut carbon emissions by replacing fossil fuels. Half of all European Union citizens could be producing their own electricity by 2050, meeting 45% of the EU's energy demand. This would represent a massive shift away from polluting fuels that produce CO_2 and destabilise the climate. When citizens are involved in the energy transition, support for renewables increases overall and the transition can proceed faster.

2. CUTTING ENERGY CONSUMPTION

Many community energy projects aim to reduce the amount of energy being used, recognising that we must reduce our energy consumption to shift to renewables. Members of community energy projects are empowered to cut their energy use, through awareness-raising programs and investments in energy savings. In Brno in the Czech Republic, for example, an insulation-buying club offers training to residents, enabling them to cut the energy consumption of their apartment buildings.

THE BENEFITS OF COMMUNITY ENERGY
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3. INVESTMENTS IN CLEAN ENERGY

Transitioning to clean and safe energy generation will require huge levels of investment. Even though these investments are profitable, building an energy project requires large amounts of capital.

Millions of citizens across Europe have savings sitting in the bank that are unknowingly fuelling the climate crisis as banks and pensions invest in dirty energy projects. Getting communities involved in the energy transition can redirect this money to climate solutions and the local economy. Giving communities the chance to buy into schemes is an important way to make more money available for your project, and get people involved.

Finance is also covered in this manual as a challenge, because gathering the money needed can be difficult. But when communities overcome this initial difficulty, the project can leverage the finance needed to push the energy transition forward. For example in Germany, the famous Energiewende transition was pushed ahead mostly thanks to investments of farmers, communities and citizens.

4. WINNING PUBLIC SUPPORT FOR RENEWABLES

Local opposition to energy projects can be a major barrier to renewables. Sometimes, it's not difficult to understand why: too often, large scale developments are imposed on communities, with minimal opportunities for local residents to give input, voice their concerns, or take part. But when people are involved in the project, or even better, when they own it, acceptance and support can massively increase.

Various studies have shown higher levels of people's trust in community energy projects. Public support for renewable energy in Denmark significantly increased with the development of wind-power cooperatives and the requirement for wind developers to sell shares to local citizens.

When people are involved in a project, they are much more likely to value its benefits and accept negative aspects. They are also empowered to mitigate negative effects, for example by carefully choosing where to place windmill sites in their local area.

Public support for renewables is linked to people's levels of awareness. The more people know about energy issues, the more likely they are to support renewable technologies. To transition to a clean, safe energy system, people need to be engaged to become part of the solution.

Many community energy projects provide information and do outreach work, thereby increasing support in the overall population. Think about ways that you can include education in your project.

5. TACKLING ENERGY POVERTY

Many community-owned energy projects provide an allowance of electricity at low cost to the people involved. In the UK, many people who couldn't afford their energy bills were placed on more expensive 'pay-as-you go' tariffs. Thanks to the Brixton Solar community project, local residents were instead provided with an amount of free electricity, generated by solar panels on their roofs. The project also provides 'draught buster' workshops to help people cut their energy consumption and bills.

When communities own the means to produce their own energy, they have more control over the costs, don't have an incentive to overcharge people, and don't demand higher prices like big energy companies. See more about Brixton Solar and Repowering London in the following text box.

6. SUPPORTING YOUR LOCAL ECONOMY

Community energy projects generate 2 to 8 times more local revenue than a project carried out by an external actor (as solar and wind power projects have shown). They create jobs, and can help create local energy markets where consumers can buy energy at a stable and fair price.

They can also boost European innovation. Because they are local, communities can support the emergence of a photovoltaic industry in Europe, as they are more likely to support a local or regional manufacturer of solar panels applying high social and environmental standards.

REPOWERING LONDON | UK

Repowering London is a non-profit organisation that was founded in 2013 by Afsheen Rashid and Agamemmnon Otero. The organisation came out of a volunteer group, with the aim of creating community energy projects on social housing; their first five projects are on social housing estates in London. The aim of Repowering London is to put power into Londoner's hands rather than in the hands of big industry. Repowering London supports communities to create energy projects that generate renewable energy for the people and better futures for their community.

Repowering London sees the importance of nurturing co-operatives where community members have a say in which direction they want the projects to go. Establishing a

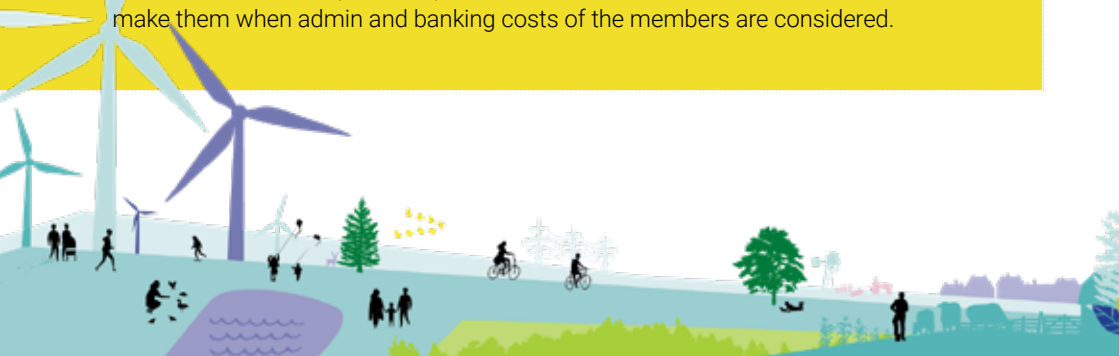
Youth Trainees from Brixton Energy Solar 2, Repowering Project.

democratic model is vital for the success of these community energy projects, as it empowers the community and sets an example of how community democracy can work. Local people can become cooperative members for £1 a month and this gives them a voting right in the decision-making processes of the co-operative. These decision-making processes encourage healthy collaborations between the communities, authorities and the public sector.

The £1 membership is about accessibility for Repowering London and their community members. The organisation installs solar panels on publicly owned buildings, and believe that everyone living in the borough should be able to have a say in how the projects are run, without having to invest hundreds of pounds. They have a one-member-one-vote system which means all members have the same ability to stand for a directorship, raise questions and decide how the community fund is spent (via voting at the AGM or becoming a director). The community fund is then used to support projects in the borough, allowing communities to identify their own solutions to problems and be supported to develop those solutions.

Repowering London takes pride in building the collective by hosting community events, such as a Greener Living Day. An event that welcomed community members to learn more about community energy and to meet more like-minded people who share the same vision. Similarly, Repowering London sends their community champions to schools and local community hubs to host workshops and talks about the exciting benefits of community energy. They also provide a flagship youth training program that is accredited and can be added to young people's CVs.

How does Repowering make investing accessible for communities? The organisation wants to make the benefits of their projects as accessible and broad as possible. When holding a community share offer the minimum investment amount is reduced to £50 for those living in the borough and either on benefits or under 25 years old (rather than £100 minimum for anyone else). These amounts are as low as Repowering London can make them when admin and banking costs of the members are considered.



REPOWERING LONDON | UK CONTINUED

"By creating these projects, we can change the narrative around energy, community and what life can look like. We try to support as many people as possible by sharing this narrative, and the more people we work with, the more they tell our stories. The thing is about stories, the more often they're told, the truer they become. Hopefully one day we don't have to tell the story as the narrative becomes the world we're all living in."

DAVE FULLER, ROOFTOP PROJECTS MANAGER OF REPOWERING LONDON.

THIS PROJECT SHOWS US HOW MANY DIFFERENT BENEFITS ONE COMMUNITY ENERGY ORGANISATION CAN PROVIDE!

- Local people see solar panels as something accessible to them and support renewables.
- Financial support for Loughborough Community Centre helped by funding the delivery of 4,494 lunches to children.
- The project supports people in energy poverty by dedicating 20 % of the profits of Brixton solar to the Community Energy Savings Programme (CEEF). This programme directly assists members of the community in energy poverty, by renovating houses with better insulation, other energy efficiency improvements and education on energy saving behaviour.
- Repowering London trains young people within a socially vulnerable neighbourhood and turns them into energy experts. After being trained for several weeks of energy internship, the youngsters can give high quality energy advice, or develop RES projects themselves.

One of the youth traineees from Brixton Energy Solar 2, Repowering Project.
© Repowering London

7. STRONGER COMMUNITIES

Communities that embark on successful renewable energy projects together develop a sense of pride and confidence. People develop valuable skills, and strengthen relationships. Communities that have worked together on a clean energy project are more likely to set in motion other projects which also benefit their community.

8. REDISTRIBUTING PROFITS

Sharing the financial benefits of the project also strengthens communities, and many community energy projects have small funding schemes that distribute grants to local voluntary groups and clubs. For example, Wadebridge Renewable Energy Network (WREN) in the UK used to take a small fee for connecting buyers and suppliers, primarily for solar energy, with members deciding which local group would receive funding.

As government support for domestic roof-top solar energy diminished and then disappeared, this activity dried up and ceased. However, WREN was then well-placed to take on the administration of community funds of £70,000 per year derived from local commercial wind and solar farms, which are distributed to local not-for-profit and voluntary organisations through a network of local committees. Such financial schemes can reinvigorate communities economically and socially.

THE BENEFITS OF COMMUNITY ENERGY
CHAPTER 3

Friends of the Earth Europe and REScoop.eu paper on the benefits of community energy ownership.
https://www.foeeurope.org/sites/default/files/renewable_energy/2017/the_benefits_of_community_ownership.pdf

CE Delft: The potential of energy citizens in the European Union.
https://www.foeeurope.org/potential-energy-citizens-european-union-260916

Official EU publication on Energy communities and social innovation.
https://publications.jrc.ec.europa.eu/repository/handle/JRC119433

PART 2 THE DIFFERENT FORMS OF COMMUNITY ENERGY PROJECTS

Bro Dyfi Community Renewables Ltd (BDCR) is a Welsh community owned renewable energy company. It aims to promote wind and other renewable energy projects that benefit people in the area and that are subject to a significant degree of local control. © **BDCR**

COMMUNITY ENERGY: THE IDEA
CHAPTER 4

"Community energy" or "community power" refers to people in a community cooperating on energy issues. Community energy is a broad concept, it can refer to collective switching campaigns, collective investments in solar panels, but also the ownership of an energy supply company, or even a distribution network. Some people work together informally, while others set up legal entities. Depending on the activity, community energy can take different forms.

The different legal forms used to create local energy communities include (but are not limited to) cooperatives, partnerships, companies with a community interest, foundations, non-profit organisations, trusts and associations. The legal form you choose depends on your needs, and the rules around cooperatives and organisations in your country.

There are also other options that combine the ideas below, linking activities related to the energy community to an existing organisation. In the end, what matters most is your aim and the activities you carry out to support energy democracy, not the structure you choose.

NOT JUST ELECTRICITY: HEATING AND COOLING, TRANSPORT AND ELECTRICITY, A POWERFUL COMBINATION!

When thinking about community energy, people tend to picture a happy group of people standing in front of a wind or solar farm. However citizen energy ownership is not limited to electricity, and energy democracy is also making an entrance in the heat and transport sectors. In order to make the entire energy system more sustainable, local and efficient, action is needed on heating and cooling and transport as much as electricity.

It's best to think and plan across all three of these sectors. Actions and practical examples for mobility and heating, offering clear and inspiring ideas, are included in this handbook. You shouldn't try to do everything at once in the beginning, but you can take on new activities as you grow.

There are many solutions for renewable heating based on your area's resources. This can include partnerships with rural areas to provide bioenergy (forestry and wood residues, livestock manure, agricultural biomass, etc.), or surplus heat from local industries, that can be channelled back into a district heating network, or working with your own municipal with waste or sewage infrastructure, a nearby river, etc.

And the good news is that all of these decentralised options can be citizen-owned as well. In the city of Eeklo in Belgium for example, the local authority issued a tender for the construction of a large district heating network, requiring a 100% renewable energy target and a minimum of 30% citizen ownership. The winning consortium guaranteed this through a partnership with Ecopower, a Belgian energy cooperative. You can read more about the Eeklo project in the chapter on wind.

Many mobility solutions also exist, such as car-sharing schemes and community projects that run charging centres for e-vehicles. For example Som Mobilitat is an e-car sharing cooperative founded in 2016 operating a fleet of 106 electric cars. Find out more about Som Mobilitat and the Mobility factory in the chapter on mobility and transport.

COMMUNITY ENERGY: THE IDEA
CHAPTER 4

DEFINING COMMUNITY ENERGY

There are many different ways to define community energy. For the purposes of this book community energy is any project or initiative where people have ownership or a meaningful say in the running of renewable energy or energy related services. We also consider energy efficiency projects where the community is involved in collectively reducing their energy use as important community energy.

In the Clean Energy Package there are two different legal definitions of community energy projects. Firstly, Renewable Energy Communities or RECs which are defined in the Renewables Directive and secondly Citizen Energy Communities or CECs which are defined in the Internal Energy Market Directive. These definitions are broadly similar but it came about that there are two definitions because two different departments were working on similar legislation at the same time. Both these definitions have the most important things in common, they both require energy communities to have a mission that is related to the environmental, social or local economic values rather than profit. They both require that control over the project is in the hands of "real persons" such as citizens, cooperatives or local authorities. There are some differences in the membership that is allowed and in theory only RECs are required to be purely about renewable energy. The main thing is not to allow different definitions confuse or distract you, they are useful legal definitions that recognize the value of community involvement in the energy transition.

COOPERATIVES
CHAPTER 5

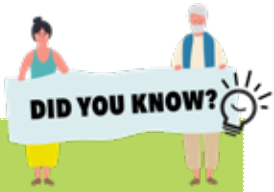
One very good option for energy projects is setting up a cooperative, a group of citizens that organise themselves to work together on a specific topic for the benefit of their community. Cooperatives can cover issues such as food, housing, transportation, finance — and energy. Many community energy projects across Europe are cooperatives, or REScoops (Renewable Energy Source Cooperatives).

When it comes to energy, cooperatives can take on many different activities (you will learn more about these activities later in this guide). When looking at cooperatives, it's important to look at what they do, but also how and why they do it.

Firstly, the main objective of a cooperative is not to generate financial profits, but to improve the living conditions of their community. This doesn't mean cooperatives don't make profits, but the profits they make go either directly to their members, or are reinvested in projects that benefit the community's natural, social or economic environment.

Secondly, a cooperative is organised in a democratic, open and transparent way. This relates both to the internal organisation and the financial decision-making. For instance, members can decide how to use the cooperative's profits, and how they want to set up and run their team. An important characteristic is also that all members have one vote, no matter how much they have invested. Together, these two characteristics distinguish cooperatives from traditional businesses.

COOPERATIVES
CHAPTER 4



ENERGY COOPERATIVES TAKE ROOT

Some of the oldest known cooperatives started in the UK around 1840, when a group of weavers organised themselves during a famine to jointly purchase food and make it available to the people in their community who were starving.

In Italy, several energy cooperatives were founded at the beginning of the 20th century in the Alps, working on hydro power due to the remoteness of rural areas and the lack of access to the main grid. As an example the SECAB, Societá Elettrica Cooperativa dell'Alto But was founded in 1911 and brought about many social benefits, such as free supplies of electricity, financial subsidies for charities and associations, and free professional training courses for young electricians.

Another example from the industrial era is the cooperative Vooruit, from Ghent (Belgium), formed by activists from socialist movements to prevent negative aspects of industrialisation, such as dangerous working conditions, malnutrition, poverty. The movement set up cooperative banks and supermarkets to cater to its community's needs.

In some countries, the development of electricity included many cooperatives, for instance in Denmark or Germany where farmers and other rural communities organised power distribution in their area. In Germany more than 6,000 energy cooperatives brought electricity to rural areas.

Some energy cooperatives are more closely associated with one economic function such as consumption, production (making them similar to traditional cooperatives of consumers, workers or producers). Others combine different economic activities (production and consumption).

Some energy cooperatives offer the opportunity to choose between different hats, others impose restrictions.

- Some cooperatives require consumers to be members,

- Others offer the possibility to simply invest without using the services as a producer or a consumer, which can attract investors from outside the supplied area,
- Some cooperatives offer the opportunity to be a consumer without investing, which can broaden its customer base.

There are different ways to organise governance within a cooperative, and they usually revolve around the seven International Cooperative Alliance Principles (ICA), based on the Rochdale Principles. REScoop.eu, the European federation of citizen energy cooperatives has integrated the ICA principles in its Charter.

While a number of countries have developed legal forms for cooperatives in national legislation, the ICA principles can be integrated in any legal form beyond cooperatives (e.g. in founding statutes). More and more organisations establish their internal governance around these principles today.

THE SEVEN ICA PRINCIPLES OF COOPERATIVES

1. Voluntary and open membership
2. Democratic member control
3. Member economic participation
4. Autonomy and independence
5. Education, training and information
6. Cooperation among cooperatives
7. Concern for community

One common challenge for cooperatives is that most of their members engage on a voluntary basis. This makes it even more important to ensure common understanding, shared values and goals, healthy communication and adequate workload distribution within the group.

THE ENERGY COOPERATIVE THAT BUILT RENEWABLE ENERGY FOR THE MASSES: ECOPOWER | BELGIUM

It all started around the small kitchen table of a co-housing project in an old watermill in the Flemish village of Rotselaar in Belgium, 30 years ago. Dirk Vansintjan, an activist for many years, realised that campaigning against nuclear energy was not what he wanted to spend all his energy on. He also wanted to be part of creating the solution.

Looking at the old watermill, Dirk and fellow members of his community wondered, "What if we could get this to work again, and produce energy with it?" This is how the Ecopower cooperative started. Its first renewable electricity sparked in the 1990s, produced from the water turbine of that very watermill. Dirk still lives there today, a beautiful place that he shares with his family and friends.

Slowly but surely, the project became an energy cooperative, and the growing membership helped install new wind turbines and solar panels. Today, the cooperative powers more than 50,000 homes with 100% renewable energy.

The watermill in Rotselaar (BE), where Ecopower was born.

Ecopower does not make a profit on its energy supply activities: all surplus is reinvested in new renewable energy and energy efficiency projects. All of the cooperative's members can each buy up to a maximum of 20 shares, and each of the 60,000 members has one vote in the general assembly. If someone can't financially afford a share, solutions are offered to potential members.

Today, the cooperative supplies roughly 1.64% of household electricity in Flanders with 23 wind turbines, 3 small hydro power installations, 1 co-generation installation and 322 decentralised solar PV installations on the roofs of schools, public buildings and houses. Ecopower is saving energy too: it has helped its members halve their electricity consumption from the grid. Half of their members have installed PV panels on their roof

By enabling citizens to own wind turbines, solar panels, small hydroelectric power stations and a pellet factory, Ecopower has seen support and acceptance for renewable energy increase.

COOPERATION AMONG COOPERATIVES

In 2013, Ecopower co-founded REScoop.eu, the European federation of citizen energy cooperatives, now in 2023 a growing network of more than 2,250 European REScoops and their 1,500,000 citizens.

Ecopower has also been a pioneer in working with cities and municipalities like Eeklo, Ghent, Antwerp, Leuven, Beersel, ... They were one of the first energy cooperatives to discover the potential of cooperatives and local governments collaborating.

Dirk believes that the cooperative model helps build an economy that serves people and society, with ecological and social impact prioritised over profit.

"In the past two decades in western Europe, we've seen a wave of grassroots initiatives, citizens taking action, to seize the opportunity of the energy transition – from fossil and nuclear energy to renewables, from centralised to decentralised, from wasting energy to rational energy use. **This is a unique opportunity for citizens to become active in the energy production and distribution of the future.**"

COOPERATIVES
CHAPTER 5

STAYING THE COURSE

Cooperatives have proved to be some of the most stable forms of community energy projects because people bring passion to these projects. You might stay in a job even if some aspects of it displease you, but often, the main thing keeping you engaged in a voluntary activity is motivation. This depends a lot on how you feel in the group, and that's why it's crucial to put time and effort into establishing healthy group dynamics. More on this in chapter 8, keep reading! **And get cooperating!**

Seeds for change have great resources on cooperatives and community work. https://www.seedsforchange.org.uk/resources

REScoop.eu Charter. https://www.rescoop.eu/toolbox/rescoop-eu-charter

Factsheet from German perspective. https://www.ownyoursecap.eu/wp-content/uploads/2024/04/7.-Fact-Sheet-Energy-Cooperatives.pdf

Community benefits factsheet from Scotland. https://www.localenergy.scot/communitybenefitstoolkit

Guidebook for energy communities in Ireland. https://www.rescoop.eu/toolbox/sustainable-energy-communities-handbook-ireland

CLUBS, TRUSTS & OTHER FORMS
CHAPTER 6

Cooperatives are a solid legal form for democratically owning and running your energy project. However, they are not the only solution and other options are available for your project. In some countries, creating a cooperative is a long process and implies navigating a lot of administrative rules. Other forms can be an easier first step, and your group can evolve towards a cooperative later. It's useful to check out what the legal requirements are in your country. For most of these below, you need a simple mission statement or constitution, but putting this together can be a useful step for your team anyway.

In Germany you might want to become a Verein (e.V.), to register as a club/organisation, meaning you will have members instead of shareholders, and equity can only be acquired as interest-free membership fees or subordinated loans. But in a club/association, idealistic activities must always be prioritised over business concerns.

Alternatively you can register as a limited liability company, either for profit (GmbH) or non-profit (gGmbH). This could be easier if your activities are varied. However, a GmbH makes it harder to directly involve citizens as opposed to shareholders, if you plan to collect equity beyond subordinated loans. The vast majority of citizen wind farms in Germany are in fact either cooperatives or limited partnerships (KG), with citizens as shareholders and limited company liability (GmbH) as the general partner. This collaboration forms an entity known as a GmbH & Co. KGs.

CLUBS, TRUSTS & OTHER FORMS
CHAPTER 6

In Belgium, a non-profit association is called an asbl or vzw. This type of organisation is not motivated by profit, or has profit as a secondary motive. Profit can only be used for purposes that do not serve private interest, and cannot be directly or indirectly distributed to founders, members, directors or anyone else. The members, directors and supervisory directors are called to the general assembly of non-profit associations and the management are then legally obliged to answer questions during the general meeting.

