

ENERGY **COMMUNITIES** REPOSITORY

# ENERGY SHARING FOR ENERGY COMMUNITIES

A REFERENCE GUIDE





# Contents

1

2

3

4



# 1. Introduction

**Energy sharing is an emerging concept within the energy sector, which has the potential to play a vital role in the context of the energy transition. It empowers consumers to collectively operate renewable energy systems and access the generated electricity at reduced rates. In the past, consumers needed to set up a supplier in order to self-consume the energy they jointly produced. Now, this can now be done through energy sharing based on collective investments, service agreements or purchase agreements**

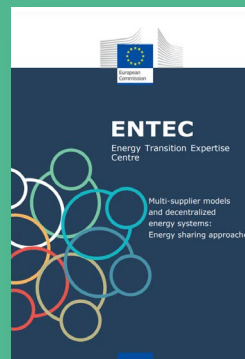
Energy sharing may not only alleviate financial burdens but also foster active engagement in the energy transition, enhancing acceptance and ownership among consumers. Additionally, it can attract investments for regional renewable energy projects and incentivize consumers to align their electricity consumption with shared renewable energy facilities. This, in turn, can at times benefit the energy market, the economy, and grid stability.<sup>1</sup>

In a majority of EU countries, energy sharing has emerged as a form of collective self-consumption within or beyond a building. This makes it possible for households, businesses and local authorities to jointly invest in local production capacity. From that production installation, and through the use of smart meters, members of the community are able to match

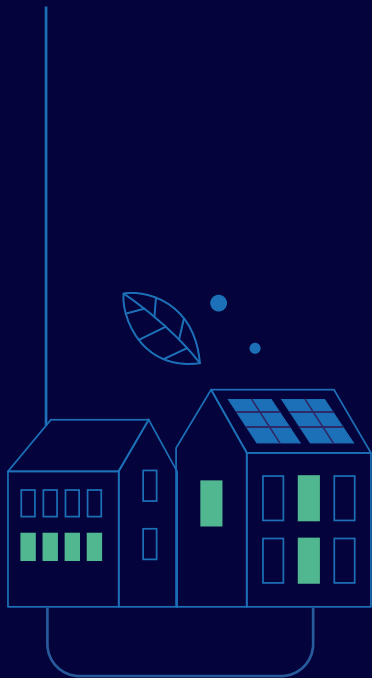
close-to-real-time production with consumption so that the shared electricity can reduce the customer's electricity bill. The EU's Internal Electricity Market Directive (IEMD)<sup>2</sup> and recast Renewable Energy Directive (REDII)<sup>3</sup> provide a description of what the activity could look like for energy communities. The recent Electricity Market Design proposal of the Commission further operationalises energy sharing by defining relevant roles, rights and responsibilities and expanding the right to wider categories of active customers.

The purpose of this document is to provide a reference guide to energy communities looking into setting up an energy sharing initiative. In particular, this reference guide provides information and an overview of resources on different business models, and regulatory approaches from different Member States related to energy sharing within energy communities. This guide does not aim to be exhaustive, nor does it represent a qualitative evaluation or endorsement of the approaches and solutions presented.

We strongly encourage the reader to look for information specific to your national, regional or local context, and to take a closer look at how other communities – in your countries, or in one of your neighbouring countries – have set up their energy sharing projects, and made them economically viable over time.



## 2. Technical terms you need to know around energy sharing



**ENERGY SHARING KEY / COEFFICIENT:** A factor or numerical value used to distribute shared energy among participants in an energy-sharing system within a time interval, which we refer to in this guidance as the matching period. It reflects the proportion or share of the total energy that each participant is entitled to based on specific criteria, such as investment or consumption levels.



**ALLOCATION:** Allocation involves the fair and transparent distribution of shared energy or costs among participants in an energy-sharing arrangement. It ensures that each participant receives their agreed-upon share based on predetermined criteria, such as ownership, usage, or financial contributions.



**MATCHING PERIOD:** Energy sharing regulations typically determine a time-interval in which the production can be consumed by the participating consumers. In regulation, this is referred to as the 'netting period'. The time period that is established usually varies between 15 minutes - 1 hour. This term should not be confused with "net-metering" where electricity injected into the grid within a longer time period (e.g., a month or year) is deducted from the total metered consumption.



**OPTIMISATION (RATES):** Optimization refers to the process of adjusting rates or energy distribution to maximize efficiency, minimize costs, or achieve specific objectives (e.g., providing flexibility services). It involves fine-tuning parameters to enhance the overall performance and benefits of the energy-sharing system.



**METERING DATA:** Metering data encompasses information collected from energy meters, providing details on consumption, production, and other relevant metrics. In the context of energy sharing, accurate metering data is crucial for transparent allocation and fair distribution of shared energy.



**VIRTUAL SHARING:** Virtual sharing allows participants in an energy-sharing system to exchange or allocate energy using the public grid without the physical transfer of electrons. It often involves a virtual accounting system to record and manage the shared energy transactions, providing flexibility and efficiency. This process is simplified when participants are based within a multi-apartment building, or if they are operating under the same sub-station.



**ORGANIZER:** The organizer is a central entity or coordinator responsible for initiating and managing the energy-sharing arrangement. This role may involve establishing the infrastructure, defining rules, and overseeing the fair and efficient functioning of the energy-sharing community.



**SERVICE PROVIDER:** A service provider in energy sharing offers specific services or functionalities that facilitate the smooth operation of the energy-sharing system. This may for instance include metering, billing, or technical support to ensure participants can effectively engage in the energy-sharing arrangement.



**RESIDUAL SUPPLIER:** The residual supplier is a fallback provider of energy services, stepping in to cover any imbalances or shortages in the energy-sharing system. This entity ensures the reliability and stability of the energy supply in cases where the agreed-upon sharing arrangements face challenges or disruptions.



**BALANCE RESPONSIBLE PARTY (BRP):** The Balance Responsible Party is a participant in the energy market responsible for ensuring that the energy system is in balance.<sup>4</sup> This involves managing fluctuations to maintain stability and compliance with regulatory requirements. Energy sharing within a period no longer than the imbalance settlement period does not cause any imbalances. Balancing responsibility for surplus production or demand is usually the responsibility of the residual supplier. However, the community or another third party may also act as the BRP.

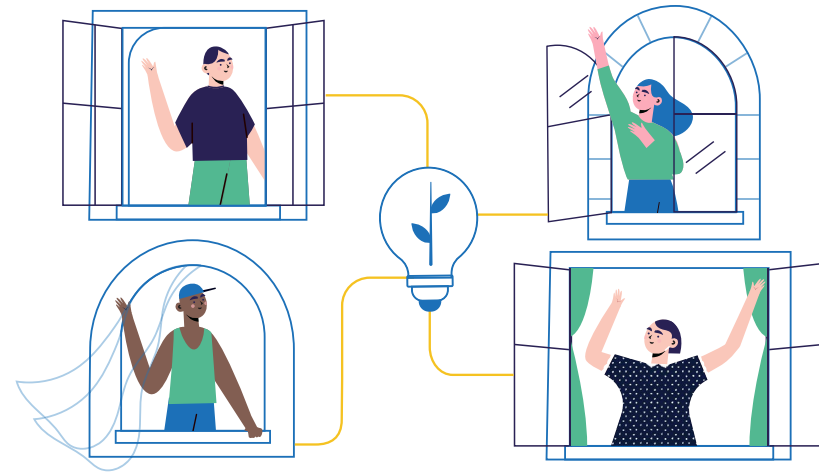


## 3. Business models for energy sharing

**For energy communities, energy sharing allows citizens, businesses and local authorities to organise themselves according to their own rules, in particular when it comes to pricing. There are many ways to organize energy sharing. However, there are two basic models – one physical and the other virtual.**

### 1 VIRTUAL SHARING OVER THE GRID:

This is by far the predominant form of energy sharing. Energy communities, which own and operate generation assets, do not only share the profits, but also share the energy produced among their members. This type of sharing may be – but not necessarily – organized through a common supplier, who takes care of the matching between production and consumption and supplies additional energy if needed.



### 2 SHARING OF LOCAL PRODUCTION THROUGH COMMUNITY GRIDS:

Energy can also be physically shared through a community grid. However, energy sharing in this type of context is likely to be much more situation-specific. In particular, this type of energy sharing may be interesting for energy grids on islands without connection to the mainland, or in other remote locations where it is suitable to have a community-owned grid. Communities may also find it useful to develop a microgrid, which can function in an islanded space. This type of energy sharing is not the primary focus of this guidance document, as most energy sharing is likely to use the public grid.