In Ireland, choosing the appropriate legal form for a community energy group isn't straightforward. Groups tend to be attracted to the cooperative model first, however Irish cooperative legislation dates from 1893, making them a more difficult vehicle for energy generation projects. Aran Islands Energy cooperative and Claremorris Energy cooperative are two good examples of organisations making it work.

Another option is a Limited Company, however this legal form only allows for 149 shareholders, which is restrictive when building a community-owned project, and does not enable a key aspect of community energy: the opportunity for many to join. Templederry wind farm was established as a limited company.

Many community and social enterprise organisations are established as Companies Limited by Guarantee (CLG's). However this legal form does not have any shares or shareholders, and does not allow dividends to be paid. For this reason, investment in these companies are donations with no expectation of a return.

Public Limited Companies (PLC's) are perhaps the most attractive legal form to establish a community energy project. In legal terms a PLC designates a limited liability company that has offered shares of stock to the general public, and the buyers of those shares have limited liability, and can be unlimited in number. They can also be established with bespoke memorandums and articles of association which can be written to include many of the principles of cooperatives with modern working conditions. There are no such companies yet established in Ireland.

In the UK and Scotland, there is a proud tradition of trusts. There are over 140 development trusts in Scotland alone, all set up to give their community a bigger say in the decisions that affect them through ownership or management of an asset, or through an active role in the overall development of their place.

Development trusts are community organisations which:

- are owned and managed by the local community,
- aim to regenerate the community sustainably, or address a range of economic, social, environmental and cultural issues within a community,
- are independent but seek to work in partnership with other private, public and other organisations such as charities,
- Are not run for profit.

Unlike other countries, energy cooperatives in the UK are largely limited to generating income for their members by selling electricity. UK Community Benefit Societies (or Bencoms) emerged in a context where market structures made it very difficult for energy cooperatives to supply electricity to their members, as they were being penalised by the regulator for this.

Bencoms operate similarly to cooperatives (see Edinburgh Community Solar Cooperative), including the one-member-one-vote principle. However, Bencoms differ from cooperatives in that a portion of the profit generated must return to the local community. In other words, it must generate benefits beyond the membership, which may consist of a geographically dispersed community of interest. As such, Bencoms often make grants available for local development purposes, that range from energy efficiency measures to educational scholarships.

THE EDINBURGH COMMUNITY SOLAR CO-OPERATIVE ECSC | SCOTLAND

The Edinburgh Community Energy Co-operative Ltd was formed with the aim of giving Edinburgh's residents a way to promote and develop renewable and low carbon energy production in the city. The founders looked into a lot of different possible legal vehicles for their project. What was important was that they could focus on delivering a large scale solar project to the city.The co-op that they formed in the end is called the Edinburgh Community Solar Co-operative (ECSC) and it is actually a bencom.

Primary School children celebrate the launch of Edinburgh Solar Coop.
© Edinburgh Solar Coop

The cooperative launched a share offer in 2015 to raise funds to install solar panels on a number of council buildings throughout Edinburgh.They used the community share offer model, ordinary people from across Edinburgh were invited to become members of the project by purchasing shares of £250, the share offer was a success, raising £1.4 million in total.

At the time of the ECSC's formation at the very end of 2013, Edinburgh had a lower number of solar panels compared to other cities across the UK. It was perceived that this was because many people lived in tenement flats with no access to the roof. Through the collective ownership of solar panels installed on community buildings, the ECSC offered Edinburgh residents a way of doing something positive about climate change, helping Edinburgh become a cleaner and greener city while also providing financial benefit to the residents and community as a whole. This was always the key thing, not what exact legal form the group took.

Today the cooperative continues to generate solar power from 24 host buildings in Edinburgh and return the profits to both their members directly and the community through their Community Benefit Fund which came into operation in 2018. They completed phase 2 with the installation of 6 more solar roofs.

The Edinburgh Community Solar co-op works closely with the local municipality. In 2012 the Edinburgh city council pledged to "encourage the development of community energy projects". The community solar co-op was one of the first to take advantage of this commitment.

CLUBS, TRUSTS & OTHER FORMS
CHAPTER 6

These different countries illustrate how several options often coexist, and how national contexts vary greatly. The main thing to remember is that legal structures provide the group with a recognised legal entity, independent from the individuals that form it, enabling greater accountability.

When you map out what's happening in your community, keep an eye out for what kind of legal forms exist, what works in your area, and discuss the pros and cons of various forms with people with experience. In the end, keep in mind that the legal form is not the most important decision you'll have to take — a structure is first and foremost a tool to achieve your aims.

How to set up a club- general guidance.
https://www.wildapricot.com/articles/how-to-start-a-club

Irish citizens information guide to setting up a club, with lots of universally useful advice.
https://www.citizensinformation.ie/en/travel_and_recreation/sport_and_leisure/setting_up_a_new_club.html

Check out the resources of the Scottish association for development trusts.
https://dtascot.org.uk/resources/publications

MUNICIPALITIES & LOCAL AUTHORITIES: AN IDEAL PARTNER
CHAPTER 7

Whatever the size and form of your group, it's important to work with your local government: the most successful community energy projects in Europe are those where groups collaborate with local authorities. Local or regional governments have everything to gain from promoting the scale-up of community energy in their area, and they can initiate new projects themselves.

However, despite the growing popularity of the concept across Europe, many cities are still struggling to move from ideas to action. Many local municipalities have committed to energy or climate targets, but reaching these can be a struggle. Often the ideas come easily, but making things happen is trickier.

Energy Cities, one of the organisations that produced this book, is a great place to start looking for contacts and helpful information. There are many resources and networks across Europe for progressive local authorities who want to be part of the energy transition.

This chapter provides you with an overview of the different stages of the process, and the levers available to become a community energy champion, whether you work for a municipality or wish to collaborate with one.

The first step for you, is to promote the concept to the council political majority. This will be the task of your group, and the municipal staff and local elected representatives that you work with. If your local authority has not yet signed up to the Covenant of Mayors you could start a mini campaign to encourage them to do so. Highlight the example of cities in your country that have signed up to the initiative, especially if they are considered front-runners.

MUNICIPALITIES & LOCAL AUTHORITIES: AN IDEAL PARTNER
CHAPTER 7

COVENANT OF MAYORS AND SECAPS

The EU Covenant of Mayors is a network of thousands of local governments who have voluntarily committed to implementing EU climate and energy objectives. In order to translate their political commitment into practical measures and projects, Covenant signatories are asked to submit a Sustainable Energy and Climate Action Plan (SECAP) outlining the key actions they plan to undertake.

All the local governments that have signed up to the covenant of mayors commit to three objectives.

- accelerating the decarbonisation of their territories,
- strengthening their capacity to adapt to unavoidable climate change impacts,
- allowing their citizens to access secure, sustainable and affordable energy.

To see if your local authority has signed up to the Covenant of Mayors check out:
https://eu-mayors.ec.europa.eu/en/signatories

Community energy projects can be seen by your local authority as too complex, or too different from the local authority's usual activities. Here are some arguments that can overcome a municipalities initial reluctance when you start working with them:

1. Trust in cooperatives and other community-oriented projects is often built quickly, and both entities can become long-term partners, building their capacity mutually. As both the cooperative and the local authority are mission-driven rather than profit-oriented, they share the same long-term objectives. In Belgium for example, several cities have gained expertise and benefited from the support of the energy cooperative Ecopower to develop and activate their Sustainable Energy and Climate Action Plan (SECAP).

Covenant of Mayors
for Climate & Energy
EUROPE

2. Community energy schemes bring many local benefits beyond contributing to climate objectives. Projects designed and carried out by energy communities with strong democratic governance structures don't just reduce CO_2 emissions, they also contribute to other strategic local policy objectives. Projects that are steered by local cooperatives or non-profit foundations have helped local and regional authorities to:

- Improve energy efficiency and reduce energy poverty, either through cheaper tariffs or dedicated schemes to actively involve and support vulnerable consumers (see chapter 15 on energy efficiency and combating energy poverty).
- Enable a more active form of local citizenship, as these initiatives encourage inhabitants to feel more involved and concerned about their neighbourhood, encouraging them to engage in other sustainable activities such as urban agriculture, recycling initiatives, repair cafés, shared mobility and so on.
- Boost local economic development, as projects owned by local community members can contribute up to 8 times more to local added value creation.

There are various ways through which local government can either support or directly engage in the development of community energy.

One important first step is to ensure local authorities politically commit to community energy development, with long-term plans and roadmaps. This can include pledges to more directly include citizens in climate and energy policy-making (through the organisation of debates and dialogues, the launch of participatory budget schemes, etc.)

Local and regional authorities can also adopt concrete long-term objectives related to energy production, such as a specific target to quantify community-owned renewable production capacity, in megawatts or as a percentage, within a certain timeframe. Sustainable Energy and Climate Action Plans (SECAPs) are an example of this, discussed in more detail below. Political commitments can also go beyond energy — Edinburgh's City Council has pledged to support cooperatives in general for example.

HOW OCCITANIA IS BECOMING A FRENCH HUB FOR CITIZEN ENERGY OCCITANIA | FRANCE

The French Region of Occitania started to offer financial and logistical support for citizen energy projects in 2014 and it became home to the first two 100% citizen-owned PV parks of the country ("1,2,3 Soleil" and "Le Watt citoyen"). The local government of the region has committed to becoming the first Positive Energy Region in Europe by 2050.

In order to reach this ambitious objective, they regularly launch calls for citizen energy projects in cooperation with the French Environment and Energy Management Agency

The cooperative "Citizens' initiative for an alternative energy" (ICEA) brings together 364 citizens committed to make the world better. They installed solar panels on the roofs of public buildings for their city. The project benefited from the support of ECLR Occitanie, as well as financial assistance from the region. © **ECLR**

(ADEME) to financially support the creation of local energy cooperative and citizen-owned energy companies. Together with ADEME, they also established the network ECLR (Energies Citoyennes Locales et Renouvelables) in 2014, to support knowledge sharing and create a space for discussion among citizens in Occitania. Today, ECLR brings together more than fifty project leaders - citizens, professionals and communities - engaged in the development of citizen and community renewable energy and acts as the main info point on community energy in the area.

Thanks to the regional support, community energy projects have been flourishing! Since 2014, 46 projects have been awarded, many of them already producing renewable energy with around 3000 citizens of the region and 40 communities involved. A total of €800,000 in regional aid has been allocated and has generated €2.6 million in local investment.

WHAT CAN YOUR MUNICIPALITY DO?

1) FAVOURABLE REGULATIONS FOR CITIZEN AND COMMUNITY ENERGY

Local and regional authorities can adopt specific land-use or buildings-related regulations that favour the development of citizen or community-owned energy sources. This could be key in getting your project to completion.

- Barcelona was the first city ever to adopt a “solar thermal ordinance”, making it compulsory for new and renovated buildings to supply 60% of their hot water requirements through solar energy.
- In Denmark, where most of the heating systems are community or municipally-owned, local authorities can mandate that existing and new buildings must connect to the district heating network.

Regulations and subsidies supporting community energy are highly dependent on an adequate legal framework at the national level. According to new EU legislation, member states must guarantee the development of this framework, following an in-depth assessment of the opportunities and obstacles linked to community energy in their country. They are also required to build local authorities’ capacities in this field.

MUNICIPALITIES & LOCAL AUTHORITIES: AN IDEAL PARTNER
CHAPTER 7

2) RAISING AWARENESS

Energy literacy is another important concept to consider: the more people are engaged in activities related to energy, the more they understand the overall energy system. Your local authority can be key in supporting energy literacy. Sharing your technical expertise, not just with fellow citizens but also with the city, will be crucial to engage this local actor.

3) BUYING POWER OR HEAT FROM COMMUNITY PROJECTS

To meet the energy demand of all the public buildings they operate, local authorities can favour "green" but also "community-based" energy procurement. In Belgium, many cities in the Flanders region have started developing preferential criteria in their public tenders for citizen-owned energy supply. This was the case of the city of Eeklo, which commissioned the construction of a district heating network with a minimum of 30% citizen ownership.

Another option to be considered for high energy consumption public facilities is to sign direct Power Purchase Agreements (PPAs) with energy communities. These long-term contracts provide investor certainty to communities: allowing them to benefit from a stable revenue stream (based on a fixed electricity price over a long-term period) in the absence of dedicated support schemes.

4) FINANCING AND GUARANTEEING PROJECTS

One common obstacle faced by community energy projects is access to credit. Local and regional authorities can be crucial in providing guarantees for financial institutions. Their participation in energy communities can also reassure hesitant investors by giving additional credibility and legitimacy to the projects. Local authorities can also provide seed funding, for example through a revolving fund for community projects.

In addition, they can also dedicate specific budget lines to support community groups every step of the way, from the initial feasibility and planning stages to actual investment in the infrastructure, this is the case for example of the successful CARES scheme in Scotland.

HOW SCOTLAND SUPPORTS COMMUNITY ENERGY

CARES | SCOTLAND

The CARES scheme, funded by the Scottish government and administered by Local Energy Scotland, gives grants to energy communities to finance different project development activities — including feasibility studies, permitting procedures, community engagement activities, even capital costs of renewable energy projects.

Following the motto "feasible, permittable, profitable", this scheme helps communities through the first, often lengthy and expensive steps to setting up their own renewable energy project. If the project sees the light of day, these grants turn into loans that will gradually be paid back by the community.

Ratho Primary School, Scotland.

MUNICIPALITIES & LOCAL AUTHORITIES: AN IDEAL PARTNER
CHAPTER 7

5) SHARING MUNICIPAL STAFF AND RESOURCES

As large owners of public buildings, land and infrastructure, local authorities can also grant dedicated space to community projects, for example by offering the rooftops of buildings they own. This is the case of the Edinburgh Community Solar Co-operative. Councillors sitting on the board of the Bencom helped navigate various committees and processes.

Another possibility is human resources, especially as energy cooperatives often depend on inexperienced, voluntary citizens to put their projects together. In the UK, the Plymouth City Council supported the creation of the Plymouth Energy Community (PEC), by allocating staff to design a business plan and support the recruitment of 100 founding members.

For community heat projects, municipal authorities can also provide access to municipal waste, or other types of bioenergy resources.

6) DEVELOPING SUPPORTING PLATFORMS AND TOOLS

Local and regional authorities can give crucial support to community energy projects by designing dedicated supporting tools and programmes. In Ireland for example, Dublin's energy agency coordinates support to over 80 energy communities by appointing a "coordinated mentor" in each local authority of the Dublin region, to guide them through a three-step process called "Learn – Plan – Do".

Mapping potentials is yet another fairly straightforward way to help citizens and cooperatives get started, by providing an overview of local deposits in terms of renewable energy. In Lisbon, for example, the city developed a solar cadastre. Other cities are developing heat atlases to do the same with waste heat or geothermal energy.

7) FACILITATING DIALOGUES BETWEEN LOCAL STAKEHOLDERS

Small energy communities may have useful contacts and resources, but local authorities can have a bigger reach. The local authority can be very helpful in putting you in touch with relevant economic players, and other societal, environmental or energy actors in the area.

Energy agencies can also be involved, as they already work closely with cities in many cases and can support the establishment of community energy schemes — whether to find members, funders, fuel providers (like bioenergy crops in the case of heat cooperatives) and crucially, to build a good relationship with the distribution system operator. In Grenoble, France, for example, the metropolitan authority helped the local energy community sign a cooperation agreement with the distribution system operator Enedis.

8) BECOMING A DIRECT MEMBER OF AN ENERGY COMMUNITY

Lastly, but strategically, EU legislation now encourages local authorities to become actual members and shareholders of energy communities, together with their citizens and local SMEs, without taking full control. They can do so in the field of energy generation, but possible activities span all energy services, from mobility, energy efficiency, aggregation, balancing, etc. For more information on the criteria and specificities linked to the legal definition of energy communities, see the definitions box on page 30.

THE LONG ROAD TO CREATING A COMMUNITY WIND PARK IN NEUENKIRCHEN | GERMANY

The Neuenkirchen wind project is a large community wind project in the federal state of Schleswig-Holstein in Northern Germany. It consists of twelve 3 MW wind turbines across three sites. The project produces income for the farmers, landowners and for the local community through a Bürgerverein or benefit-sharing civic association. It was initiated by these local farmers and landowners in 2007 because they wanted to diversify their own income and to bring added value to the local rural economy.

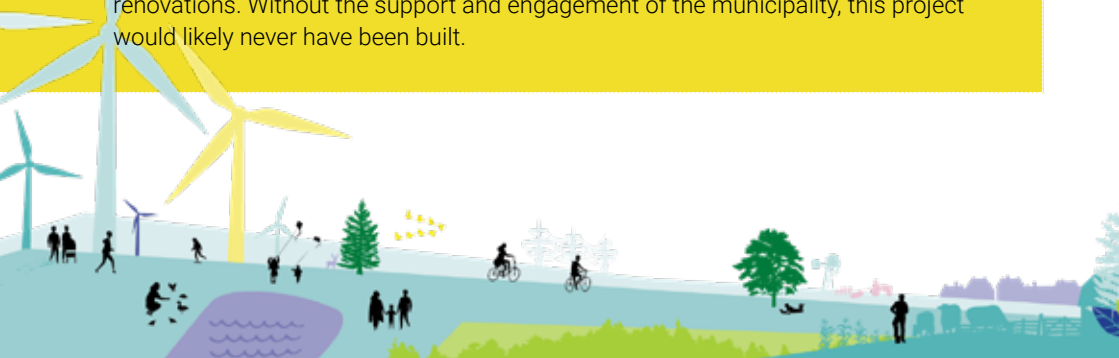
The manager of the Neuenkirchen windfarm with members of local clubs that they have supported with financial profits from the windpark. **© Neuenkirchen**

The initiators of the windfarm in Neuenkirchen, Schleswig-Holstein.
© Daniela Wehrmeier, Neuenkirchen

The former mayor and parts of the municipal council were against the proposal of a group of local landowners who wanted to develop a community wind farm. Without support at the local municipal level the project was blocked.

The project initiators realised that they needed to put more effort into community outreach and relationship with the municipality. They realised that many other municipalities in their area were involved in wind projects and were benefiting significantly from them. This was a useful way to get the local council on board.

The situation changed after the local elections of 2008, and a new mayor was elected. The mayor was interested in this project and encouraged the farmers to set up the benefit sharing civic association. However, a local opposition group was also founded that further slowed the project. In this case, the support of the municipality became even more vital. However, 2 local referendums in 2009 and 2011 were necessary to finally approve the suitable areas for the wind park in the respective regional plan. Following the approval of the regional plan, the operating company "Citizen Wind Farm Neuenkirchen" was established in 2013 and the farm was commissioned 2 years later. 34 landowners now receive financial compensation for the use of their land via a land lease pooling model, allowing also landowners in the surroundings of the wind farm to profit from it. Citizens could directly become partners in the project with limited liability. 145 citizens from a total population of approximately 1,000 became limited partners. The municipality also obtained shares of approximately 20,000 Euros in the wind farm, the maximum legally allowed, to show its commitment to the project and the trustworthiness of its initiators. In addition to business tax revenues for the municipality, in 2016, a civic non- profit association was established, receiving 1 of the wind farm's annual gross remuneration. While the biggest benefits from this project go to the local farmers and landowners, the "Bürgerverein" ensures that there are benefits for the community as a whole. Things they have supported in the past include the purchase of community busses, PC-equipment for the local school, and even church renovations. Without the support and engagement of the municipality, this project would likely never have been built.



MUNICIPALITIES & LOCAL AUTHORITIES: AN IDEAL PARTNER
CHAPTER 7

How local Authorities can encourage citizen participation in energy transformations. https://energy-cities.eu/publication/how-local-authorities-can-encourage-citizen-participation-in-energy-transitions/

How cities can back renewable energy communities. https://energy-cities.eu/publication/how-cities-can-back-renewable-energy-communities/

ICLEI resources on building to 100% renewables. https://iclei.org/100recitiesroadmap/

Democratic transition factory Involving citizens in Europe's energy transition (in French). https://energy-cities.eu/publication/fabrique-de-transition-democratique/

The LICHT methodology. https://www.rescoop.eu/toolbox/the-licht-approach

The REScoop municipality approach. https://www.rescoop.eu/toolbox/the-rescoop-municipality-approach

Exploratory study of public initiatives working on the issue of remunicipalisation (UK). https://www.rescoop.eu/toolbox/local-energy-ownership-in-europe

The SCCALE 20 30 50 Community Energy Municipal guide. https://energycommunityplatform.eu/wp-content/uploads/2023/01/SCCALE-Municipal-Guide-Final-view.pdf

THE LIFE OF YOUR GROUP

Communities are stronger when they work together.
© Rawpixel.com /Shutterstock

BUILDING UP YOUR TEAM
CHAPTER 8

Community energy projects always need more people like you with fresh energy and good ideas to get involved and help take the project forward.

Maybe something is already happening in your area that you can get involved in. You could help your existing local energy company branch out into a new activity, such as wind or electricity supply. Or maybe you could start with an existing community group that might be interested but hasn't got involved in local energy. It's always easier to join something established, with existing resources, rather than start from scratch yourself. It's possible that a very small group exists without you knowing, so make sure to thoroughly research what might be going on already!

If there isn't anything going on, things depend on you. The biggest community energy projects start from small meetings and small conversations. Ecopower, one of Europe's biggest energy cooperatives, started with a conversation around the kitchen table in a watermill. Take the first step. Even if it's just one or two people in your community who might be interested, meet them for lunch or coffee to chat about your ideas.

START SMALL, GROW BIG

Community energy initiatives come in many different shapes and sizes, and are in fact as diverse as communities themselves. Some are relatively small, have fewer members and pursue only small-scale renewable energy projects (typically solar panels) or energy sharing schemes. There are also extremely large energy cooperatives such as Ecopower (Belgium), which as of 2019 had almost 60,000 members, owned 22 wind turbines, 3 hydropower installations, 322 solar installations, one cogeneration installation using rape seed oil and a wood-pellet factory.