The below section explains the different potential ways in which economic value can be created through energy sharing. It then illustrates a number of operational models for developing energy sharing activities in the context of energy communities. This overview is not exhaustive nor does this guide aim to recommend any specific model, it merely aims to provide inspiration for energy communities.

## 3.1 Getting to a sustainable business model

From an economic standpoint, it makes sense to invest in energy sharing through an energy community if the cost of the energy you self-consume and sell (e.g. installation costs & feed-in tariff for instance, in connection with how much your installation produces) is less than working with a traditional supplier or opting for individual self-consumption. Below are a few elements to consider in this regard.

## Business models for energy sharing

### THE POTENTIAL SAVINGS ON THE ENERGY BILL

The first component of potential value is the energy savings realised on the energy bill from sharing energy. Energy bills are typically split between three components:

**Energy:** Sourcing/wholesale energy costs for either consuming or feeding in energy, including balancing and administration fees. The production that is shared within a certain netting period (e.g. 15 minutes to 1 hour, depending on the Member State) will be consumed by the members at a price that is fixed by the members themselves. The savings that can be realised will depend on how much lower – or higher – the shared energy is compared to the wholesale market price.

**Taxes:** VAT, energy taxes and possibly levies for sustainable energy support.

**Network-related costs:** Grid charges including costs for grid losses – this includes costs related to use of both the transmission and distribution network. According to CEER, tariff structures vary widely across Europe in how costs are allocated to different users of the distribution networks. Distribution costs are generally allocated to distribution network users (e.g. customers, distributed generation, storage and EVs) using a combination of a fixed fee depending on type of customer, level of energy consumption, maximum capacity utilised or contractually committed capacity. This can also include time of use (daily, or seasonal).<sup>5</sup>

The amount of savings from participating in energy sharing depends on:

- How expensive is retail energy in comparison with levelized costs of self-produced energy
- Applicable charges, taxes and levies
- How the national regulation defines “self-consumed” electricity, and especially the period (e.g. hourly) in which produced energy can be deducted from consumed energy
- The reward for energy injected into the grid in comparison (e.g., Feed-in-tariffs, buy back contracts) with the incentives for shared electricity



## Business models for energy sharing

- Type and installed capacity of technologies used (wind, storage, power to-x), use of flexible assets and the pool and diversity of consumption profiles (consumers and prosumers; households, businesses, public institutions etc.)
- Transaction and operational costs (including subscription costs, dynamic energy price and support certificate fees) incurred and recovered by retail supplier and system operator. Ecopower, a community-owned supplier provides an overview of how they calculate these costs on their website.

The below table and paragraph provide some insights into potential cost savings from energy sharing when all charges, taxes and levies apply:

Year of the data used	2020		2022	
Degree of self-consumption	Collective		Collective	
Generation mix	100% solar	50% solar / 50% wind	100% solar	50% solar / 50% wind
Self-consumption (%)	39.69	66.12	39.44	65.96
Benefit of self-consumption (€)	272.53	442.04	586.00	930.24
Benefit of surplus energy sold (€)	61.57	33.69	292.30	148.88
<b>Total benefits (€)</b>	<b>334.10</b>	<b>475.72</b>	<b>878.30</b>	<b>1 079.12</b>
Investment cost (€)	2 234.92	2 447.29	2 234.92	2 488.72
Payback period for constant market conditions (years)	7.22	5.59	2.57	2.33



**Table 1:** Average benefits of collective self-consumption across the countries studied (Belgium, Denmark, France, Greece, Italy, Portugal, and Romania) for market conditions in 2020 and 2022 and for a 100% solar or 50% solar / 50% wind generation mix. Source: Ovaere, M. (2023; full reference in endnote).<sup>6</sup>







## Business models for energy sharing



A study looking at 39 countries found that in a community consisting solely of households with solar panels (PVs) and no regulated charges, energy sharing can result in approximately 62.32% savings on monthly electricity bills over a year for a household. However, when factoring in all regulated charges, the annual savings decrease to 18.65% of the monthly electricity bill.<sup>7</sup> The study further finds that the introduction of flexible assets or the inclusion of consumers alongside prosumers in the community can significantly enhance the benefits of energy sharing. If the shared energy is coming from one central installation, community cost savings are approximately five times greater compared to the abovementioned scenario, equivalent to nearly three monthly electricity bills, owing to a more extensive sharing of energy. Such communities, the study stipulates, are feasible in multi-apartment buildings or suburban/rural areas, where collectively owned generation units can be conveniently located near community members. It's important to note that, in this arrangement, while community members may derive greater benefits from energy sharing compared to prosumers who share energy, their overall savings are lower (due to the absence of local self-consumption). Additionally, the savings of community members are more contingent on the charges, taxes, fees, and levies applied to the shared energy.<sup>8</sup> More information on how shared energy is valued in different Member States is available in the Annex to this Guidance (Table 1).

### "SMART" ENERGY SHARING (INCLUDING FLEXIBILITY)

Energy communities may use production and demand-side assets such as electric vehicles batteries, or heating devices (domestic hot water, heat pumps or hybrid heating) to increase, shift or reduce their electricity self-consumption.

This requires adequate ICT equipment, smart and flexible devices, the possibility to use dynamic energy sharing keys, as well as exposure to time-differentiated price signals (e.g., time of use distribution network tariffs, or dynamic price contracts) and/or accessible flexibility markets (i.e. to know when to provide which flexibility service).<sup>9</sup> The flexibility services may be provided directly by an energy community or through cooperation with an aggregator.

Smart energy sharing could in this way provide the basis for:

- 1| providing flexibility services to their balancing responsible party or system operator in exchange for a financial compensation or reward (e.g., by matching consumption with local production in both space and time using ICT solutions during peak congestion, or reducing consumption and injecting local production into the wider grid for balancing purposes); or
- 2| optimising the timing and levels of self-consumption to increase economic benefits of energy sharing (e.g., shift self-consumption to peak periods where electricity prices are high).<sup>10</sup>

### SELLING EXCESS PRODUCTION

Shared production that counts towards the energy bill is usually quite limited, because the production must be consumed within a relatively short timeframe from when it is being produced. As such, an energy sharing initiative will likely only be able to use 30-40 percent of the production for sharing purposes; the rest will be exported through the grid to other consumers, unless it can be stored. Most Member States allow for remuneration of excess production, although it is not always allowed. Some Member States set up a Feed-in-tariff

Business models for energy sharing

system where production is automatically taken on by the system operator and some Member States place a cap on how much excess production may be remunerated. In some cases, suppliers are allowed to set the price for compensating injection of excess production, and in other energy communities are required to negotiate with a supplier. The design of subsidies for selling production could create trade-offs between maximising value from selling production, optimising self-consumption, and providing flexibility. This is something to consider when designing a particular initiative.

### 3.2 Different operating models for community energy sharing

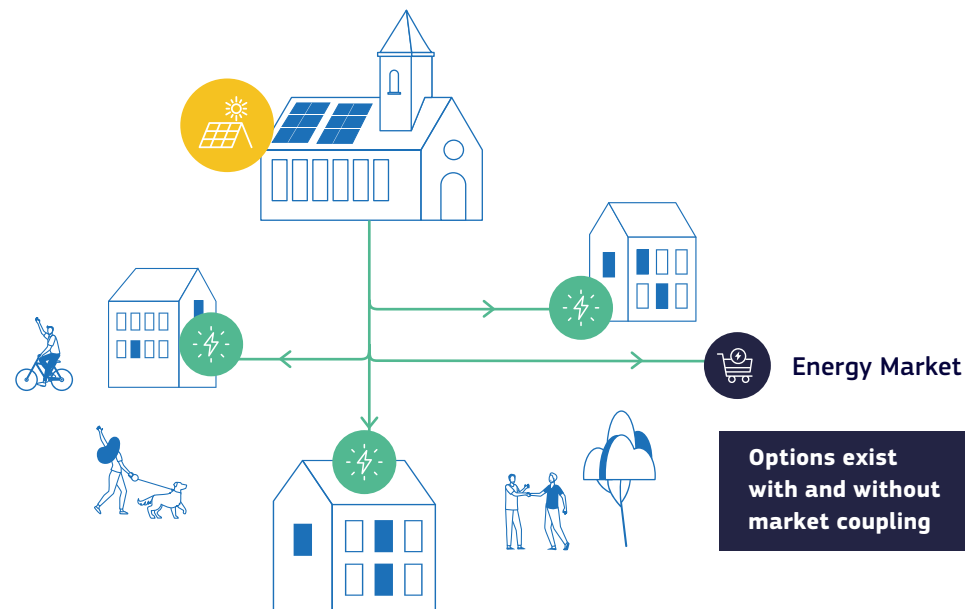
The below overview outlines different potential possibilities for setting up an energy sharing initiative reflecting the European context and based on experience of energy communities<sup>11</sup>. Whether or not each operating model is possible within your country depends on your national legislation. The operating models can also be combined (for example, an energy community that operates a wind turbine and has individual members that operate rooftop solar PV installations).