Experience shows it's easier to convince wider members once your first project is up and running, or when members are given the opportunity to use the energy directly. Momentum builds on itself. When people see the project's success, they want to get involved. Often projects struggle to sell shares in their first share offer, but then when they start to build infrastructure, the next share offer is oversubscribed. People are naturally more likely to invest their money when they see a project has a track record.

Even if you have very big plans, for multiple wind projects for example, it's always good to start small. You could start with solar panels on a school, or with an energy saving programme in a neighbourhood. These projects won't necessarily be easy, but they will help you build up the trust and recognition you need to grow into something bigger, like a wind project or grid ownership.

BUILDING UP YOUR TEAM
CHAPTER 8

BUILDING TOGETHER

An important principle to bear in mind throughout this process is to be flexible with your ideas. You need to strike a balance between having an inspiring idea and being open-minded, to be able to adapt to what others want to do, find out what gets them inspired and excited. Strike this balance and you are on the road to success!

Ask them what their ideas are, what their vision is. Make sure you are actively listening as much as you are talking: you want to grow ideas together. Have a pen and a piece of paper handy, and don't be afraid to start scribbling or drawing together. Get excited!

You could also discuss who else in the community might like to get involved. Who do you know who gets things done? Who takes responsibility in your community? Write down a list of people you would like to contact about your ideas. Be aware you don't just need retired, grey-haired male engineers, but a diverse group of volunteers who can bring different skills, connections and ideas to the table. Always agree on next steps together at the end of each meeting.

YOUR CORE TEAM

Ideally you are looking to build up a core group of people who will share responsibility for the project over the long term. This could be from 4-12 people, but the more you have in your inner team the better.

You will want people in your core team to like each other! You need to build up strong trust relationships so that you can all support each other and show leadership in the project. It's also good practice to make sure you and your team provide each other with safe spaces, where people feel they can easily express their thoughts and ideas without censoring themselves.

Make sure you take the time to build social bonds in your core team: have meals together regularly, or do things that build up friendship and trust. It's important to take the time to understand each other's motivations and what "makes you tick", this will help you better share tasks and responsibilities. You can also start with creating a vision board, where you can explore your ideas together to build your project.

WORKING WITH THE MUNICIPALITY

It's good to find out early on who's responsible for energy in your local municipality. A good next step is to meet that person together, and hear their ideas and plans for the local municipality. If you are gathering a small group of interested people together, you could also read over the Sustainable Energy and Climate Action Plan (SECAP) that your city has to submit within two years of their joining the Covenant of Mayors, or similar plans, like the Masterplankommunen in Germany.

SECAPs can be overwhelming to read, to process every detail about your city's plans. You can split up the text amongst your team members to work more efficiently. Then you can all meet up to share what everyone has learned and discuss how you could support your city's commitments to EU climate and energy objectives. This reduces the workload for everyone, as people have other commitments in their daily lives — which is something you should be mindful of throughout the process.

CAMPAIGNING FOR POLITICAL COMMITMENT FROM LOCAL GOVERNMENT

The most important thing to do is to get your local authority to make a public commitment to renewable energy. This can be any kind of commitment to support local renewable production involving citizens in the effort.

Organizing, People power change.
https://d3n8a8pro7vhmx.cloudfront.net/themes/52e6e37401925b6f9f000002/attachments/original/1423171411/Organizers_Handbook.pdf?1423171411

BUILDING SOLAR FROM THE ASHES | UKRAINE

The worst nuclear accident in history remains Chernobyl - the explosion at the Chernobyl nuclear power plant in Ukraine in 1986, which caused over 10,000 deaths and lasting health impacts all over Europe. On the accident's 34th anniversary in April 2020, overshadowed by wildfires in the radiation-contaminated exclusion zone, Ukraine's president paid homage to the "heroes who saved the future from the danger of radiation".

The phoenix rising from these ashes is the young city of Slavutych (population 25,000). Slavutych was purpose built from scratch in a forest in northern Ukraine for the evacuated employees of the power plant and their families, and from the start, it brought together highly skilled engineers, technicians and new ideas.

In summer 2018, a small group led by Andrij Zinchenko wanted to change the image of the region and brought their proposal to the mayor. "Instead of clinging to the Chernobyl memory, we wanted to reinvent the city. In a spirit of self-reliance, we wanted to show you can care for the community while providing economic opportunity for everyone."

HOW SLAVUTYCH SWITCHED TO COMMUNITY POWER

With the mayor's support, Andrij and his friends built up Sonyachne Misto (Solar Town), a solar cooperative in the city of nuclear engineers. Solar Town demonstrates how energy

innovations can benefit the community thanks to energy-saving, local renewables, easier grid connection procedures and education programs for other communities.

The cooperative was registered in 2018 as the first of its kind in Ukraine. Now, it unites 97 members who own three solar plants. Every shareholder starts with an investment of at least €500, and every €1,000 invested brings an annual return of about €130 until 2030. This makes investing attractive for a broad range of people, not just the wealthy.

Andrij is clear about their target audience. "People from the area could invest first. We are proud that the first investor is a local woman, an energy manager, and two of our largest shareholders are in their twenties."

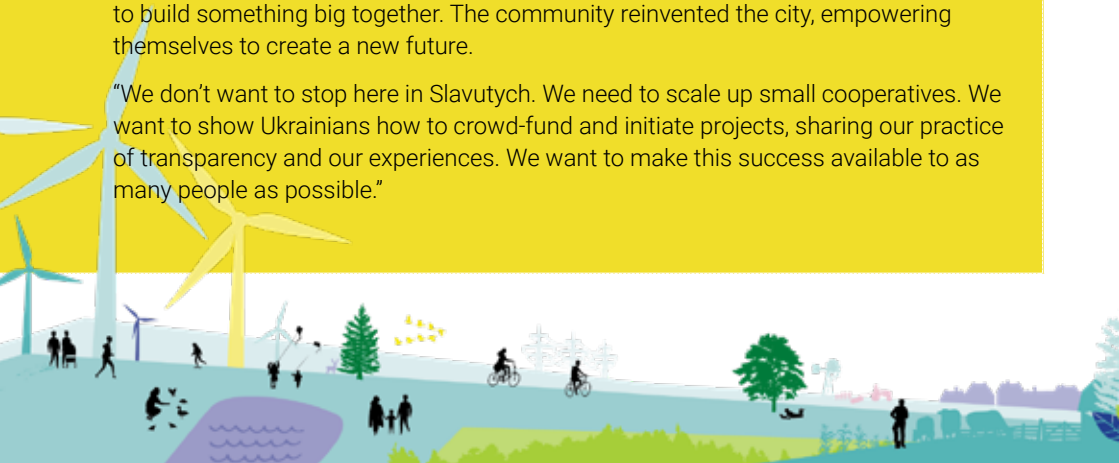
He insists that Solar Town is not just commercial, but a project with great social impacts. "Solar Town gives away 5% of its annual income for city development. This is an integral part of its statute and philosophy. We believe in giving back to the community."

THE KEY TO SUCCESS

The team of Solar Town, with the help of local engineers, successfully completed the construction of all three planned solar power plants, raising €145,000 in just four months, and getting ready to finally launch the project. The key to their success? "A good financial plan, a legal model, permission from the local provider, and support from the mayor and the community. The most important factor is transparency: we show all our plans to everyone and answer every question openly."

While Andrij put a critical amount of energy into that project over the past few years, the mission to create a flourishing community with a future-proof energy model continues to motivate him. Solar Town is an example of people overcoming challenges to build something big together. The community reinvented the city, empowering themselves to create a new future.

"We don't want to stop here in Slavutych. We need to scale up small cooperatives. We want to show Ukrainians how to crowd-fund and initiate projects, sharing our practice of transparency and our experiences. We want to make this success available to as many people as possible."



GROUP DYNAMICS
CHAPTER 9

In almost all groups that are trying to change things, some difficult dynamics can emerge. It is likely that at some point there will be disagreements and even conflict. Don't let this discourage you, it is part of the life of the group and there are many tools and tricks for getting around these problems.
Be prepared for it to happen, and be ready to deal with these situations with patience and understanding.

BRIDGING DIFFERENCES

Be flexible with how you approach group work so that everyone can participate fully. For example, be prepared for people arriving with different expectations about behaviour in meetings: how formal they should be, how long should people speak, how acceptable it is to show when you are angry. It might take time to learn to work together. And if someone's style is different from yours, that doesn't mean one of you is "wrong" !

In addition, be mindful of the various capacities, personalities and abilities that exist in your team. For instance, some members may be very passionate about the project and take up time and space, resulting in other members not expressing their thoughts.

A great way to establish boundaries and rules on how to work is to agree on a basic "Ways of working document" where you decide as a group how you want to work together. Come back to the document from time to time, and make sure to share it with new members.

There may also be conflicts over vision, if someone wants to work with a conservative party for example, and others in the group don't support this approach. It's important to always take time to work things out as a group, and accept that everyone will have to compromise at some point. It's also important to understand that people carry baggage from their personal life or habits from preexisting relationships into a group. Don't take things personally, but find ways to keep the group moving forward. Having an agreed set of values and guidelines for the group can also be very helpful.

POWER DYNAMICS IN THE GROUP

Groups set up because they have more power together — whether to stop open cast coal mining or put solar panels on municipal roofs. However, sometimes power is unequally distributed within a group. This is not surprising as it reflects our divided society, unequal and competitive. Finding new ways of behaving can be a life-long journey.

At times power will be consciously given to individuals: a group elects a committee which will make decisions on behalf of others for example. Power could also be delegated for a specific task, for example someone experienced in catering could be appointed head chef for a fundraiser. But in some cases, individuals accumulate power without the conscious consent of the group. This is where problems start to develop. Be conscious about informal power, and how it is distributed in your group.

GROUP DYNAMICS
CHAPTER 9

CHECKLIST | INTERNAL POWER DYNAMICS

- ☐ Develop a culture of noticing and bringing up power imbalances. Address problems early on.
- ☐ If you disproportionately shape decisions, look for ways to redirect some of your energy towards supporting others. For example, if you are able to communicate clearly, you could support other people to express themselves, for example by asking open questions. If you try this and other people still don't seem relaxed and engaged, try speaking less and see what happens.
- ☐ Be ready to challenge people if you feel able. How best to do this depends on many factors. If you are feeling hurt, vulnerable and angry you have the right to say so, regardless of whether someone might get defensive or dislike the way you say it. Showing strength of feeling may also help them see the impact of their behaviour.
- ☐ Think about what the other person will find easy to hear. Especially if you are challenging someone on a behaviour based on a privilege that you share, be careful of trying to score points, or proving you are more politically conscious or "right". Approaching someone with compassion and acknowledging your own mistakes may help them hear what you are saying.
- ☐ Some people may not feel comfortable addressing their concerns in front of the whole team: be mindful of this and make sure that leadership within your team means regularly checking in with these people.

Community energy projects are about building community just as much as they are about building a wind turbine or another type of energy infrastructure. You're in for the long haul, be patient and compassionate, and be prepared to not always get what you want.

Seeds for change have many useful resources, on facilitation, group dynamics and other aspects of group work. https://www.seedsforchange.org.uk/resources

Several interesting resources about group dynamics and personal development here. https://www.thechangeagency.org/campaigners-toolkit/training-resources/personal-development-life-skills/

The Ecopower team visiting a wind turbine of their neighbor cooperative in Wallonia 'Vents du Sud'. © **Ecopower cv**

SUSTAINING YOUR GROUP
CHAPTER 10

As you may begin to realise, building a community energy project takes time. It is not a quick campaign that you can win overnight, as it's always the case when you are creating deep and lasting change for your community and the energy system. This means that your group will need to be strong to continue working together.

In the previous chapter, we shared tips to deal with problems when they arise: it's good to be prepared and accept that at times, there will be problems. However even in a seemingly healthy group, it's good to nurture the team spirit and make sure you are actively doing things to keep people engaged and inspired, and to bring new people into your core team.

If you join an existing community energy group (which is almost always more effective than starting your own project from scratch), spend a few months observing how things work and what kind of culture already exists. Notice who is happy and who might be in danger of leaving for whatever reason. You can then start to make suggestions and work with people who nurture the team.

You can look into tips from groups which practice community organising, who have a long history of working to build power in their community. You can find resources on this topic on the Leading Change Network's website, or check out the work of Margeret Lewith or Saul Alinksy.

One of the most important things is that people stay inspired and remember why they are doing this work together. As Ursula from the OurPower cooperative says in the success story in the next chapter: "The most inspiring thing is to create change. You can't do it alone, but if you have a trusting, focused, team of people who know each other well, you can change the energy system together."

A CORE TEAM OF LEADERS

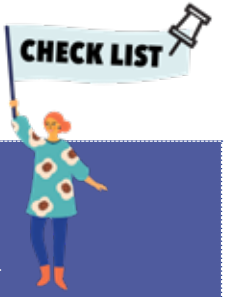
It is useful to think of your core team of people as a group of leaders working together. Try to ensure that responsibility to reaching out to different parts of your community is shared among the team. For example one person might have good contacts to farmers, or even better be a leader among the local farming community. One person might be an active parent in the local school and be respected as a leader in that part of the community.

When we talk about leadership, we mean the kind of leadership that is about facilitating and empowering others, as opposed to leaders who behave like divas or whose motivation is power and authority over others. In our vision, leadership rhymes with responsibility, the people who make sure things happen, who care that new people join the group. Leadership is the foundation of good organising. Develop your own, and support the leadership of others.

UNDERSTANDING GOOD LEADERSHIP

A good organising project cannot succeed with a single leader, it requires a core team of leaders. Try to make sure you have a core team of 4-12 people who are taking responsibility and supporting each other. A good core team is like a snowflake, with each member reaching out to others in the community, who can then reach more people themselves. Just like a snowflake, it should be strong. Don't be afraid to think of yourself as a leader, and think about ways to develop your own leadership. How are you supporting others to feel fulfilled in the project? Can you take more responsibility to ensure everyone feels momentum and inspiration?

SUSTAINING YOUR GROUP
CHAPTER 10



CHECKLIST | IDEAS TO SUSTAIN YOUR TEAM

- [ ] You will need a core team that cares for each other to go the distance. Take the time needed to build up trust internally.

  Find the right rhythm of meetings for your group (for example every month).

  Make sure meetings are well facilitated and don't run on forever. Long ineffective meetings will exhaust people — it's a sure way to bring down motivation and lead people to leave the group.

- [ ] Make sure that good notes are taken in each meeting, and shared.
- [ ] Agree as a group that everyone does what they commit to. Progress towards your objectives is crucial to keep everyone excited. Even if community energy projects don't get established straight away, it's good to ensure that there is always a sense of momentum in the group.
- [ ] Bear in mind most team members will have obligations outside of the project, such as school, wage work or care work. Being a part of the project is an additional task that can be difficult for people to manage.
- [ ] In addition to meetings, plan fun activities where team members can have fun together. This can act as a break from the heavy work that you've been doing and you all deserve to reward yourself for taking action to democratise energy!

A video about Organizing and Leadership.
https://www.youtube.com/watch?v=dkP4V3602IE

The leading change network has a great set of resources on everything to do with Organizing and creating apowerful group.
https://leadingchangenetwork.org/resource_center/guide-to-organizing/

How activist groups can build trust, care, and sustainability.
https://briarpatchmagazine.com/articles/view/be-careful-with-each-other

OUTREACH TO THE WIDER COMMUNITY
CHAPTER 11

Even though it seems very obvious, a community energy group needs to reach out to its community. Make sure these efforts are consistent, remember our communities are diverse, and make sure you are reaching out to different parts of your community, not just those the dominant spaces.

There are several things you need to consider when communicating the benefits of community energy to people, including your language, tone and approach. Think about how these will be received by different parts of your community, such as people who are older, or maybe speak other languages.

COMMUNITY WORK IS LISTENING WORK

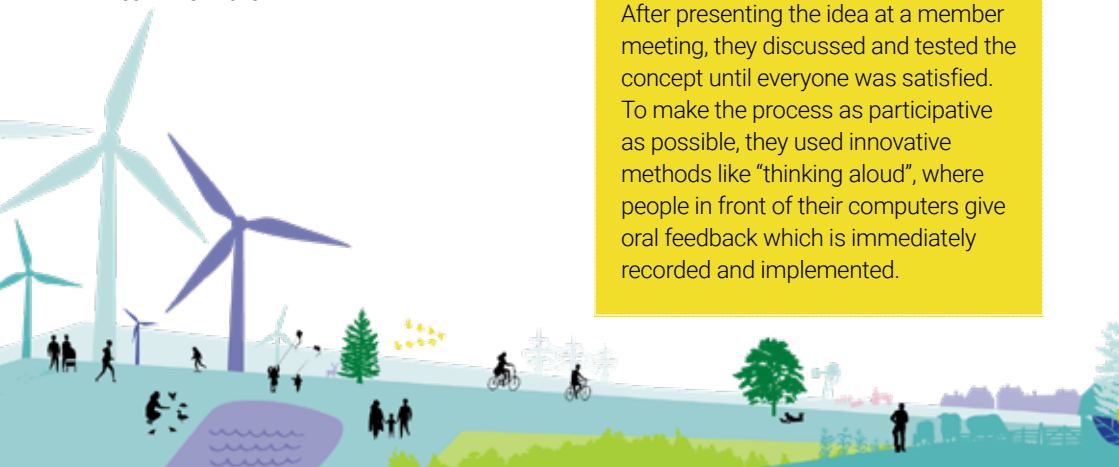
Being involved in a community project means becoming a very good listener. You should be present in your community often, observing and learning. To understand the issues that affect members of the community, get to know people and listen to them. Take the time to listen to their stories, about themselves and their communities.

Develop your listening skills and your trust skills. If you want to understand what makes people happy, worried, inspired or proud, you need to be skilled at the art of relaxed, informal conversations that build empathy and trust. This will allow you to deeply understand the bigger issues that are affecting people's lives.

Spontaneous conversations in the community happen everywhere — in food markets, shops, on buses and trains, at the hairdressers, in cafés, supermarkets, schools and community centres. Go to these places and listen. Recognise what the common themes are, and link them to your own story about energy, climate and local economy.

Write a list for yourself of "listening spaces" in your community, and what you see as the common themes of the community. You can learn more about a community development approach to these kinds of stories in the book "Community Development in Action" by Margaret Ledwith.

Another important element is reflecting on who you might like to involve in your project. There are people in every community caring for others and empowering others. When you meet them, consider involving them in your energy project, or think about what you could learn from them.



SUCCESS STORY

FROM BRAINSTORM TO ONLINE PLATFORM

OURPOWER | **AUSTRIA**

It all started with three friends, Ulfert, Norbert and Peter, who had always been fascinated by renewable energy and its potential for the future. In February 2018, Ursula joined their circle, and they brainstormed on ways to bring energy closer to people to achieve the energy transition. An idea was born: an online marketplace connecting people interested in green local electricity. The group's expertise, motivation and contacts across Austria helped them create OurPower in 2018.

OurPower, Austria's first energy cooperative, kicked off with 19 people eager to be the energy transition. Envisioning a place where energy producers and consumers could meet and exchange, they developed the concept of an online platform. After presenting the idea at a member meeting, they discussed and tested the concept until everyone was satisfied. To make the process as participative as possible, they used innovative methods like "thinking aloud", where people in front of their computers give oral feedback which is immediately recorded and implemented.

FROM BRAINSTORM TO ONLINE PLATFORM OURPOWER | AUSTRIA CONTINUED

OurPower's platform allows producers to sell their renewable energy directly to friends and neighbours for a fair price. Everyone interested can find out in 3 clicks where their energy is coming from and where their money goes. Ursula explains: "We want to connect people and bring energy as close as possible to them. Energy should not be a dry, technical issue. It's a social issue, about connecting lives, making choices and our well-being."

Ursula's dream came true. An expert on online platforms and participation, she can now implement the concept technically and visually with her partners. Her goal is to encourage people to exchange their thoughts and ideas to achieve the energy transition, online, but also in person. Throughout the pandemic, OurPower has been organising webinars and online dialogues to discuss emerging topics with interested people, to strengthen relationships. "The most inspiring thing is to create change. You can't do it alone, but if you have a trusted, focused, team who know each other well, you can change the energy system together."

Peter, one of the OurPower founders, and Kathi on their solar rooftop.
© OurPower

REACHING OUT TO THE COMMUNITY FOR AN INCLUSIVE ENERGY TRANSITION

Ursula put a lot of thinking into OurPower's target audience and ways of reaching them. First, the cooperative hosted several events to inform people and motivate them to take part in the energy transition. They also launched surveys, created 8 personae (fictional representatives of actual users of the platform), and discussed their target group's lifestyles, preferences, opinions and resources.

While OurPower encourages everyone to join, the surveys revealed that they mainly reach people who have college degrees, a steady income, a family and are home-owners. A good start, but OurPower is now focusing on building a more diverse audience, to include women and young people especially. As Ursula says, "Young people are really important for us. We want to build up better relationships with them and understand their needs. We want to learn from them and respond to their questions. One idea we have currently is a pub-quiz on climate and energy issues."

COMMUNITY ENERGY IN TIMES OF A PANDEMIC

What's next? OurPower wants to make the platform more dynamic and participatory, and adapt to current technological developments. Ursula would like to enable more energy communities to share their knowledge, raise awareness and communicate publicly, to build up relationships of trust between diverse people. While the cooperative will continue to connect people and support them in producing renewable energy for each other, they also want to work more on people's energy consumption patterns.

The Coronavirus health crisis has made their work more difficult. While many things can happen online, exchanging experiences and building up relationships remains a challenge. Since face-to-face meetings are difficult to organise and OurPower doesn't want to bombard their clients with emails, they call people individually. A new idea to strengthen the community are pop-up spaces, offering potential new members a Corona-safe environment to meet up individually or in small groups, to get to know OurPower.

VISION WORKSHOPS IN KRIZEVCI | CROATIA

One great way to reach out to the wider community is to hold a larger participatory workshop, bringing the community together to create a shared vision to develop their neighbourhood. In Krizevci (Croatia), this approach helped set up an energy community in collaboration with the mayor of the city, with the support of the Croatian energy cooperative ZEZ. A number of ZEZ-members were living in Krizevci at the time, or were from Krizevci originally, so they knew the local context and people in their community.

Workshop participants "Križevci 2030- Let's plan the joint development of Križevci in the next 10 years", July 2020. © ZEZ

The first thing ZEZ did was to talk to people in the city informally, to see if there was an interest in setting up an energy community. Once they felt they had a good group of interested individuals, they organised a workshop over two evenings, from 7:00 to 9:00 PM to accommodate people's work and family schedules, to bring all interested people together and talk about their ideas for an energy community.

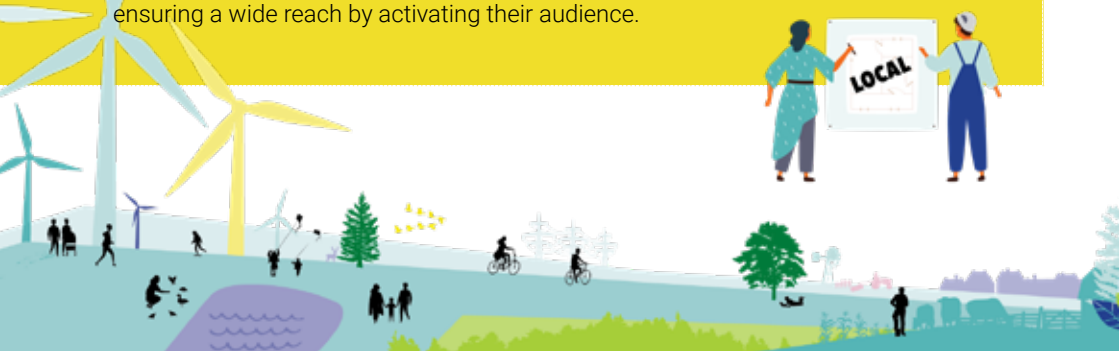
In the case of Krizevci, people were already well informed about the subject. The city had participated in an EU project which set up a collective self-consumption scheme on an old industrial building, working with local SMEs and the municipality. The community understood the concept, and knew it could work.

The first meeting included a vision board, where the group formulated their objectives. From there, they worked back to the present, outlining milestones to reach their objective and specific actions needed. At the end of the first evening, the group had an outline for their statutes and a mission statement.

The second session was used to determine what legal form would be most appropriate for the community project, and what economic and governance model they wanted to choose. This included questions like the cost of a share, how many shares you needed to acquire at minimum, or the voting weight per person.

The people in Krizevci eventually decided on a cooperative, which would receive substantial support from the municipality but remain independent from it. The second evening ended with a first vote by the group to create the cooperative: all twelve workshop participants unanimously agreed. ZEZ then supported the group with writing the statutes and setting up the cooperative legally.

In terms of funding, the most effective method in Croatia for community projects is crowdfunding. In the case of Krizevci, the cooperative organised the crowdfunding campaign, with ZEZ supporting the administration of the funds. The communications campaign was key to engage citizens: ZEZ used their own communications channels, ensuring a wide reach by activating their audience.



OUTREACH TO THE WIDER COMMUNITY
CHAPTER 11

Community visioning workshop prep tool.
https://arlingtonva.s3.dualstack.us-east-1.amazonaws.com/wp-content/uploads/sites/31/2016/11/4MRV_Nov16WG_WorkshopPrep.pdf

Stakeholder engagement tool from REScoop.eu.
https://www.rescoop.eu/toolbox/guide-for-stakeholder-management

CHOOSING YOUR ACTIVITY

German citizens participate in the Energiewende.
© Jörg Farys

Energy communities can engage in a broad variety of activities — the key is to find the one that suits your community's needs and possibilities best. This section will help you find inspiration and learn from existing community energy projects. Let's go!

ELECTRICITY GENERATION
CHAPTER 12

Community energy groups often start off thinking about producing energy. This makes a lot of sense because it has a big impact and brings many positive benefits:

- It directly increases the amount of renewable energy in the system, replacing polluting fossil fuels,
- It provides the community with an income once the upfront investment has been recovered.
- It helps build the 100% renewable energy system we need.

The type of energy source depends on your community's resources and preferences. You can also start with one type of technology and add others as you grow. For example start with solar panels on a school, and move to wind production when you gain more experience.

Here are the key questions to get you started.

1) WHAT ARE THE RESOURCES IN MY AREA?

Start by mapping out the natural resources available: where does the wind blow in your

area? Where would people be happy to have windmills or solar panels? What rooftops are south or west-facing and get a lot of sun?

Keep in mind the locations you choose will have an impact on how much money your project makes. You will need to make sure that you will be able to earn enough money to pay back any loans you have taken and fit with your business plan. While you may want to put solar panels on a particular roof, it may not receive enough sunlight to produce the amount of energy needed to make your solar panels profitable. Similarly, a spot you have chosen for your wind turbine may receive less wind than needed due to surrounding hills or other environmental factors. So be careful to also factor in the resources and how they impact the eventual income of the project.

2) WHAT TECHNOLOGY WILL PROVIDE YOU WITH THE HIGHEST RETURN ON INVESTMENT?

Depending on your community's natural and regulatory environment, your best investment may be solar PV, wind, biomass, hydropower, geothermal power, or a mix of these technologies. You can start with one and then add other technologies as you grow.

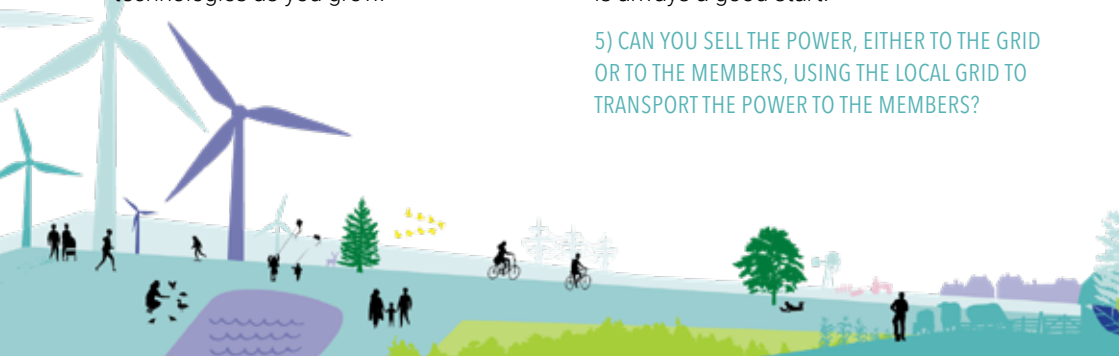
3) WILL IT BE POSSIBLE TO GET A PLANNING PERMIT FOR YOUR INSTALLATION?

There are many issues related to permits that could prevent your project from seeing the light of day. Nearby pipelines, airplane routes or military bases can block a building permit — at least for the spot you've chosen. To avoid wasting your energy and time, make sure to check with your municipality which areas or spots won't be available for planning. This will leave you and your community with more energy and motivation to work out the project plan!

4) DOES YOUR COUNTRY, REGION OR MUNICIPALITY PROVIDE FINANCIAL SUPPORT FOR YOUR PROJECT?

One of the first things to check is if there is a support scheme of some kind for renewables. Many national governments have had financial schemes to increase renewables, however many of these are no longer running or are closing soon. Your local or regional government might have some funding or support available, so do some research in that area as well. Of course getting your local government involved or at least supporting your project is always a good start.

5) CAN YOU SELL THE POWER, EITHER TO THE GRID OR TO THE MEMBERS, USING THE LOCAL GRID TO TRANSPORT THE POWER TO THE MEMBERS?



SUCCESS STORY

HARNESSING SOLAR POWER

COOPÉRNICO | PORTUGAL

Founded in Portugal in 2013, Coopérnico is a renewable energy cooperative that harnesses solar power for the benefit of the local community. It started when founder Nuno Brito brought together 16 citizens to invest in a small solar plant. They now have more than 1,800 members, that invested over 1.7 million Euro in 28 solar stations, with a total peak capacity installed of about 1.9 MWp. As they are in southern Europe in Portugal focusing on Solar makes a lot of sense, but look around in your area and see if perhaps wind or hydro is more suitable.

Some of the 1,800 members of Coopérnico renewable energy cooperative at their General Assembly. © **Coopérnico**

One way that the cooperative works is that it rents the roofs of socially-orientated institutions for its PV projects, providing those institutions with extra income. At the end of the lease, the co-operative will offer the solar apparatus to the hosting institutions for free. The energy produced on these rooftops is fed into the grid and bought by the distributor at a fixed price.

Coopérnico is also active in the retail sector, which means that they can directly sell electricity to their members at a fair price, guaranteeing that the amount of electricity produced by Coopérnico's projects is more than the one consumed by its members. This is part of what has allowed them to become very successful.

Currently Coopérnico is focused on three main areas - renewable energy production, the commercialization of energy for its members and energy efficiency. They have a mission that included these four points:

1. 100% renewable energy all electricity is produced exclusively from renewable energy sources
2. Social value creation all their projects create social value, either by close collaboration or the sharing of revenues with organizations operating in the social economy
3. Developing local economy they prioritize working with local partners when they develop a new project. This creates local jobs and promotes the transition to a sustainable economy
4. Integrity and transparency Coopérnico see these as the basis for long and trusting relationships. Updated information on their projects is shared with all the members that have supported them.

WE ARE ENERGY

SOM ENERGIA | SPAIN

Som Energia means "we are energy" in Catalan. Som Energia was the first energy cooperative established in Spain. The cooperative was founded by 150 citizens in 2010, who were inspired by Ecopower in Belgium and Enercoop in France. Most citizens can't afford to build wind, hydro or solar projects alone, but Som Energia offered the possibility to work together to support renewable energy from regional sources. The non-profit organisation started out by purchasing local green energy from existing sources, so members could buy affordable electricity.

Meanwhile, Som Energia built its own solar installations and worked on new renewable production projects with its local groups. The goal was to produce enough electricity to meet 100% of the members' consumption.

PV installation financed by Generation kWh (Som Energia's investment model), providing electricty to 690 homes.
© Som Energia

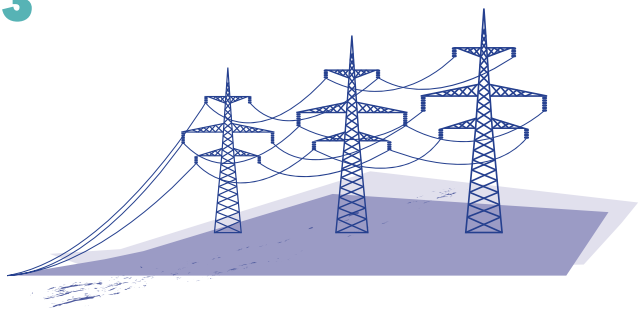
Seven years later, the project had 47,000 members. Today, Som Energia has nearly 68.000 members. To date, more than six thousand members invested a total of €15,000,000 in the project. After the Spanish government suddenly stopped providing financial support, Som Energia came up with an innovative new financing system called Generation kWh, to set up new projects against market price.

Consumers supplied by Som Energia are not just customers but co-owners of the cooperative, who participate in decision-making. They can also invest directly in the development of renewable energy. Som Energia combines the cooperative model, peoples' commitment and renewable energy generation in an inspiring way, offering every person in Spain the chance to participate in the transition, and invest directly in renewable projects to develop a sustainable economy, a growing grassroots demand.

REGIONAL MAPS

For most countries, there are maps on available wind speed, solar irradiation per region. If you have questions on this topic, check government websites, energy generation manufacturers or energy agencies. If there are similar installations to the one you have chosen nearby, it could give you an indication of whether this specific energy source would work in your area.

DISTRIBUTION
CHAPTER 13



Another way for citizens to take ownership of the energy transition is by operating the local distribution grid. The distribution grid is the system of software and hardware that bring electricity to all our homes. If you think of the high-tension or transmission grid as the motorways of the energy world, there are also the by-roads and local lanes. This is a vital bit of energy infrastructure and taking control of it will be key to creating the energy system we want.

In the first half of the 20th century, local distribution systems were mostly owned by local municipalities. That changed after a wave of privatisation starting in the 1960s, but new campaigns are being launched to put this crucial infrastructure back in the hands of people: the remunicipalisation movement.

Here's how it works now:

- The municipality gives concessions to operators for installing cables and distributing electricity, gas and heat,
- These concessions have time limits (15 years on average), and have to be renewed by the operating entity, or taken over by another entity once the concession expires. Could your project be that entity?

EWS SCHÖNAU TAKES BACK THE GRID | GERMANY

Remote communities were historically challenged with energy supply, as energy providers often considered their areas unprofitable investments. In many cases, this led communities to take things into their own hands, as they took charge of the local distribution grid.

A well-known example for this is the case of ElektrizitätsWerke Schönau (EWS) in Germany. In 1991, the citizens of the small city of Schönau in the Black Forest decided to buy the local distribution grid to make it sustainable, as the local supplier at the time did not want to provide renewable energy.

ElektrizitätsWerke Schönau (EWS) campaign: "Ich bin ein Störfall" which means in German "I am a technical incident", referring to the disaster in Chernobyl. Thanks to this campaign, EWS was able to buy the local grid. © **EWS Schönau**

EWS SCHÖNAU TAKES BACK THE GRID | GERMANY CONTINUED

To take over the distribution grid, the cooperative competed for the concession. The city council rejected the cooperative's proposal, so citizens asked for a referendum to challenge the city council's decision, and they won.

Unhappy with the situation, the electricity company in Schönau asked for a referendum to reverse the decision, and tried to convince the local population that the cooperative couldn't manage the distribution network. Against all odds, the company lost this referendum, confirming the take-over of the local distribution network by the citizens of Schönau.

A final step for the citizens was to negotiate the price of the concession in court. At that time, the energy market was not yet liberalised, and there were no financial support systems. Yet EWS inspired citizens to install renewable energy production units by enabling their connection to the grid, and paid them special feed-in tariffs. After years of struggling in and out of court, today, EWS Schönau supplies clean power to over 200,000 consumers in Germany, feeding energy produced by people into the grid. EWS sources the power directly from renewables and cogeneration producers, on a real-time basis, to be sure that no nuclear power is involved.

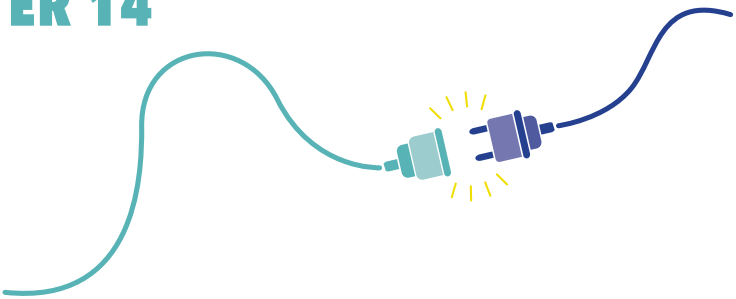
EWS showed that by taking back the grid and selling energy, you could adapt a business model to the needs of your members. It also demonstrated the resilience of renewable energy cooperatives and their ability to make use of the power of volunteers, who share their expertise for free. EWS has since supported other communities in Germany, such as Energienetz Hamburg, to achieve similar projects.

CONCESSION RENEWALS

Find out who owns the current concession for your local distribution system and when it comes up for renewal. This could be an opportunity for your group.

Greenpeace report "Battle of the grids". https://storage.googleapis.com/planet4-belgium-stateless/2018/12/6a1f28a4-6a1f28a4-publ_battle_of_grids.pdf

SUPPLY
CHAPTER 14



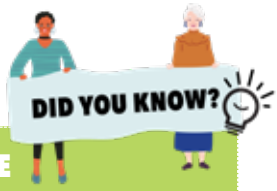
A number of energy communities have opted to operate as energy suppliers. There are different ways to do this: some produce their own electricity and sell it to their clients, and some buy and aggregate renewable energy from other producers for their members.

Coopérnico from Portugal is such an example of the first option. The country's first cooperative supplier and producer invited citizens from all over the country to become members and purchase shares. These revenues were then used to finance renewable energy investments such as solar PV panels. The energy produced from these panels is supplied to its members and beyond.

Community Power is Ireland's first, and only community-owned electricity supplier. The company grew out of the group that built Ireland's first community-owned wind farm, Templederry, and is now a partnership of community energy groups seeking to develop renewable energy in their areas. The supplier buys renewable energy from small wind and hydro generators, and sells it to their customers. In 2020, the first renewable electricity auction was held in Ireland, including a category for community-owned generation. Following their success in this auction, Community Power will develop two citizen-owned solar parks.

A few years ago, the energy cooperatives from the French-speaking region of Belgium decided to join forces and set-up Cociter, their own cooperative energy supplier. The energy that the cooperatives jointly produce covers the needs of 15,000 families. With over 3,000 members, Cociter still has space for 12,000 new families to join.

As with electricity generation, becoming a cooperative energy supplier comes with its own challenges, linked to regulations, the influence of established market actors, and financial limitations, among others. Don't despair if your community hits a roadblock of this sort! It's completely normal, and with the help of other cooperatives, you'll find a solution.



COOPERATIVE ENERGY SUPPLIERS

Across Europe the list of cooperative energy suppliers keeps on growing. If you don't get your energy from one already, now is the time! ènostra from Italy has 11,000 clients, Enercoop from France has nearly 107,000 clients, Som Energia from Spain has 118,500 clients, Green Planet Energy (Germany) has over 214,000 clients, Ecopower (Flanders, Belgium) has 55,500 clients, and EWS (Germany) has over 200,000 clients.

Entering the retail energy market: a guide. This is from the British regulator but has lots of information of general relevance. https://www.ofgem.gov.uk/system/files/docs/2016/07/entering_the_retail_energy_market_-_a_guide.pdf

Understanding electricity markets in the EU. http://www.easyres-project.eu/wp-content/uploads/2019/02/understanding-elecricity-markets-in-the-eu.pdf

HOW ENERCOOP FOUND A WAY INTO THE FRENCH ENERGY MARKET | FRANCE

When French environmental NGOs, energy experts, project developers and alternative financing companies set out to set up citizen-owned energy supplier Enercoop 15 years ago, the situation was less than favourable. At the time, all of France's energy assets, its main utility company EDF and main distribution system operator ERDF were state-owned. Most of France's electricity (75%) came from nuclear power - which is still the case today. The French government was very reluctant to liberalise its energy market at the time, which made it very difficult for any actor other than EDF to compete on the market. This prevented projects from having access to renewable

A local enercoop group next to installed energy project
© Enercoop Midi-Pyrénées

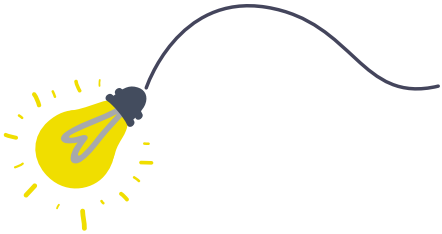
energy production and thus being able to secure a viable model as a supplier in France. It is still difficult today but to a lesser extent - partially thanks to EU legislation. Initially, French law stipulated that any renewable energy produced had to be sold to the historical utility company if the owners wanted to receive feed-in tariffs from the government. So during its first years of activity, Enercoop had to buy its renewable energy from publicly owned hydropower installations.

To access this production, the public utility demanded a bank guarantee for the total amount of energy Enercoop would buy from them. At the time, Enercoop was not able to provide this guarantee on their own, and as a last resort, turned to the neighboring Belgian cooperative Ecopower for help. Together with the ethical bank Triodos, the French bank Credit Coopératif and Ecopower, they were able to provide the needed support. Enercoop never needed to claim this guarantee, but it was necessary to save the cooperative at a crucial time in its history.

Today, after much advocacy on both national and EU levels, Enercoop can purchase its electricity directly from renewable energy producers, who continue to receive government support. Looking back, this difficult episode in the life of the French cooperative and the cooperation it led to with Ecopower is what started the idea of an EU-wide federation of energy cooperatives, "to help beginners and existing cooperatives overcome obstacles they face by learning from others."

Citizen solar energy project in France. © **Enercoop**

ENERGY SAVINGS & FIGHTING ENERGY POVERTY
CHAPTER 15



Another important project for your group could be increasing energy savings and energy efficiency in your community. This is a great way to start activities and gain expertise and trust in the community, especially in the beginning.

Many people, especially in Southern and Eastern Europe, live in inefficient homes that waste heat in the winter. Precious energy is being lost through thin windows, walls and roofs, harming peoples' health and wellbeing, and inflating our energy consumption.

Energy poverty is the manifestation of social inequality in energy consumption and inadequate access to energy services, due to a combination of low incomes, high energy prices and inefficient homes. It increased dramatically after the 2008 financial crisis, affecting millions, and leading to the creation of many European grassroots movements fighting for energy justice and against energy disconnections.

- Up to 1 in 4 Europeans live in energy poverty, representing 125 million people.
- In 2015, close to 50 million of people in the EU were late or unable to pay their utility bills. In Greece, this was more than 40% of the population.
- In 2015, 15% of Europeans were living in homes with a leaking roof, damp walls, floors or foundation, or rot in window frames of floor, representing close to 80 million people.
- Up to 100,000 Europeans a year die as a result of a cold home.

Energy poverty feeds into a vicious cycle of social exclusion. It harms the most vulnerable first: the elderly, low-income families, single-parent homes (80% headed by women) and people of colour. Despite this, only a third of EU governments officially recognise energy poverty. Even where there is recognition, many fail to make the connection with our energy system which drives over-consumption of fossil fuels and energy waste.