**MODEL 1**

**COMMUNITY-OWNED CENTRALISED PRODUCTION OF RENEWABLE ENERGY GRIDS:**

This is the typical model for energy sharing: the renewable energy is generated at a production facility (e.g. building) owned by an energy community. Each member uses the ‘shared’ energy behind individual meters (one per connection).

The energy not shared is sold on the wholesale market by a supplier, which can be either the energy community or an external supplier. All members of the installation could have a contract with that same supplier, or maintain their own individual supplier to meet residual consumption needs. When the energy community sells the excess electricity on the wholesale market, the energy community is the balancing responsible party; it needs to ensure that the installation does not create an imbalance in the system.





© Enercoop Midi-Pyrénées



## EXAMPLE

### Community energy sharing by Enercoop in Pousse-Pisse, Midi-Pyrénées, France

Enercoop Midi-Pyrénées currently operates two collective self-consumption (CSC) projects: a 36 kWp PV rooftop installation, as well as France's first ground-mounted collective self-consumption solar farm, located in the town Pousse-Pisse in the Tarn region, with a capacity of 250 kWp. Another CSC project through a 300 kWp ground-mounted solar farm is scheduled to be commissioned in February 2024.

The PV rooftop project built in 2018 was set up as a pilot project with two participants. The solar farm Pousse-Pisse, commissioned in May 2022, has eight participants. The electricity produced by the solar farm is directly sold by the cooperative to consumers located within a 2 km radius from the facility. The farm's annual production is estimated at 325 kWh, which is equivalent to the consumption of approximately 250 people or 110 households, excluding heating and domestic hot water.

The project required €240 000 worth of investment, and will be operational for 30 years. All of the cooperative's production means are self-financed using their own funds and later refinanced at commissioning through a standard bank loan at 80% debt. The cooperative's own funds come from

continuous fundraising efforts from citizens, through social shares and participative bonds, both of which are Finansol-certified for ethical savings.

The project was made possible through collaboration with local actors, including authorities, members, and residents of the Carlus and Le Séquestre communes. The land is owned by the Municipality of Le Séquestre.

In the context of collective self-consumption operations, Enercoop Midi-Pyrénées provides a management and operation platform called Elocoop. Enercoop Midi-Pyrénées does not compensate network fees, and normal fees and taxes apply. The community does not rely on public financial support mechanisms, and there is no compensation for the sale of production.

Enercoop also focusses on alleviating energy poverty through *Énergie Solidaire*, a project that collects micro-donations on members' energy bills to support organisations working with vulnerable and energy poor households. Today, Enercoop's clients can decide to make a donation of €1-2ct for each kWh they consume. This translates into €5-6 per year for most members. The association currently has 4 000 donors, which amounts to roughly €160 000 per year.