Community power initiatives can reach out to vulnerable and low-income households to:

- Invest in ownership to get cheaper access to renewables, so they can benefit from the collective wealth generated,
- Invest in energy efficiency measures and building renovations to improve living conditions,
- Learn how to reduce their energy consumption and bills.

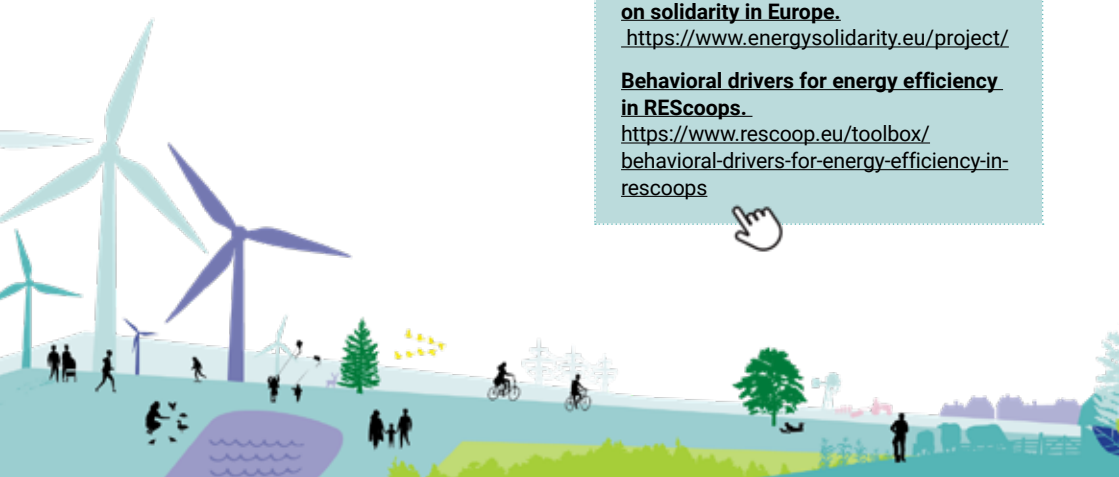
You can start by identifying people in your community who are in energy poverty thanks to a door-to-door survey to meet them and talk about their homes. The survey could also help you get to know the area and people better. You could also organise a community meeting to speak with people about their ideas. Do they want to organise retro-fitting together to insulate their homes with available grant schemes?

The energy poverty handbook from Housing Europe.
https://www.housingeurope.eu/resource-835/energy-poverty-handbook

Best practices - coops implementing energy efficiency.
https://www.rescoop.eu/toolbox/rescoop-plus-energy-efficiency-toolkit

webpage with examples of energy cooperatives focusing on solidarity in Europe.
https://www.energysolidarity.eu/project/

Behavioral drivers for energy efficiency in REScoops.
https://www.rescoop.eu/toolbox/behavioral-drivers-for-energy-efficiency-in-rescoops



CREW ENERGY: POWER AT THE GRASSROOTS | UK

CREW Energy was founded in 2014 by members of Friends of the Earth to take action against energy poverty, energy inefficiency and fossil fuels. Today, its main goal is helping communities across south-west London become environmentally and financially sustainable.

Its vision is a greener, fairer community for everyone, built from the grassroots. CREW Energy coordinates projects on energy transformation and hosts energy-advice cafés to make residents more aware about energy efficiency.

These regular exchanges take place in community hubs, where CREW Energy staff invite community members to discuss their role in energy efficiency while sharing tea and biscuits. In this welcoming setting, people can get advice on the best energy tariffs, additional benefits, grants and discounts on energy bills.

CREW's Energy cafés aim to tackle energy poverty and support marginalised groups' well-being: many communities, particularly those in socially and economically deprived areas, do not normally have access to such energy expertise. Thanks to these sessions, a resident saved £300 on their energy bills, showing how these spaces are needed and potentially life-changing for the community.

CREW Energy's efforts to make their work sustainable has led them to educate and empower young people to pursue careers in the energy sector. Yunus Nas, a recent Environmental Science graduate who completed CREW's Energy training to assess household efficiency, said, "Working with CREW Energy has given me the confidence and encouragement to implement my training to effect change on a local level. It's a great way to deploy my skills and experience to help accelerate my community toward a more sustainable and environmentally friendly future."

CREW Energy supporting young community energy champions.
© CREW

SELF CONSUMPTION TO FIGHT ENERGY POVERTY IN TUSCANY | ITALY

In 2019, the Italian social housing company "Edilizia Pubblica Pratese" inaugurated the NzeB residential complex in San Giusto (Prato) including 29 lodgings, a community centre of 250 square metres, an equipped garden and a new square. This project is a great example of collective self-consumption to fight energy poverty, combining high levels of energy efficiency with social housing to minimise energy costs, thanks to innovative approaches using sun and wind energy.

The energy produced in the building comes entirely from renewable sources, as well as 90% of the energy used for heating and hot water, and over 60% of the total energy consumed by the building, including condominium electricity consumption. The centralised system consists of a heat pump and produces 12,701 kWh/year. It is powered by 100 photovoltaic panels. Inside the building, heat is distributed through floor panels, and solar panels are used for heating and to produce hot water. Buildings are highly efficient, thanks to an insulated roof and advanced thermal systems, keeping families warm in winter and cool in the summer.

Installation of solar panels at the NZEB in Prato, Italy. **© Studio Tecnico Associato RES Architetture**

HEAT
CHAPTER 16

Heating and cooling buildings represents a lot of energy, money and CO_2 emissions due to inefficient systems. The good news is, you can build sustainable and efficient heating and cooling systems, and they can be community-owned! In the Netherlands, the community of Groningen took over the district heating network for example, to cut gas entirely from their supply.

The easiest way to get started is by thinking about district heating systems. District heating systems are where heating is taken care of on the city or town level. Many municipalities distribute heat through a system of hot water traveling through insulated pipes. This is then used to heat water or space in homes and businesses. The heat is produced centrally and can be from burning of fossil fuels or from by-product heat from some industrial process. These systems can be transitioned to renewables. Find out if your town or city has a district heating system and how it is powered.

HVIDOVRE FJERNVARME: A DISTRICT HEATING COOPERATIVE | DENMARK

There are hundreds of heating cooperatives in Denmark, where heat demand is high, legislation is supportive, and cooperatives can access cheap loans through municipalities. Hvidovre Fjernvarme is a cooperative of 250 members and 33,000 consumers, including the Hvidovre municipality, providing heat from renewable sources to its inhabitants. Together with three other district heating cooperatives (FDHvidovre, Avedøre and Rebæk Søpark), they deployed a program to help members optimise their heating installations, allowing them to save energy and money.

Every second year, the cooperative checks the consumers' heating installations for free. The first check includes an analysis of the district heating unit as well as a report on the energy performance of people's homes, assessing their consumption. The report also provides recommendations on ways to optimise their home's energy efficiency. Every two years, a maintenance check of the district heating unit is performed in case adjustments are needed.

Every year, EBO Consult organises a Heating Day at the Hvidovre District Heating Cooperative to inform the citizens of Hvidovre about district heating and energy savings. **© EBO consult**

ACHIEVING SUSTAINABLE HEATING | FRANCE

In France, the joint "Forestener – the Citizen Heat" project supports local wood-energy projects by mobilising local savings to design, finance and operate wood-based heating systems, in collaboration with local residents.

In Lucinges, a village in Haute-Savoie, an innovative community heating network co-financed by citizens and managed by public authorities was created in 2018. The district heating network called Forestener provides heat for municipal buildings, and aims to heat all buildings in the centre of the village. The one kilometer long network aims to heat 60 collective housing units, 5 individual houses, the school, the school canteen, the town hall, the public library, the community centre, two cultural centres, an organic beer brewery, and one company.

The furnace room is equipped with two wood boilers, which will deliver 1100 MWh per year to its users. Before installing this heating network, the village's heating ran on fuel and propane, through old installations. As the municipality was building new

The Forestener project is a great example of transforming a city's heating system by working together with the local community. © **Énergie Partagée**

housing units, they decided to centralise the heating system and to switch from fossil fuels to sustainable, wood-based solutions. Before, half of the amount on the energy bill benefitted actors outside the community. The new system helps keep these energy revenues within the village, which the community can use to further improve its infrastructure. The wood chips used come from a nearby forest, to keep transportation needs to a minimum.

The secret ingredient of this project is citizen involvement. The governance of the project is participatory and democratic, and around 45 people invested in the system to support its launch with the support of French cooperative association Énergie Partagée, motivated by its ethical, local and environmental benefits. By now, more than 5,000 citizens have become investors in Forestener and other projects supported by Énergie Partagée. The French region of Rhône-Alpes was also a key supporter, providing this project with €442,000, and the project received a loan from the ethical bank La Nef.

Guide for cities and towns that want to develop DHC. https://guidetodistrictheating.eu/guidance-for-cities-and-towns/

The hotmaps toolbox to kickstart energy planning. https://energy-cities.eu/publication/the-hotmaps-toolbox/

An online toolbox to support heat planning. https://www.hotmaps-project.eu

FLEXIBILITY, SELF-CONSUMPTION & STORAGE
CHAPTER 17

Beyond more traditional activities within the energy market, energy communities have been developing innovative solutions in the field of energy flexibility, such as storage, electro-mobility, and even blockchain technology. If you feel like your community would be interested in these areas, these examples are for you!

COLLECTIVE SELF-CONSUMPTION AND STORAGE

People often live in rented apartments and older terraced houses, making it difficult to install private solar panels. A collective solar project, led by the energy cooperative EnerGent (Belgium), has been looking for solutions to this. The project Buurzame Stroom intends to install 5,000 square metres of solar PV panels across a district in Gent, to increase renewable energy production in that district and set up an innovative business model for collective self-consumption.

One option is to unite people who own apartments in the same building to put solar panels on the roof. It can be challenging to work out a group agreement between all of the owners, to decide how they can share the energy, but once you develop a good model you can spread it in your city or district.

The project also wants to turn the district into an integrated local energy system powered by renewables. Electric vehicles operated by the cooperative Partago and battery systems were put in place to buffer excess solar energy for example. Buurzame Stroom also benefits from the expertise of various cooperatives, including Ecopower, EnergieID and the WiseGRID project.

BLOCKCHAIN

Consumption or production data is often measured by metres, which are owned by distribution grid operators. This gives consumers little control over what is actually private and sensitive information. To solve this problem, the Pylon Network in Spain successfully developed an independent and neutral database based on blockchain technology. Through their technology, production and consumption data can be stored and shared safely. End-users or prosumers can keep control over their data and decide how they want to share their information.

DEMAND FLEXIBILITY

In several countries, especially in northern Europe, the lack of electricity available to the grid (especially during long winter nights) is compensated by subsidised gas power plants. Energy communities offer a cheaper and greener alternative. Community members can make a flexibility offer, and accept to be limited in their electricity supply for a certain amount of hours per year, when needed, in return for financial compensation.

A WIDE PARTNERSHIP FOR AN INNOVATIVE COLLECTIVE ENERGY SHARING PROJECT GECO | ITALY

The Agrifood Centre of Bologna, CAAB, had solar generation installed with low rates of consumption and excess energy fed into the grid for low prices. Discussions on new EU laws in 2018 revived the idea of involving local businesses and citizens to create an energy community, and take advantage of energy surpluses to benefit the residents of social housing.

The same year, the Neighbourhood Economics Project, aiming to support sustainability investments in the area carried out preliminary studies on the idea. In 2019, CAAB and the Local Development Agency Pilastro North East partnered with local actors to push forward the initiative and discovered a similar initiative being explored by the ENEA in a nearby district, Roveri.

People decided to join forces to present the GECO (Green Energy COmmunity) project to the EIT Climate-KIC fund, to create an innovative local energy community involving both districts.

GECO is based on new systems using smart meters and a blockchain-based platform. Beyond solar installations, it includes biogas plants and storage to increase flexibility and demand response, and the system will be installed in commercial, industrial and residential buildings. GECO will use the public grid, creating a virtual community.

Currently, as full transposition of new EU community energy laws is pending, energy communities can only be formed by users that are on the same low tension feeder, for generation systems with a maximum capacity of 200kWin. In this first phase, GECO will rely on users to create small energy communities that later become part of the cluster entity. The idea is to enable efficient user behaviour since energy is shared with commercial and office buildings that mostly operate during the day.

Activities of the GECO project also include education and information activities with schools, associations and other local stakeholders, to raise awareness and support new prosumers in the area.

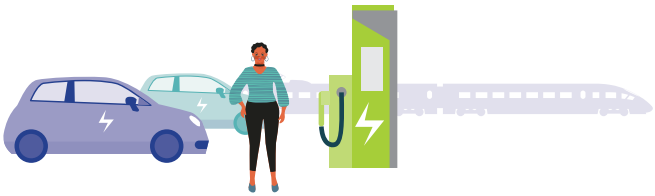
Blockchain and energy transition.
https://energy-cities.eu/publication/blockchain-and-energy-transition-what-challenges-for-cities-find-out-in-our-newly-released-publication/

World Wind Energy Agency webinar on system balancing back-up and storage.
https://library.wwindea.org/grid-integration-system-balancing-backup-and-storage-interconnections-demand-and-supply-forecasting/

Smart energy for end-users - a feasibility study from Samsø.
https://www.rescoop.eu/toolbox/smart-energy-for-end-users-a-feasibility-study-from-samsø

FLEXcoop report: Emerging business models: associated demand-response strategies and contract templates.
https://www.rescoop.eu/toolbox/emerging-business-models-associated-demand-response-strategies-and-contract-templates

TRANSPORT & MOBILITY
CHAPTER 18



When thinking about the future energy market, we have to consider electricity, heat and transportation jointly. Transport is the sector in Europe that accounts for the biggest source of emissions: about 30% of the EU's CO_2 emissions. Transport is also the only sector that has seen emissions rise instead of drop since 1990. Don't forget transport when you're thinking about transforming our energy system.

To reduce its emissions, the transport sector will have to dramatically reduce individual car use and switch to electricity. Community projects can help tackle both challenges. You can set up an electric car sharing scheme in your community, a great activity for an existing community energy project to branch out into. A cooperative can invest in a fleet of electric cars that people can book and use, cars are owned by the community instead of individuals.

The idea is also to create more community around transport. Today, people go from their front doors to their personal vehicle, sitting alone in metal boxes without meaningful interactions with their surroundings or people in their community. Car sharing is a more communal experience, you walk or cycle to the nearest car, passing or greeting people on the way. The whole experience allows us to break with the individualist mentality of personal car ownership, in a spirit of sharing.

In 2018, REScoop.eu facilitated international collaboration between three e-car sharing cooperatives who eventually decided to set up a new European cooperative society called The Mobility Factory (TMF). It includes a European platform enabling energy communities across Europe to share e-cars within their communities. The online platform allows projects to offer apps, web interfaces, online payments, and the software needed to set up a car sharing service in your own community, like tools to open cars without keys.

Every cooperative enterprise engaged in sharing electric cars can become a member to benefit from the services of TMF. Energy communities make decisions on how they want to operate, colours, logos, which cars to include, the pricing model — without having to deal with setting-up and maintaining an IT platform. As a member you can also adjust code to your needs: cooperatively owning and developing IT code is called "Platform Cooperativism".

Once you have built something, share it! This is a key value of cooperatives and part of the International Cooperative Alliance (ICA) principles.

Cooperatives help other cooperatives!

THE E-CAR-SHARING COOPERATIVE SOM MOBILITAT | SPAIN

Founded in 2016 in Catalonia, Spain, Som Mobilitat, also known as "We are mobility," is a non-profit consumer and user cooperative dedicated to sustainable mobility. The organization was founded by members of Som Energia and emerged from the same cooperative model as Som Energia, Spain's largest energy cooperative, adapting it for sustainable transportation. Som Mobilitat is at the forefront of sustainable mobility in Spain, working towards a cleaner, more efficient, and community-driven future of transportation.

At the core of Som Mobilitat's mission is providing the public with access to electric vehicles, offering an efficient car-sharing service where users pay for the hours they drive. As of autumn 2023, Som Mobilitat boasts 4,166 members, including individuals

An electrical car from Som Mobilitat charging.
© Som Mobilitat

and partner organizations, 4,405 active car-sharing users, a fleet of 106 vehicles stationed in 34 municipalities, serving 61 communities and 5 closed communities.

Som Mobilitat's overarching objective is to promote sustainable transport among its members and beyond and reduce environmental pollution by curbing the proliferation of vehicles in urban centers. To achieve this, they focus on:

- Designing, producing, and funding innovative technological services and products.
- Collaborating with a network of other cooperatives.
- Encouraging and assisting in the creation of similar energy communities and cooperatives beyond Catalonia.
- Supporting local groups and financing of local projects.
- Engaging with public authorities.

Their endeavors are rooted in six fundamental principles:

1. **Mobility**: expanding sustainable transportation alternatives.
2. **Community**: collaboratively building diverse mobility options.
3. **Sustainability**: committed to environmentally responsible mobility.
4. **City**: promoting shared vehicles and reducing the number of cars on the road.
5. **Quality**: enhancing air quality in urban areas.
6. **Savings**: lowering the cost of individual mobility.

TRANSPORT & MOBILITY
CHAPTER 18

Solar and mobility report from Solar Power Europe.
https://www.solarpowereurope.org/interests/solar-mobility

Check out the website of the mobility factory. http://www.themobilityfactory.eu

CHOOSING YOUR TECHNOLOGY

Templederry is home to Ireland's first community windfarm. © TEA

Producing and selling energy is often a key activity for community energy projects, whether it's your core activity or not. This is crucial work as it replaces fossil fuels in the energy system, helps mitigate climate change and keeps money in the local community. Some projects grow big enough to produce energy from multiple technologies, but if you are starting out, here are the different sources you could choose from.

WIND
CHAPTER 19

"The wind blows for everyone, not just for companies", the Ecopower cooperative announced to the local municipality in 2016. Harnessing this energy gives local residents the opportunity to transform their energy system and improve their communities. Wind is a big part of the energy pie, don't let big companies monopolise it!

WHY WIND?

A wind park can produce a significant amount of energy, more than solar panels for example. An average onshore wind turbine can produce more than 6 million kWh in a year – supply 1,500 households with electricity. Wind can be an important tool to replace fossil fuels that destabilise our climate.

Wind can also generate significant income that can be used to support your community, directly through sharing profits, and indirectly as it creates added value in the local economy.

When thinking about wind, consider your surroundings. Does the geography in your local area suit wind? Do legal rules support or block the project, or make it unprofitable? How would you transport a turbine to your region? These are the questions to start looking for the answers to out before deciding if wind is your technology of choice.

These questions are easier to answer once you identify potential land, and commission a detailed study into technology options with the assistance of a consultant if needed. In most countries, maps of wind speeds can help you understand how feasible a turbine would be an area. It's also important to note that turbines are often forbidden close to military bases, airports or gas pipelines.

PUBLIC SUPPORT

The key to getting public support for wind energy is to turn up with a blank piece of paper and let the local community build their vision themselves. Get the residents to meet with experts, provide best case examples, answer questions, but don't come with a fixed plan: that's the quickest way to lose their trust. Be flexible! Building support takes time but as shown in Eeklo below, plans made with real citizen participation can lead to successful permits without major objections.

Onshore wind farms are often called eyesores, with people complaining they ruin natural landscapes. However, it's interesting to see how people can grow to like their appearance when the profits are shared in the community. It's only natural people resist turbines when they are imposed on them without gain!

WIND AGAINST ENERGY POVERTY EEKLO | BELGIUM

The wind is a common resource and should be for everyone. In Eeklo (Belgium) the Ecopower cooperative shares ownership of a wind turbine with the local authority. This type of public-civil cooperation has great potential: elected officials have a stake in benefitting from wind, while the energy cooperative provides technical know-how, reflects the voice of the citizen directly, and involves vulnerable groups.

The Eeklo project started slowly, to consult people and make sure there was real support from the local community. The city is now trying to involve families in energy poverty, often people with a budget meter who are actually paying a high electricity price. Eeklo now considers to provide 750 people with a pre-financed share of the citizen energy cooperative, based on its 25% ownership of one wind turbine. By doing so these people get all the advantages of full members of Ecopower who co-own the wind turbine and can use electricity at cost, lowering their energy bills and allowing them to pay off energy debts. These members can also save up the cost of an own share (250€) in the cooperative with the savings they make on their energy bill.

Members of Ecopower stand in front of the windturbine generator that will be built in Eeklo. © **Ecopower cv**

Community workers from local social services will then support the energy poor families with guidance and budget management at the same time, to reduce the risk of non-payment for the cooperative.

The initiative shows how you can involve people who struggle with energy bills, providing them with access to renewable and affordable electricity without having to buy a cooperative share worth €250. Without the risk of social stigma, people can become full members of the energy community and pay the cost of the share as they save.

The cooperative and the municipality in Eeklo are also cooperating on heat supply, as the city commissioned the construction of a district heating network based on waste heat and renewables. When the city issued a tender for the construction of a large district heating network, it required a 100% renewable energy target and a minimum of 30% citizen ownership. The winning consortium managed to guarantee this through a partnership with Ecopower, to make heat sustainable and affordable for everyone.

Public consultation is not just a means to get permission to start a renewable energy project, it's a chance to harness the knowledge and skills of the community. Residents will come up with ideas, questions, problems and concerns that you would never have thought of alone. Discussions will help you create a strong plan, while building trust and a future base for fundraising. It can also help you identify leaders in the community that you can ask to join your project.

FINDING LAND

The average lifespan of a wind turbine is 20 to 25 years, so you'll have to plan ahead! It's very unlikely the community will be able to own the land, which is why most cooperatives rent space in a farmer's field. However, be careful: once a turbine is up and running, neighbouring farms may be too close to install their own and receive the same benefits. Building support also means making sure everyone shares the profits, which is why cooperatives often provide compensation to neighbouring farms.

WIND
CHAPTER 19

Studying the whole region early is very important when looking for a site. A private company could have land they could rent, or the local authority could be willing to cooperate. Start by engaging with your local authority to discuss land use, there might be a local land use plan that you can study. Community energy projects involving the local municipality are usually the most successful.

GETTING THE SKILLS YOU NEED

If at any stage you feel overwhelmed, remember, you are not the first person to build a community-owned turbine, many communities have done this before and have accumulated a lot of knowledge. Don't hesitate to reach out for advice, especially if someone in your country has done this successfully, even if you just know someone who has tried! Map out local skills, and find people who have experience in energy, skills in project management, engineering or accounting.

SEEK ADVICE

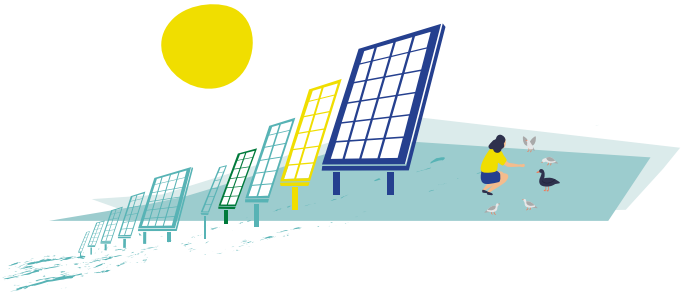
Call someone and ask them for advice. Offer to buy lunch or a drink if you can. Sometimes, even if they don't know the answer, talking it out can help you see solutions, or figure things out together. Of course, there's no need to rely wholly on the local community! Check out if there are nearby community energy groups you could speak to for advice, or if your region has a federation that could provide support. And there is always REScoop.eu.

European wind atlas. https://map.neweuropeanwindatlas.eu

Best practice cases from the Win wind project.
https://winwind-project.eu/resources/best-practice-cases/

Report around fostering social acceptance for wind power.
https://www.rescoop.eu/toolbox/final-publishable-report-of-the-wise-power-project

SOLAR
CHAPTER 20



The majority of community energy projects being built in Europe are solar. In many ways, solar is the perfect technology for community projects. Even though it doesn't produce as much energy as wind, it's a great place to start due to its cheaper price and simpler planning processes.

If you work in local government, solar energy should be high on your radar: it's a great fit for urban environments and a great contributor to local job creation and economic development. Small-scale PV installations are typically more labour-intensive (in engineering, installation, maintenance, auditing) than centralised technologies, creating three times more jobs per capacity unit.

If your city has committed to the EU Covenant of Mayors for Climate and Energy, you probably have targets for local renewable energy deployment.

The good news is, with the help of local citizens, you can achieve quick and impressive results! Policies and business models can be developed to:

1. Assess the city's rooftop potential,
2. Increase the rate of solar energy deployment on all buildings through specific regulations.

Whatever your strategy, be aware of potential obstacles citizen groups and communities you cooperate with might face. These include:

- Heritage-related issues on listed buildings,
- Conflicting priorities between green or solar roofs,
- Agreeing on the right number of solar panels
- Making sure you get good cooperation with distribution system operators.

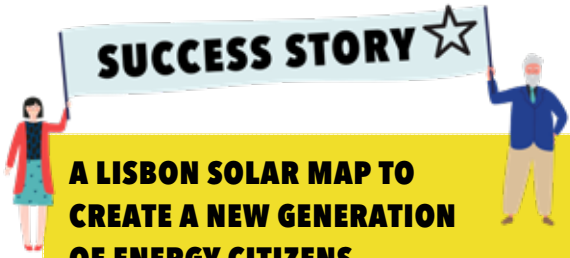
SOLAR
CHAPTER 20

Both Paris and Lisbon have developed cutting-edge tools to provide citizens, community groups and small businesses with an estimation of the solar thermal and photovoltaic potential of the citys' rooftops, taking into account many parameters including the buildings' shape, orientation, slope, etc.

EUROPEAN CITIES BACK SOLAR

Many EU cities have adopted specific targets to link their political commitments to quantitative objectives. In Lisbon, the city pledged to reach a cumulative installed capacity of 103 MW by 2030. In Barcelona, the local authority required solar water heaters to be installed in all new and renovated buildings across the city, an unprecedented move in Europe at the time, inspiring around 70 other Spanish municipalities to do the same.

Cities are becoming more and more innovative when it comes to designing new partnership models with their citizens, especially to scale up solar power. In Brittany (France), the city of Lorient partnered with a citizen investment cooperative called Oncimé, to launch a unique solar panel rental scheme.



A LISBON SOLAR MAP TO CREATE A NEW GENERATION OF ENERGY CITIZENS

SOLIS | **PORTUGAL**

"Lisbon Solar City" is Lisbon's solar strategy and an integral part of the Sustainable Energy and Climate Action Plan (SECAP), approved by the municipality in the framework of the Covenant of Mayors for Climate and Energy. Based on this strategy, they city set some ambitious goals:

- By 2021, a cumulative solar capacity of 8 MW installed in buildings;
- By 2021, a capacity of 2 MW installed in a centralized power plant feeding the public fleet of electrical buses and waste management trucks;
- By 2030, a cumulative capacity of 103 MW will be installed in the city.

The SOLIS partnership is the cornerstone of this strategy. The project was the result of a partnership between the energy agency and the municipality. Co-financed by the Portuguese Ministry of the Environment, a multidisciplinary team of experts in Solar PV technologies, geographic Information

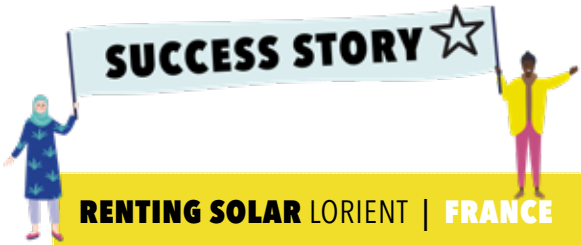
Systems, cartography, communication and marketing worked on the platform.

Using appealing graphics and some key figures, SOLIS offers citizens, local authorities, investors and businesses three different mapping products, at three different scales – the city, the parish and the building:

- an updated solar radiation map, delivering the impinging amount of solar energy in the city's roofs;
- a solar electricity generation map, both potential and (estimated) actual energy, with the additional functionality of estimating key self-consumption figures at building level for a specific citizen profile;
- an informative map of PV installations in the city and its evolution over time

But SOLIS is more than just a map: it gives citizens the opportunity to be involved in the local energy system. They can register their own solar systems and provide their feedback and testimonies. They have the possibility to estimate the electricity production from their rooftop and the associated investment and revenue. Also, the platform offers information on market rules and educational content such as infographics and short animated films to create a new generation of solar energy citizens!

Solis Solar Radiation Map.
© Solis



RENTING SOLAR LORIENT | FRANCE

The French city of Lorient in Brittany and OnCIMè achieved great success with its ground-breaking solar panel rental system. OnCIMè is a local project dedicated to developing renewable energy sources, aiming to tackle global warming and create local jobs. The partnership between Bretagne Énergies Citoyennes and the City of Lorient was innovative, combining PV panel rental and citizen engagement around a project based on self-consumption.

HOW DOES IT WORK?

1. Self-consumption: the electricity generated by the PV panels is used directly by the buildings on which they are installed. This is particularly suitable for buildings that are occupied during the day: schools, administrative buildings, office buildings, etc.

Some of the people involved in the OnCIMè project in Lorient.
© Bretagne Energie Citoyenne

2. Rental: OnCIMè, following a public tendering process, has a rental agreement with the city of Lorient. The municipality pays a monthly rent in exchange for the right to use the solar panels, and install them on the roofs of its buildings to generate electricity, which is cheaper than buying grid electricity.

The shareholder base is mainly local, and the "one person one voice" governance rule is in line with the spirit of a social and inclusive economy. OnCIMè also organises events every year in buildings equipped with solar panels for students and city staff, to raise awareness on solar and renewable energy.

In 2019 OnCIMè had more than 100 shareholders, nearly 400 rented PV panels and a plan to finance a PV station on an organic shop in Lorient. Solar offers exciting collaborations!

Financing models for solar PV projects.
https://www.rescoop.eu/toolbox/financing-models-for-solar-pv-projects

The Dummy's guide to Solar energy.
https://unboundsolar.com/solar-information/solar-power-101

CITIZEN'S POWER PLANTS VIENNA | AUSTRIA

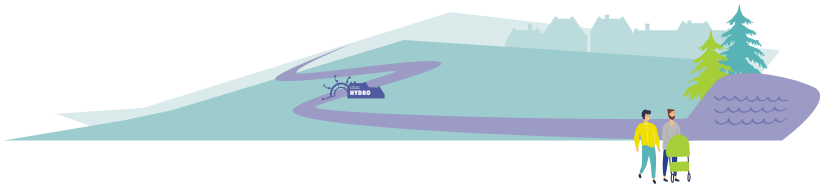
Setting up individual renewable energy system is not always an option, especially in cities where the majority of the population lives in flats. That is why in Vienna, the city-owned energy utility Wien Energie, launched the "Citizen's power plants" in 2012.

Wien Energie installs solar panels on suitable buildings and offers citizens the opportunity to buy a maximum of 10 at a price of 950 € per panel. Wien Energie is also in charge of building and operating the photovoltaic systems and bears the technical and economic risks. The citizens then lease the modules back to Wien Energie and receive a yearly return on their investment, which can also be given as vouchers thanks to a collaboration with the SPAR supermarket chain. The owners always have the possibility to give the panel back to Wien Energie at the full price. At the end of the term of the rental agreement the initial investment is returned to the investor.

Since May 2012, more than 6,000 Viennese citizens have contributed to the development of renewable power within the city. Citizens were able to contribute to the wind park Pottendorf, with a capacity of 3 megawatt that can provide energy for 1,800 households.

Thanks to this initiative, more than 6,000 Viennese citizens have contributed to the development of renewable power within the city. Wien Energie aims at increasing the share of renewable energy in total electricity production to 40 per cent by 2030. Wien Energie has realised 24 solar energy projects and 4 wind turbines. In 2015 the participation model was extended to wind energy. Right now, they deliver renewable energy to 800,000 people but they expect to reach 1.5 million people by 2030!

SMALL AND MICRO HYDROPOWER
CHAPTER 21



Generating energy from water is one of the oldest ways to produce energy, which is why mills for grinding flour, sawing wood or pressing oil were always located on rivers. Hydro projects use the same principle of harnessing the energy of flowing water to produce electricity.

Water flowing downhill over a natural waterfall or weir is diverted into a pipe or canal, and rotates a waterwheel or a water turbine. The gearbox channels it to the generator which produces electricity.

Large-scale hydro renewables projects can be damaging to communities and the natural environment, but this is not the case with small-scale community projects who take the right precautions. Many community hydro projects even combine historical renovation projects with energy production. Famous Ecopower grew from the renovation of an old watermill near Rotselaar in Belgium.

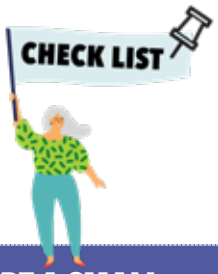
Hydro projects do need extra permits to prevent damaging the river and its wildlife, and comprehensive, rigorous feasibility studies are very important. However, once safely installed, hydro can provide a stable supply of energy and income.

SMALL AND MICRO HYDROPOWER
CHAPTER 21

There are two main types of hydro projects: high head and low head schemes. The head is the difference in height between the water level upstream and the water level downstream the hydropower plant.

- For high head schemes, you need a fall with a large height difference (more than 10 metres). A typical high head scheme would involve a mountain stream flowing across several farm fields or a forest.
- Low head schemes generally use large quantities of water flowing over a relatively small height (less than 10 metres, such as at old mills or weirs).

A viable scheme will generally either include a lot of flow over a small height, or a little flow over a large height. While the power of these two systems can be the same, the technological, ecological and construction issues will be quite different. The geography of the local area will dictate which type a community group chooses to develop, but in general, high head systems are cheaper per kW installed as they require less civil engineering.



CHECKLIST | WHAT YOU NEED TO START A SMALL HYDROPOWER PROJECT

Low head (flatter areas)

- ☐ An existing weir or dam
- ☐ Falling height of 2 meters or more
- ☐ Sufficient flow and year-round distributed precipitation
- ☐ Adequate space for inlet canal and bypass
- ☐ Adequate space for a fish bypass
- ☐ A positive environmental impact assessment: the installation does not harm the fauna and flora of the area.
- ☐ Access to the electricity grid at a reasonable distance.

High head (mountainous or hilly areas)

- ☐ Sufficient rainfall for at least 8 months
- ☐ At least 10 meters of falling height
- ☐ Watercourse with a drainage area of at least 0.5 km^2
- ☐ Access to the watercourse and a solid foundation for water intake
- ☐ Sufficient space for the water intake and the bypass
- ☐ Space for the turbine/generator near the watercourse for the outflow of water
- ☐ Usually, there are no issues with fish since they either do not exist in the upper reaches or can migrate in the watercourse.
- ☐ Access to the electricity grid at a reasonable distance

COMMUNITY HYDRO COOP NEEN SOLLARS | UK

In the UK, Neen Sollars Community Hydro Coop owns a 12.5 kW hydroelectric installation at Tetstill Mill, on the River Rea. The turbine provides green electricity to the local electrical grid, representing around 20% of the domestic power use in the village of Neen Sollars and locally meeting the national target of 20% renewables.

This project is a model for the region, as the first renewable energy installation in the West Midlands to be community-owned.

The Neen Sollars Community Hydro Coop supplies energy to the local grid.
© Share Energy

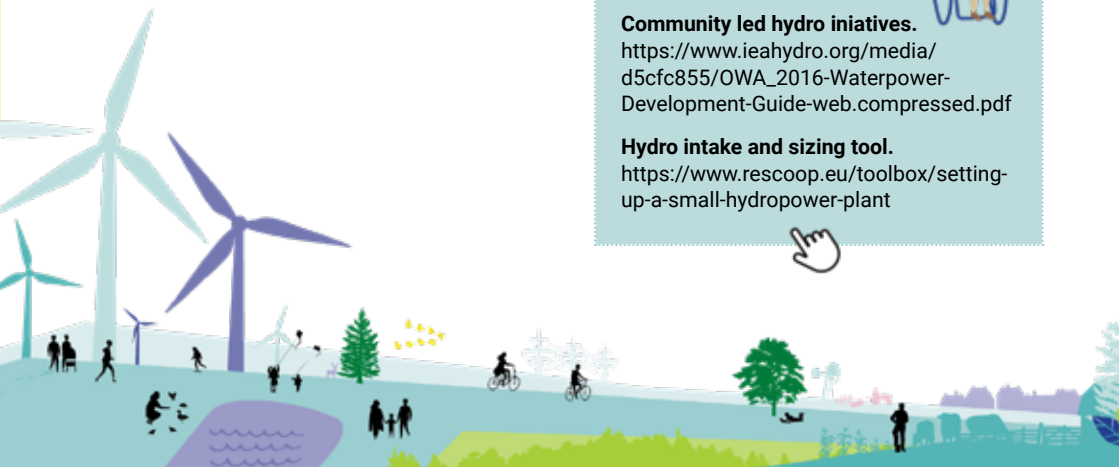
The key benefits are:

- The generation of green electricity.
- Production peaks during cold, wet weather, aligning closely with demand.
- Generates returns for citizens who have invested.
- Generates income for landowners.
- High-head small hydropower generally has a very small environmental impact and can stimulate the ecological restoration of wetland and stream corridors.
- Can create a small subsidy fund for other climate projects.
- Projects are expected to last a minimum of 50 years.
- Construction work can be carried out by local contractors.
- Awareness-raising and education in the local area

The project has been entirely conceived and executed by local people, and is integrated in wider efforts to improve the ecological status and sustainability of the Rea catchment.

Community led hydro iniatives.
https://www.ieahydro.org/media/d5cfc855/OWA_2016-Waterpower-Development-Guide-web.compressed.pdf

Hydro intake and sizing tool.
https://www.rescoop.eu/toolbox/setting-up-a-small-hydropower-plant



BIOMASS
CHAPTER 22

Biomass can be a renewable fuel when it comes from sources such as forest residues, tree surgery waste, food waste, agricultural waste and other wood residues (such as sawdust).

In theory you are emitting CO_2 by burning wood, but the idea is this carbon will eventually be absorbed by new growth that replaces what you have burned.

However, it is not always a given that this new growth will take place. And we know we are in a crucial decade for the climate, and we need to take carbon out of the atmosphere! This is why biomass is not suitable for large-scale deployment, but for some communities, it can be part of the solution, in particular when local resources are sustainably managed.

Biomass is a versatile material that can be used to produce:

- Heat, for space or hot water,
- Electricity,
- A combination of heat and power (electricity) in a Combined Heat and Power (CHP) plant.

TYPES OF BIOMASS

1) WOOD

Wood can be used in the form of logs, wood chips and wood pellets, for wood stoves or wood-chip boilers used for space and water heating. Wood chips are generally only used in larger boilers, such as those used in schools, community buildings and offices.

On a larger scale, wood can be used for the production of electricity. The main method for this is combustion plants (where wood is burned to produce steam). However community projects should never be involved in the burning of whole trees, or other activities that participate in deforestation.

2) AGRICULTURAL WASTE

Other methods using biomass taken up by farmers are by-products of conventional agricultural activity. They include:

- "Dry" agricultural wastes, such as straw that can be burned to produce energy.
- "Wet" wastes such as green matter or slurry can be "digested" to produce methane in a process known as anaerobic digestion. This can be used to fuel a gas engine to produce electricity and heat.

There are already examples of chicken litter combustion, animal slurry digestion and straw combined heat and power projects working well in this country. In many cases, however, these projects are only economically viable if an outlet can be found for the heat produced such as nearby factories and the by-products fertilisers for farms.

Keep in mind that large-scale animal farming also comes with many ecological issues — if you are increasing their profits with bioenergy, you may be supporting and perpetuating an exploitative and unsustainable system.

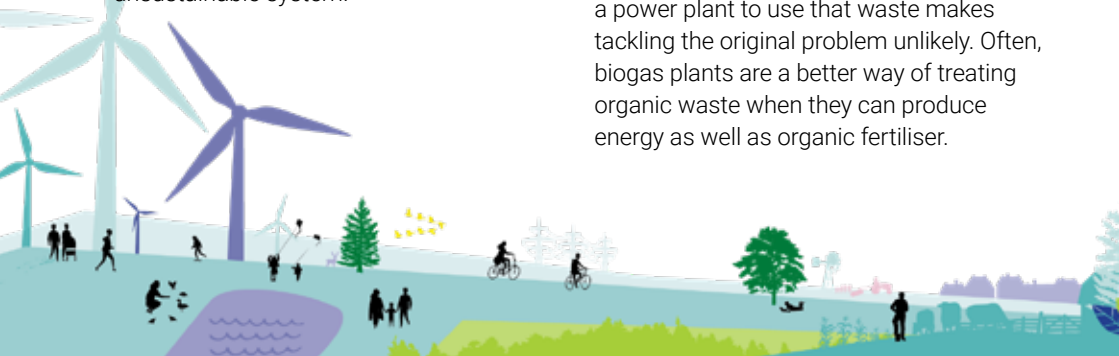
3) MUNICIPAL AND INDUSTRIAL WASTE

Municipal waste products need to be minimised or recycled wherever possible. However, there will always be some requirements for disposal. Some forms of municipal and industrial waste can be described as biomass — such as waste food and wood waste (from the construction industry, for example).

Many local authorities now operate a waste food collection service. The waste food is recycled and used to produce compost, or used for the production of electricity in an anaerobic digestion plant (a biogas plant).

Whether the burning of other types of municipal waste to produce energy can be described as renewable is a matter of some debate. There can be environmental benefits if waste is used to generate electricity and/or heat, such as reducing demand for landfill space. However, emissions and residues can cause environmental problems.

What is important to avoid creating a demand for waste. If there is unsustainable food waste in a community, setting up a power plant to use that waste makes tackling the original problem unlikely. Often, biogas plants are a better way of treating organic waste when they can produce energy as well as organic fertiliser.



ENERGY INDEPENDENT VILLAGE KNĚŽICE | CZECH REPUBLIC

By relying on locally sourced biomass, the village of Kněžice in the Czech Republic no longer has to pay for imported coal, and can instead channel these funds into local businesses. After several years of operation, evidence shows the project has boosted the local economy and reduced CO_2 emissions.

"The biomass facility fits well our local peasant mindset," said Milan Kazda. "Farmers grow the organic material, the municipality buys it from them, the heat produced is then sold to the residents, and overall a financial flow remains in the village. There was nothing revolutionary about this — it's totally standard local self-sufficiency, which historically has always been here. We simply wanted to go back to our roots."

The current facility is in two parts, the biomass plant that produces heat for the village and the biogas plant that produces heat and electricity that feeds into the grid.

The biomass plant, located in the north-end of the village, burns organic material from various sources, mainly wood chips and straw bought from local farmers. The heat generated flows through six kilometres of well insulated pipelines to 150 homes in the village, providing heating and hot water.

The biogas facility uses bio-waste, including animal manure from agricultural cooperatives in the village, waste from forestry or gardening, sewage from septic

Milan Kazda
the Mayor of Kněžice.

tanks, and even leftovers from restaurants in the area! Materials that would have once been thrown away are now a prized energy source. This plant produces heat and electricity. Overall, the biogas station produces 2,600 MWh of electricity annually. Byproducts of the process are also used for land fertilisation.

Operational practice is that as long as the biogas, that uses only waste products manages to cover heat consumption, then the biomass plant is switched off. During the winter (and other cold days) both biomass and biogas plants are operating.

The project is one of the first of its kind in the Czech Republic and had to overcome many hurdles. Instead of selling electricity directly to their inhabitants, the municipality must sell it to the grid and villagers must buy it back at five times the price paid. This deters other villages from developing similar such energy systems, and has also stopped Kněžice from developing the project further, but the village has plans to install solar PV on municipal buildings when legislation makes it possible.

At first, not everyone in the village was convinced about the new endeavour. A survey showed only 80 households were interested in the new project, and only because of the low price of heating were they interested. Mayor Milan Kazda knew the project could only work when Kněžice's community stood behind it. So he instructed the oldest, most respected members of the village to discuss the biomass central heating project with families in the community. This helped get the 120 households on board required for the new energy project to be financially feasible.

Many villagers were still afraid the new system wouldn't work and the mayor had to reassure them they could continue to use the previous heating system if they still wanted to. However, once the central biomass heating was in place, more and more people joined. Shortly after the project was completed, 27 more households signed up. Today, the plant serves about 90% of Kněžice's population.

This demonstrates how people often need to see something works before they can have complete confidence. Be prepared to be patient, especially in the first phase of your project.

BIOMASS
CHAPTER 22

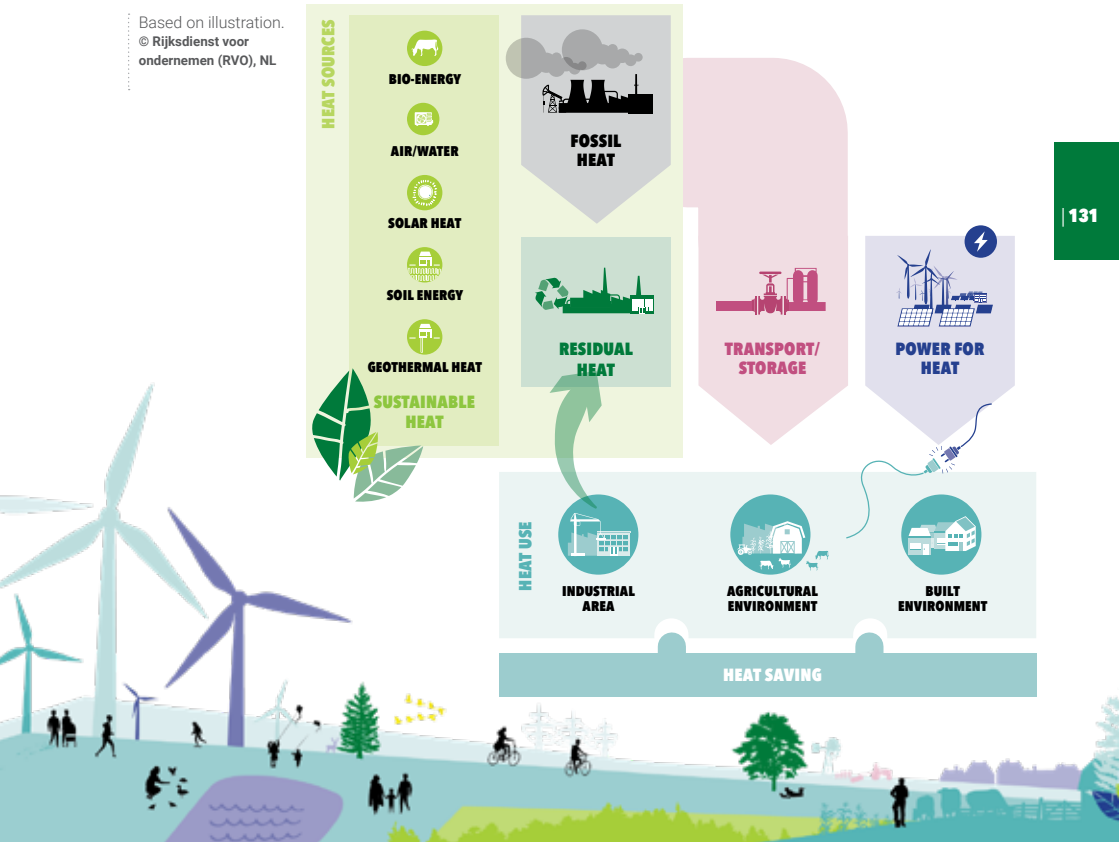
Wood Fuel Frequently Asked Questions.
https://nef.org.uk/renewable-energy

District biomass systems and how it works. https://www.renewableenergyhub.co.uk/main/biomass-boiler-information/district-and-community-biomass-heating-solutions/

SUSTAINABLE HEATING AND COOLING SOURCES
CHAPTER 23

Apart from heating with biomass from residual flows or residual waste, residual heat from industry, power plants and servers, there are also other - sustainable - heat and cooling sources.

Based on illustration.



SUSTAINABLE HEATING AND COOLING SOURCES
CHAPTER 23

GEOTHERMAL ENERGY

1) DEEP GEOTHERMAL ENERGY

Geothermal energy is the use of heat from the deep subsurface (from 500 meters and deeper) for heating houses, buildings, greenhouses, and light industry. Whether geothermal energy is possible depends on the soil conditions and composition.

Between the geothermal source and the buildings, a heat network is needed with sufficient suitable heat consumers. A rule of thumb here is that there are about 4,000 houses needed. Depending on the depth, geothermal energy can directly supply a heat network with heat with a temperature of approximately 70-90 °C. In the Netherlands e.g. geothermal energy currently is mainly used in the greenhouse horticulture sector. There are also projects in development for the built environment.

More information: https://publications.jrc.ec.europa.eu/repository/handle/JRC130585
https://geoera.eu/blog/muse-differences-between-deep-and-shallow-geothermal-energy/#:~:text=In%20contrast%20to%20the%20direct,very%20attractive%20in%20urban%20areas.

Geothermal energy.
© https://www.larderel.nl/post/wat-is-geothermie

SUSTAINABLE HEATING AND COOLING SOURCES
CHAPTER 23

2) SHALLOW GEOTHERMAL ENERGY AND STORAGE OF HEAT AND COLD

Geothermal energy is the use of the soil to extract and store heat and cold. It is a future-proof solution for making homes and buildings free of natural gas. One speaks of shallow geothermal energy up to a maximum depth of 500 meters. A heat pump upgrades the heat from the ground to a level that can be used by buildings. For individual buildings this can be done with a so-called bottom loop; for large buildings or clusters of buildings this can be done with a heat and cold storage system or ATES (Aquifer Thermal Energy Storage). The heat used in the winter must be replenished in the summer. This can be done by cooling buildings in the summer, and by actively introducing heat into the soil.

More information: https://hess.copernicus.org/preprints/hess-2023-62/hess-2023-62.pdf

AQUATHERMAL ENERGY

Aquathermal energy comprises the heating and cooling of buildings using heat and cold from surface water (TES), wastewater (TEW) or drinking water (TED). The heat from the water can be stored in the soil if necessary and then upgraded with a heat pump. This can be done centrally with a collective heat pump, or with a heat pump per building. A heat network is needed that transports cold, lukewarm, or hot water to the buildings. The financial and technical feasibility of a heat network with aquathermal energy depends on the proximity and size of the heat source, the need and possibilities of heat storage, the building density, and the degree of insulation of the buildings.

More information: https://www.deltares.nl/en/expertise/areas-of-expertise/energy-transition/aquathermal-energy

SUSTAINABLE HEATING AND COOLING SOURCES
CHAPTER 23

1) TES: THERMAL ENERGY FROM SURFACE WATER

With Thermal Energy from Surface Water (TES) you extract heat from surface water (the sea, a lake, pond, canal, stream, river, brook) with a heat exchanger in winter. An electrically driven heat pump ensures that the temperature is sufficiently raised to provide heating and domestic hot water in buildings. In many cases, the temperature of the surface water also allows you to cool the buildings in summer.

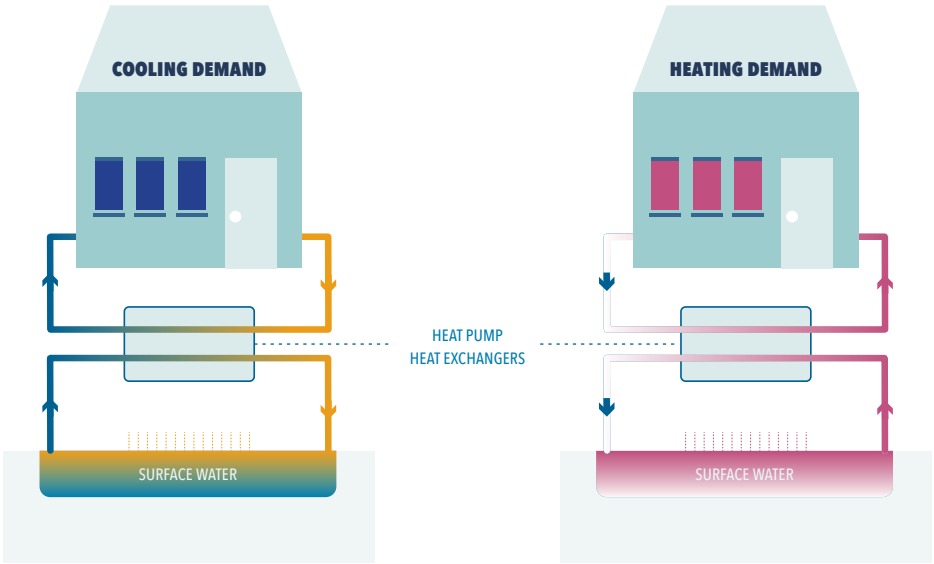
2) TEW: THERMAL ENERGY FROM WASTEWATER

We can use energy from wastewater in the sewer for heating and cooling. This is sustainable, ecological and climate-friendly. A heat exchanger in the sewer captures the heat from the wastewater, which is upgraded by a heat pump to heat a building.

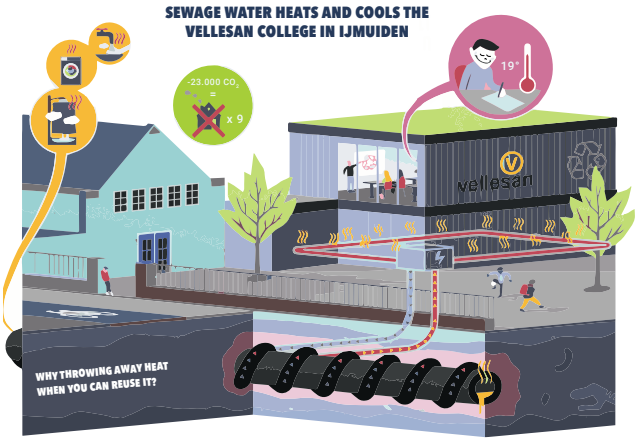
Sewage water has a temperature of 12 to 18° and is therefore a good source of energy. Recovery of this heat via heat pumps offers a lot of possibilities.

Learn more: Heat Recovery from Wastewater:
https://encyclopedia.pub/entry/11457

Scheme of aquathermal energy with surface water. On the left the summer situation, on the right the winter situation.



SUSTAINABLE HEATING AND COOLING SOURCES
CHAPTER 23



Sewage water heats and cools.
© Source: https://www.velsen.nl/

3) TED: THERMAL ENERGY FROM DRINKING WATER

We can also use heat and cold from drinking water. From the drinking water pipe, heat or cold can be transferred via a heat exchanger for direct use or storage in the soil in a thermal energy storage system. The drinking water then flows back into the drinking water network.

SOLAR THERMAL ENERGY

Everyone who already has a solar boiler and uses it to make sanitary hot water or to heat the house knows you can do a lot with solar heat.

But solar heat is also very useful in a heat network or for industrial processes.

If the temperature is too low, you can install a heat pump. Some solar collectors convert the sun's rays into heat and electricity. This is done with so-called PVT panels. It is also best to combine these with a heat pump.

Large-scale solar heat projects often use a ground set-up. Sufficient space is needed for this, and the land should not be too expensive.

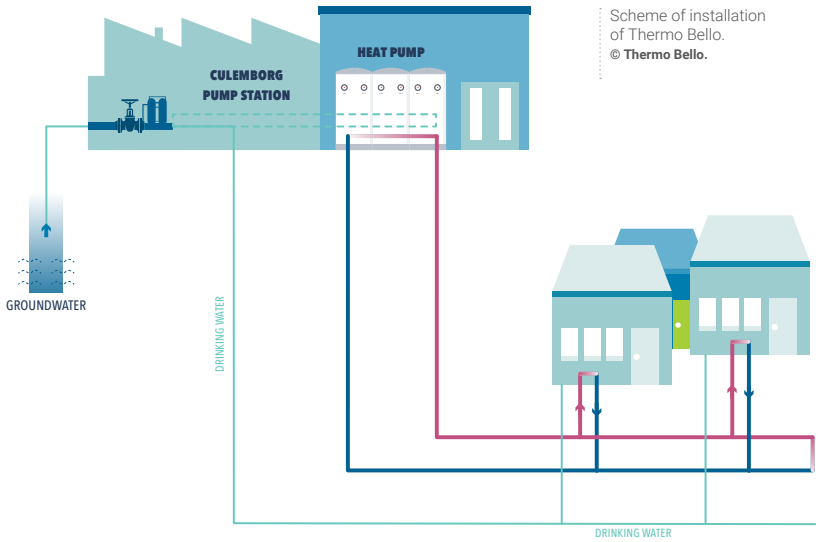
More information: https://www.german-energy-solutions.de/GES/Redaktion/EN/Text-Collections/EnergySolutions/EnergyGeneration/solar-thermal-energy.html

COLLECTIVE DISTRICT HEATING IN CULEMBORG | THE NETHERLANDS

In the Dutch neighbourhood EVA-Lanxmeer, a collective district heating system was chosen with drinking water as the primary heat source. The drinking water supply in the Vitens water basin is cooled in winter to heat homes, apartments and utility buildings in the neighbourhood.

The heat is extracted in the heat station of Energy Company Thermo Bello, which is built against the clean water basin of Vitens. Thermo Bello is owned by the residents of the neighbourhood where the heat is supplied. Drinking water is continuously prepared in the basin. So there is always a supply of water available. Moreover, only a limited volume of drinking water is needed to generate heat. As a result, the water never cools down too much. However, the residents enjoy a comfortable warmth in winter, obtained in a sustainable and ecological way.

For more information see www.thermobello.nl



Scheme of installation of Thermo Bello.

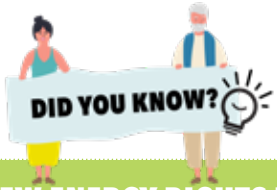
MAKING IT HAPPEN

Over 200 people gather in Athens to discuss and share community energy topics. © **REScoop.eu**

BARRIERS & CHALLENGES: BE PREPARED
CHAPTER 24

The path to a successful community energy project is not always an easy one. Many barriers and challenges await you.

New EU directives should make it easier for you, as national governments must assess barriers to local community energy (see text box). Checking if your government has already carried out this work, and published it, could be one step towards identifying these barriers.



NEW ENERGY RIGHTS FOR EVERYONE UNDER EU LAW

Community energy is unequally developed in Europe. For projects to succeed, good laws and rules need to support such initiatives. Projects flourish in countries where it's easier to set them up; while in countries with regulatory uncertainty, it takes very dedicated activists to push forward. Adding to difficulties, national laws often change.

Since 2018, community energy is recognised in EU law, as part of the legislative package governing the EU's energy system for this next crucial decade. This could be game-changing for anyone who wants to get involved in community energy.

The revised Renewable Energy Directive and the Electricity Market Directive both recognise the vital role that communities will play in the energy transition. There are enforceable rights for you to engage in community energy, and it is the responsibility of your national government to ensure that unfair barriers do not block your path.

CHECKLIST | KEY ASPECTS OF THE NEW EU LAWS

- ☐ The importance of citizens and communities in the energy transition is recognised;
- ☐ Community energy projects are legally defined (see definitions box),
- ☐ Through a renewable or citizen energy community, citizens, SMEs and local authorities can set up a legally recognised entity to collaborate,
- ☐ Everyone has a right to produce, store, share, consume and sell their own renewable energy,
- ☐ You have the right not to be unfairly charged for energy you produce yourself,
- ☐ You have the right to participate in a renewable energy community,
- ☐ You have a right to awareness-raising materials and trainings to help you participate,
- ☐ National governments must assess the barriers and potential of community energy in their territories,
- ☐ National governments must create an enabling framework to support community energy in their country,
- ☐ There must be one place (a one-stop shop) for citizens to go for advice, to gain permits to participate in the energy system.

BARRIERS & CHALLENGES: BE PREPARED
CHAPTER 24

Below is a list of barriers that can result in projects failing. However, if you are prepared and have patience, these barriers can be overcome. Breaking the barriers down and developing ideas to overcome them step by step can make them less daunting. It's also likely that the barriers you face have been faced before by other community energy initiatives. Seeking advice and mentorship from others is always key to success.

Here are a few challenges to be prepared for:

1) INTERNAL GROUP CONFLICTS

As outlined in the chapter on group dynamics, it is almost inevitable that there will be internal conflicts in your group at some stage. This could be around power, differing visions or other problematic behavior. Read the chapters about group dynamics and don't be surprised or disheartened if these kinds of problems do come up.

You can also prevent certain problems before they arise by having a clear group agreement and agreed ways of working. Try not to take things personally and remember the big picture. The people can be what makes community work challenging, but it's also what makes it uniquely rewarding.

2) LACK OF FINANCE

Finding money can be one of the biggest challenges, and some projects have to stop or alter their plans because they can't get access to the money they need. Be prepared to spend some time and energy in your group thinking about money. Chapter 25 is dedicated to information on finance for each different stage of your project. It's also good to look for someone with previous experience or expertise.

If lack of finance keeps blocking your project, you might want to downsize your ideas and start with something smaller, like applying for a grant for renovating a few homes in the community. You can then build up a track record of success which can help you access funding in future. The good news is that there are always options, so if at first you don't succeed, try and try again.

3) PLANNING PERMISSION

Getting planning permission is one of the key milestones in any project. Without a permit to build what you want, your project will need to change direction. It's good to research early what is possible in your area. Proximity to something like an airport or a nature protection area can be a problem for wind projects for example.

When you do the feasibility study, the ability for the project to get planning will be one of the main things to assess, along with natural resources (evaluating if there's enough sun or wind, for example). Working with a professional consultant with experience of local rules on planning can be a huge advantage. See more about planning permission in the text box below.

4) ADMINISTRATIVE BURDEN

There will be many permits and applications to apply for, as well as planning permissions. Applying for grid connect, and dealing with national and sometimes regional agencies and banks requires a lot of time and energy. Often these processes are designed with big businesses in mind, which have professionals who can spend a lot of time to do this. Be prepared to fill in a lot of forms and spend some evenings on the computer dealing with project administration.

Make sure this work doesn't fall on one or two individuals. A team or working group of between 3 and 6 is needed here. Teamwork is always more effective and enjoyable than working alone. You might want to set up a shared drive online where you can keep all your documents and past applications for things, to sometimes copy and paste work that's already done.

5) GRID CONNECTION

Depending on where you are and your local grid, connecting your project to the grid can be very challenging. This is a good thing to research early on in your project. Sometimes work will be needed to upgrade the energy grid, and you may be expected to pay for this. Many grid operators are not sympathetic to renewables, especially smaller projects.

This is one of the reasons you might want to think about taking ownership of your local grid, so that you can run it in a way that supports the switch to an efficient, decentralised renewable system. See the story of EWS Schönau in chapter 13.

BARRIERS & CHALLENGES: BE PREPARED
CHAPTER 24

6) LACK OF UNDERSTANDING OF WHAT COMMUNITY ENERGY IS

Sometimes people won't even know what a community energy project is. In countries where the concept of community action on energy is not well developed or well known, this can be a barrier. It could make it more difficult for you to get a loan from the bank, your local authority might not understand what you want to do, and even applying for grid connection or planning permission will be more challenging because you will be considered a new kind of "market actor". In some instances, in Eastern Europe for example, there may even be a negative connotation to the word "cooperative" due to the Soviet era.

You can overcome these barriers by using some of the examples in this book to explain what community energy is and how it works. You might want to organise a presentation for your community, to show some examples from all over Europe that could work in your community. It is possible that someone from REScoop, Energy Cities or Friends of the Earth Europe could help you with this presentation, or potentially come and support you in person.

7) LOCAL OPPOSITION TO RENEWABLES

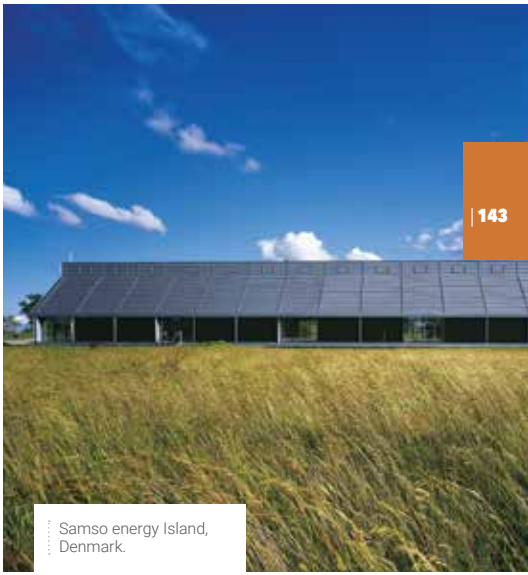
Some people see renewables as an unpleasant piece of infrastructure. Wind and solar farms do have a visual impact on the landscape. It's understandable that people don't want to put up with this, especially when all the benefits are flowing out of the community. For this reason, some people might object to your planning application. You might even be unlucky enough to live somewhere where there is an organised group against wind energy.

You will need to demonstrate to as many people in your community as possible that this project will bring local benefits. Inform people as early as possible about your plans to hopefully avoid local opposition.

PLANNING PERMISSION

Planning permits are crucial. In Germany for example, planning a windpark can be a complex undertaking. In theory, wind turbines are privileged structures that can be built everywhere in the country, including non-inhabited areas. However, federal states (Länder) or municipalities effectively limit the development of wind turbines to certain zones in their land-use planning. Therefore, it's important to find out where land-use planning allows the development of wind energy in your particular area. Most federal states offer advice and handbooks on how this is regulated. In other countries, renewable associations can also offer resources or advice.

It is possible that at the planning stage, especially for wind, there might be objections. Be prepared for this and make sure you are still reaching out to the wider community as much as possible to address concerns and possibly change your plans based on concerns.



Samso energy Island, Denmark.

DESIGN & FEASIBILITY STUDIES
CHAPTER 25

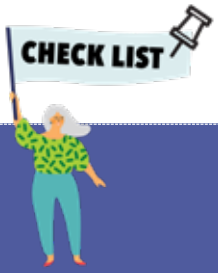
Once you have decided what you want to build, you need a design and feasibility study. You will want a basic outline to help get finance (see next chapter), and it should include some aspects of how much wind, sun or other resource is available.

The design will be crucial for getting permission from the local planning authorities. A basic design template will involve:

1. A plan of the current site,
2. A plan of the proposed finished site,
3. The specifications of any proposed hardware systems.

BUSINESS PLAN

A business plan will be very useful for your project. It will help a lot when approaching a bank or other partners. The simple exercise of sitting down in your group and making such a plan can in itself be very useful as the discussions and vision will need to get concrete and clear.

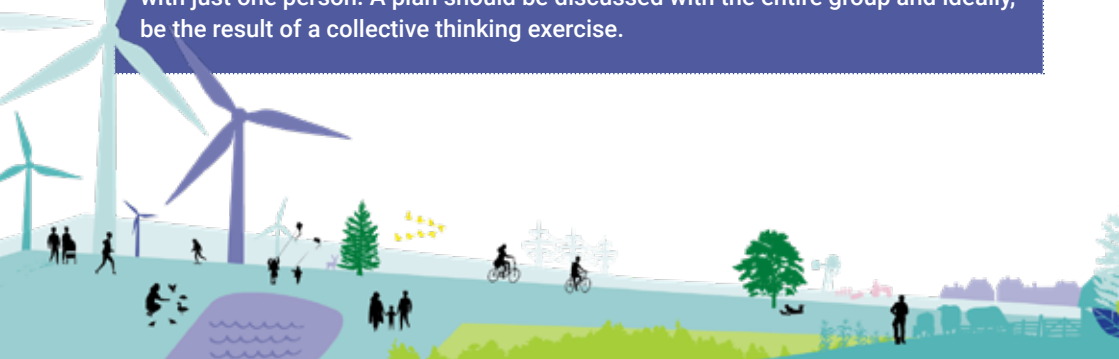


CHECKLIST | MAKING A BUSINESS PLAN

There is no predefined list of things a business plan should cover but we could easily think of the following:

- ☐ What is your overall long-term vision, mission and objective?
- ☐ Which strategy do you want to put in place to achieve your overall mission?
- ☐ Which topics do you want to focus on first? Energy efficiency and energy savings? Renewable energy? Transportation? Heating and cooling? Cooperatives typically start with a specific focus, and often take on more challenges with time.
- ☐ Which activities do you want to bring forward first? Production? Supply? A combination of both? Storage and flexibility, including aggregation and demand response? Distribution grid management? Again, you may want to start with one activity and expand in the future.
- ☐ What will your governance model look like? Who will own the project: citizens, the municipality or a third partner? Is a legal entity needed? Should it be cooperative?
- ☐ To whom will you reach out to? Who will lead the campaign? Do you have support from local authorities?
- ☐ How will you finance your project? Will your project be economically viable? How much revenues and how much costs can you reasonably expect? How will that evolve over time?

A business plan is not a static document, it will likely change over time and you will likely have several versions. It's also crucially important not to leave this work with just one person. A plan should be discussed with the entire group and ideally, be the result of a collective thinking exercise.



DESIGN & FEASIBILITY STUDIES
CHAPTER 25

REScoop report on business models.
https://www.rescoop.eu/toolbox/report-on-the-existing-business-models

KlimaGEN provides FAQs/concepts for developing the right business model for e-carsharing, electricity for tenants and energy saving. (German)
https://www.dgrv.de/news/dgrv-projekt-klimagen/

Guide for Stakeholder Management.
https://www.rescoop.eu/toolbox/guide-for-stakeholder-management

Guide to Community Energy Strategic Planning.
https://www.energy.gov/eere/slsc/guide-community-energy-strategic-planning

FINDING THE MONEY
CHAPTER 26

One of the biggest challenges you will face is funding your project. You will need funding, in different amounts and forms, from the pre-planning stage through the development, investment and operation phases. This sometimes needs to happen at the same time, or even before you do feasibility studies.

Overcoming the financial barriers requires a mix of innovative approaches and using existing instruments. Some people are better at finance and fundraising than others, and a bit of experience or a head for numbers can help a lot. Bear this in mind when you think about who can be useful in your core team.

The good news is there are a variety of innovative solutions to choose from, from share offers, government support, bank loans and crowd-funding.

OPTIONS FOR FINANCE

1) GRANTS

One good option, especially in the early stages of your project, is to apply for a grant. Check out what's available at the national or regional level. There could be community development grants run by your national government for example, that could help cover early costs.

For most of these applications you will need your group's constitution or mission statement, and you will need to explain what you want to achieve with the money.

If you are writing a grant application for the first time, find people to read it over: there are bound to be people in your community who have prepared these kinds of applications before. And if your first application gets rejected, don't despair, be prepared to dust it off, improve it, and submit it again.

FINDING THE MONEY
CHAPTER 26

2) CROWDFUNDING

Community energy projects typically get financed by citizens, and there are a variety of crowdfunding schemes at your disposal.

- Some projects get financed through donations, where citizens don't expect anything in return: they put in money simply because they believe in the project and they want to support it.
- Bonds are loans and get paid back after a certain period of time: citizens will expect a financial return for their investment (interest).
- Shares are not loans and do not have to get paid back. Shares give ownership and a say in how the cooperative should invest. Citizens energy cooperatives typically finance their projects by issuing shares. It's worth checking whether there's any national regulations on public share offerings, because you might need a prospectus first.

3) TRADITIONAL BANK LOAN

"Good projects find funding": at least that's what banks would like us to believe. It might be worth checking whether a traditional bank is willing to step in and provide a loan for your project, but the reality is often more complicated than that. Starters without a track-record often find it hard to obtain loans from traditional banks.

Another thing to keep mind is that banks will usually provide up to 80% of the funds, leaving a community energy project with the challenge of finding 20% themselves.

4) ETHICAL OR COOPERATIVE BANK

If traditional banks are unwilling to finance your project, you may consider reaching out to ethical or cooperative banks. On the website of the European federation of ethical and alternative banks (FEBEA), you will find out contact details of ethical and alternative banks that operate in your region.

5) THIRD-PARTY FINANCING

If banks don't want to provide funding, you may still consider third-party financing. This third party could be an established cooperative. BeauVent from Belgium and Som Energia from Spain provided Boa Energia from Portugal with a loan so that they could do their first project. The loan was paid back once the project got visibility and citizens decided to join.

6) LEASING

Leasing means that you rent the renewable installations from a third party, who gives you the chance to buy the installations after a certain period of time. Leasing can be interesting for starters who might need a few years to raise funds from their members.

7) COOPERATIVE FUND

Renewable energy projects are capital-intensive investments, especially at the beginning. At the same time, citizens often come on board only when a project is up and running, and they can see its results with their own eyes. If you want to involve citizens in renewable energy projects, cooperatives need to put up the upfront investment. Starters might be in need of money, whereas established initiatives might be in need of projects. A cooperative revolving fund might provide opportunities for collaboration.

8) LOCAL AUTHORITY OR MUNICIPAL SUPPORT

The Rumbling Bridge Hydro Coop in Scotland was set-up with support from a CARES development loan and Energy4All, another cooperative. The hydro cooperative now owns a 500-kW run-of-river hydro power station. So far, the output from the turbine has exceeded the projected output, so the local community stands to earn a considerable community benefit from the scheme over the projected 40 years of operation.

FINDING THE MONEY
CHAPTER 26

TRADITIONAL VS. ETHICAL BANKS

Going to a normal or traditional bank can be one of the most difficult ways to raise money, as many banks are not well equipped or willing to dedicate resources to such projects — they often simply do not understand them.

The solution can be collaboration with ethical and alternative banks, their DNA makes them more receptive to cooperative and community values and more understanding of your constraints. They are more usually much more willing to follow and support smaller projects, and it is always worth supporting ethical and cooperative banks. The more they grow, the better the chances are for other community energy projects to be financed!

With new rights afforded by EU laws, more and more projects should be set up, and it should become easier for more financial institutions to understand the common risks and returns for community energy.

Westmill Wind & Westmill Solar cooperative.

THE SHARE OFFER MODEL

A very successful model used by a lot of cooperatives is offering shares. This is a way of raising money, and it also creates members with decision-making power. Members of the cooperative wear multiple hats, combining ownership, investment and use. Each of these hats or roles is associated with specific responsibilities and decisions.

- By acquiring shares, members become owners of the project, and therefore participate in the control of the organisation.
- By acquiring shares, they also become investors, and in this respect, they may expect a return on their investment, be it financial, social or environmental.
- Through economic participation, they become users of the cooperative, and get the right to "use" its services.

FUNDING WIND | THE NETHERLANDS

Zeeuwind and Deltawind from the Netherlands are two local citizen energy cooperatives that successfully worked together to develop a 102 MW wind project worth 215 million Euros called "Windpark Krammer". This is an option to think about, look around in your country or region and see if there are other cooperatives that you can work with. This can help with financing big projects such as wind.

The two Dutch energy cooperatives Zeeuwind and Deltawind worked together to develop Windpark Krammer.

To reach a financial close in 2018 the two cooperatives initially sold 49% of their project to the wind turbine manufacturer Enercon. As well as the existing members of the two cooperatives local citizens could also participate directly by buying bonds. This raised further capital. In only two days, they managed to raise over 10 million Euros.

Now that the project has been completed and the wind turbines are operational, Enercon is willing to sell its part.This gives the cooperatives the chance to increase their ownership over the project. The two cooperatives will launch a second financing campaign in October 2020 to raise another 6 million Euros and obtain a 60% majority in the project. This could be a solution for your project as well, especially if you work with a friendly wind-turbine manufacturer such as Enercon. There are almost always solutions to finding the money and by working with others you can make it work!

Investment needs for the local energy transition. https://energy-cities.eu/publication/investement-needs-for-the-local-energy-transition/

Innovative financing model for energy efficiency: Ecopower, Pajopower and Brixton. https://www.rescoop.eu/toolbox/innovative-financing-model-for-energy-efficiency

Report on financial barriers and existing solutions. https://www.rescoop.eu/toolbox/report-on-financial-barriers-and-existing-solutions

Financial Handbook for REScoops (EN/GE/FR). https://www.rescoop.eu/toolbox/financial-handbook-for-rescoops

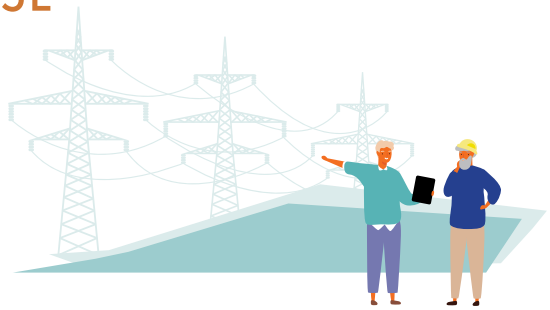
REScoop book: Mobilising European citizens to invest in sustainable energy. https://www.rescoop.eu/toolbox/mobilising-european-citizens-to-invest-in-sustainable-energy

European Association of Co-operative Banks (EACB). http://www.eacb.coop/en/about/membership/full-members.html

European Federation of Ethical and Alternative Banks and Financiers (FEBEA). https://febea.org/members/

Find out more about the seven programmes funding the European Energy Transition. https://energy-cities.eu/your-brief-guide-to-the-7-eu-programmes-funding-the-energy-transition-in-cities/

GRID ACCESS & POWER PURCHASE AGREEMENTS
CHAPTER 27



If you have a project that produces electricity, you need to be connected to the grid to sell your energy, and you will need someone to buy your energy from you.

- One model is a subsidy or so-called "feed-in-tariff" to compensate you for your energy. However this model is being phased out in many places.
- One solution is to sell your energy to a green supplier, that could be a cooperative as well. The cooperative Enercoop in France for instance, buys electricity from small-scale projects that produce renewable energy.
- Sometimes a cooperative combines its own renewable production with a supplying license, meaning they can sell their electricity to their members directly, like Ecopower in Flanders or Co-op energy in the UK.

To connect to the grid, you need to find out who owns it, and who is your Distribution System Operator (DSO). They have a lot of power to connect you or not, so establish a good working relationship with the staff there if you can! In some countries, grid connection can be a long and frustrating process, so it makes sense to find out what the situation is in your area before you seek planning permission. This is also why it makes sense for citizens to take the energy grid into local ownership, so that it is run for the common good rather than for profit. Check out chapter 12 and the inspiring success story of Schönau in Germany to learn more about this.

POWER PURCHASE AGREEMENTS

A Power Purchase Agreement or a PPA is a long-term electricity purchase agreement where typically, a large electric user or a number of smaller electricity users, purchases a certain amount of electricity from the electricity producer under a long-term contract, for example for 10 to 20 years.

Be prepared to negotiate, as the company you are dealing with will probably want to drive a hard bargain. Bear in mind that you might want to open negotiations with a few companies, and shop around for the best deal you can get.

Another option to be considered is to sell directly to a high energy consumption public facilities such as a heated swimming pool or a sewage treatment plant. See if your local authority will consider signing a direct Power Purchase Agreements (PPAs) with your energy community. These types of contracts are great if you can get them. They would provide your project with the opportunity to benefit from a stable revenue stream based on a fixed electricity price over a long-term period.

Check out the renewable energy buyers toolkit from REsource.
https://resource-platform.eu/energy-buyers-hub/

Community Energy England resources on PPAs.
https://communityenergyengland.org/files/document/110/1508504912_what-does-a-good-ppa-look-like.pdf

SCCALE municipal guide
https://energycommunityplatform.eu/resources/community-energy-municipal-guide/

KEEP ON GROWING

All community energy projects are a journey, often with many twists and turns. We hope this book provided you with ideas and inspiration for your own adventure.

Very powerful and successful projects have grown up from modest beginnings. Dream big to allow your project to grow.

Your community might be nervous at first, but when they see you succeed, they will gain faith in the project. The local community itself will gain pride and self-confidence. People will think, "We are a town with a cool energy project, we are a place where good things happen, this is a village with a future."

Once a renewable energy project is built, it often becomes much easier to attract other people to invest in the project. To help communities over the first hurdle, a number of countries, regions and municipalities provide direct financial support to energy communities to help them kick-start their project.

The more people feel excited and connected to your project, the more likely they are to support you with their skills, leadership and financial support, allowing your project to grow. You will learn a lot along the way, and gain unexpected connections and skills to push your project forward.

The climate and energy crisis is daunting, but we hope this book has convinced you that you have a real role to play. Getting involved to build a better energy system is something we can all do. This decade is crucial to fight climate change and speed up the energy transition, so if you don't get involved now, then when? If the movement for energy democracy needs us all, if not you, then who?

Good luck on your journey.
You can do this!

After launching a Westmill share offer the local MP - Ed Vaizey and the founder of Good Energy - Juliette Davenport came along to support the cooperative. © **Westmill Wind Farm Co-op**

RESOURCES

Here are some other resources that can help you in your journey.

COUNTRY	LINK TO FIND OUT MORE
AUSTRIA	http://pv-gemeinschaft.at/
BELGIUM - FRANCAPHONE	https://energiecommune.be/communaute/
BULGARIA	https://storage.googleapis.com/planet4-bulgaria-stateless/2019/08/fc698bf7-energy-citizens_booklet_bg.pdf
CZECH REPUBLIC	https://www.hnutiduha.cz/sites/default/files/publikace/2017/11/infolist_o_komunitnich_obnovitelnych_zdrojich.pdf
ESTONIA	https://www.trea.ee/wp-content/uploads/2020/06/Co2mmunity_k%C3%A4siraamat.pdf
FINLAND	http://co2mmunity.eu/wp-content/uploads/2020/04/Co2mmunity-handbook-FI-Yhteis%C3%B6energian-k%C3%A4sikirja-Soumi-V1.1.pdf
FRANCE	https://www.enercoop.fr/blog/actualites/nationale/les-communautes-energetiques-definition-des-futurs-moteurs-europeens-de-la-transition-energetique
FRANCE	https://energie-partagee.org/decouvrir/nos-propositions/
GERMANY	https://www.buendnis-buergerenergie.de/fileadmin/user_upload/Studie_Nutzeffekte_von_Buergerenergie_17092015.pdf
GERMANY	https://www.energiegenossenschaften-gruenden.de/fileadmin/user_upload/downloads/Gruendungsbroschuere_Energiegenossenschaften_A4_WEB.pdf
GERMANY	https://www.buendnis-buergerenergie.de/fileadmin/user_upload/downloads/Broschuere_Klimaschutz_selbermachen/Brosch%C3%BCre%20B%C3%BCrgerenergie_interaktiv17small.pdf
HUNGARY	https://www.mtvsz.hu/kozossegi-energia

RESOURCES

COUNTRY	LINK TO FIND OUT MORE
IRELAND	https://www.friendsoftheearth.ie/power-to-the-people/
IRELAND	https://www.energyco-ops.ie/
ITALY	https://www.legambiente.it/wp-content/uploads/2020/06/rapporto-comunita-rinnovabili-2020.pdf
ITALY	http://www.comunirinnovabili.it/storymap/
LATVIA	http://co2mmunity.eu/wp-content/uploads/2020/05/Co2mmunity-handbook-LV-Rokasgr%C4%81mata-Latvija-V1.2.pdf
LITHUANIA	http://co2mmunity.eu/wp-content/uploads/2020/07/Co2mmunity-handbook-LT-Vadovas-Lietuva-V1.1.pdf
NETHERLANDS	https://energiesamen.nu/
POLAND	http://co2mmunity.eu/wp-content/uploads/2020/03/Co2mmunity-handbook-PL-Podr%C4%99cznik-Polska.pdf
PORTUGAL	https://www.coopernico.org/
SPAIN	https://www.idae.es/publicaciones/guia-para-el-desarrollo-de-instrumentos-de-fomento-de-comunidades-energeticas-locales
SWEDEN	http://co2mmunity.eu/wp-content/uploads/2020/03/Co2mmunity-handbook-SE-Handbok-Sverige.pdf
UK	https://communityenergyengland.org/how-to-pages/starting-up-a-group-organisation-inc-structure-registration

GLOSSARY

Administrative barrier: When there is so much paperwork and bureaucracy involved in a project that it becomes difficult for the project to proceed this is considered an administrative barrier.

Clean Energy Package: Also known as the Clean Energy for All Europeans' package. This was a big set of EU laws that was agreed in 2019. It sets out all the rules for that will govern the energy system for the crucial decade up to 2030.

Community Energy: The collective ownership of renewable energy by any community. It can also include the ownership or another kind of energy asset such as insulation or electric vehicles.

Citizen Energy: A broader term that applies to all kinds of involvement of citizens in the energy market, includes community energy and prosumers.

Energy poverty: Energy poverty refers to the inability to guarantee necessary domestic energy services due to a combination of low income, high energy expenditure and poor energy efficiency of households.

Energy sobriety: Coined by the French members of the Energy Cooperative movement. It communicates the concept of consciously "giving up" energy use when it feels possible.

Energy efficiency is to reduce the amount of energy required to provide products and services. For example, insulating a home allows a building to use less heating and cooling energy to achieve and maintain a comfortable temperature.

Energy Democracy: Energy democracy is a political, economic, social and cultural concept that merges the technological energy transition with a strengthening of democracy and public participation.

Extractive Economy: This is a mode of economy that is based on exploiting resources such as minerals or fossil fuels. It suggests unsustainable levels of use.

Decentralized energy system:
A decentralized energy system is one where the energy production facilities are centrally located. The dominant system in Europe is currently a centralized one with larger fossil fuel or nuclear plants producing huge quantities of energy that must then be transported long distances. A decentralized energy system allows for more optimal use of renewable energy as well as combined heat and power, reduces fossil fuel use and increases eco-efficiency.

GLOSSARY

Installed capacity: The power generation capacity of a particular plant. It is usually expressed in megawatts, and can come from nuclear, thermal, solar or wind energy or hydropower.

Megawatt (MW): The amount of energy that can be produced by a renewables system is often expressed in Megawatts. A megawatt is a large amount of energy and can power something like 650 homes. Most residential solar systems will not produce anything near a megawatt. The average onshore modern wind turbine produces 2-3 megawatts.

Municipality: A municipality is the governing body of a town or local district.

Photovoltaic (PV) devices generally means solar. It refers to devices that generate electricity directly from sunlight via an electronic process that occurs naturally in certain types of material. PV panels are solar panels.

Prosumer: this term applies to energy consumers who also produce some of their own energy. In general use it applies to single households.

Remunicipalisation commonly refers to the return of previously privatised service or utility to municipal control in this case often the energy grid or a local or regional supply company.

REScoop. A rescoop is a renewable energy cooperative.

Transposition: This is the process by which EU laws such as the Renewable Energy Directive REDII get put into national laws. The transposition of the REDII should be completed by June 2021.

COMMUNITY ENERGY

A **PRACTICAL GUIDE** TO RECLAIMING POWER

Are you interested in taking practical climate action in your community, but not sure where to start? This handbook is here for you!

Gathering expertise from Friends of the Earth, REScoop.eu, Energy Cities, and 27 projects around Europe - this guide is packed with instructions, practical tips, powerful success stories and invaluable resources to build a local, community-led renewable energy revolution.

Community energy is key to action on the climate crisis, boosting local economies, and reinvigorating communities. Whether you're a curious individual, a group embarking on a renewable energy journey, or a local authority making plans - this manual is for you. Covering everything you need to know to get started with your very own community energy project, from tips to handle group dynamics, advice about what technology to use, to guidance on overcoming any barriers you might face.

You too can be part of this quiet revolution and this book tells you how!

COMMUNITY POWER

Friends of the Earth Europe
www.foeeurope.org

RESCOOP.EU
www.rescoop.eu

ENERGY CITIES
www.energy-cities.eu