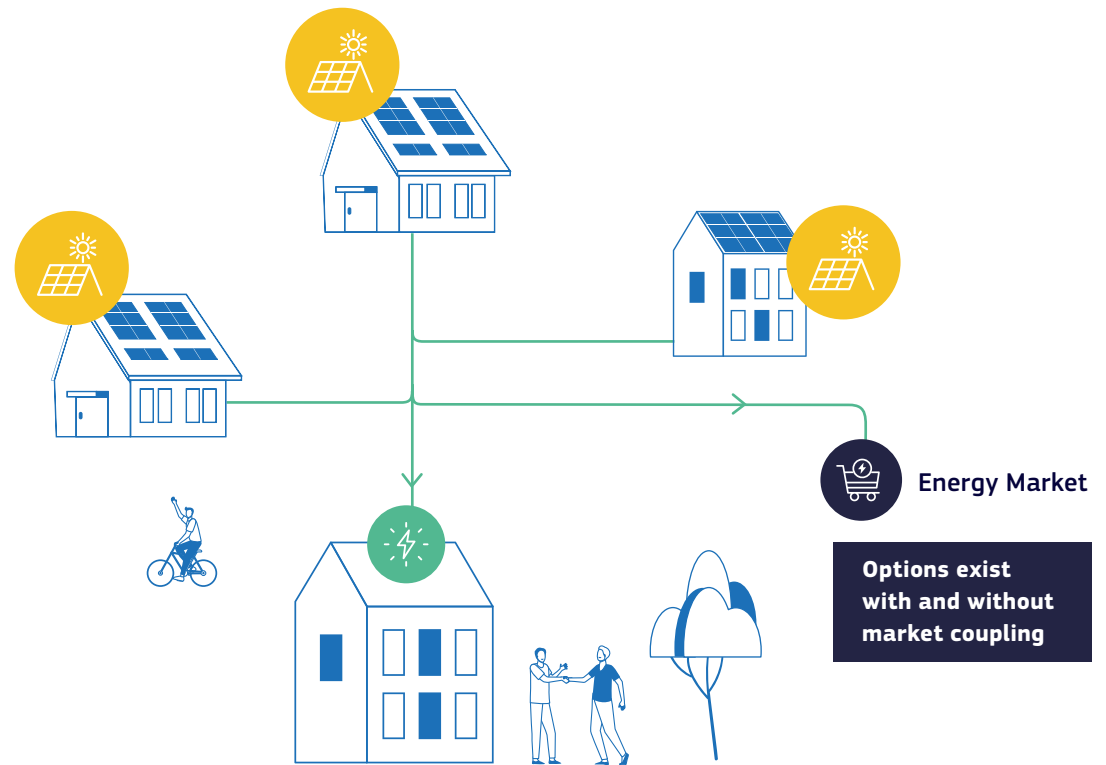


**MODEL 2**

**COMMUNITY-OWNED DISTRIBUTED PRODUCTION OF RENEWABLE ENERGY**

In this scenario, energy is generated by community-owned facilities placed on buildings (potentially from some individual members of the energy community) and is shared directly among the community, without going through a supplier. The grid operator helps participants keep track of how much electricity each of them contributes and uses via a smart meter, calculating allocation shares from different metering points. Sharing of the electricity is based on pre-defined shares and prices.

The energy not shared can be sold on the wholesale market by the residual suppliers of the members where the generation facilities are located. The energy community can act as a supplier to its members, or works through an external supplier. When selling excess electricity on the wholesale market, the energy community is the balancing responsible party; it needs to ensure that the installation does not create an imbalance in the system.





EXAMPLE

Community energy sharing facilitation  
by Klimaan, Mechelen, Belgium

In Mechelen's social housing district 'Otterbeek', 70 houses were equipped with a total of 729 solar panels with a production capacity of 288 kWp. Through the establishment of an energy community, citizen energy cooperative Klimaan, together with Woonpunt Mechelen, the city of Mechelen and grid operator Fluvius, work closely together to ensure a positive outcome to reduce the risk of energy poverty, while maximizing the solar panel coverage on the rooftops of the social buildings.

Energy cooperative Klimaan raised the €250 000 of investment required for the project, so that the tenants did not have to invest themselves. Klimaan remains responsible for the functioning of the installation and the users only contribute in proportion to their effective consumption, so the social housing company does not have to bear the market risk of electricity prices. Fluvius collects all production and consumption data on a platform and delivers it to Klimaan, which further elaborates it with the amounts to be paid per tenant. The social housing company charges a monthly advance on the rental charges, and a final account is made annually. The annual production is estimated at 262 000 kWh per year, saving 55 tonnes of CO<sub>2</sub> every year.

The kWh charged to the participants living in social housing is determined by calculating the up-front investment, maintenance and follow-up administrative costs. To keep costs low, the payback period for the loan is set at 20 years. At the end of this period, the installation can be handed over to the social housing company. Klimaan charges the social housing company on an annual basis. The Social housing company passes on to individual renters through their rent charges. The contribution of everyone is based on the kWh everyone has used coming from the solar installation. Compared

to the social tariff in Belgium, which is €21 ct/kWh, social renters contribute around €17.5 ct/kWh less to the use of the solar panels.

Social tenants and energy community members contribute to the use and maintenance of the solar panel installation so that it costs them less than the social electricity tariff. In practice, operating and maintenance costs are integrated together with the investment bill of the solar installation and carried out by Klimaan. The energy community offers the overall package at cost price, which allows the low price for the access to solar energy. The challenge is to be able to offer this to all social tenants; this is often not yet possible due to administration fees charged by energy suppliers. Digitizing the administrative management for all actors involved (Fluvius, energy supplier, the energy community) without too high costs to obtain a management software also remains a challenge. Klimaan plans to expand the project by 127 residential units in 2024.



© VVSG / Klimaan



© VVSG / Klimaan

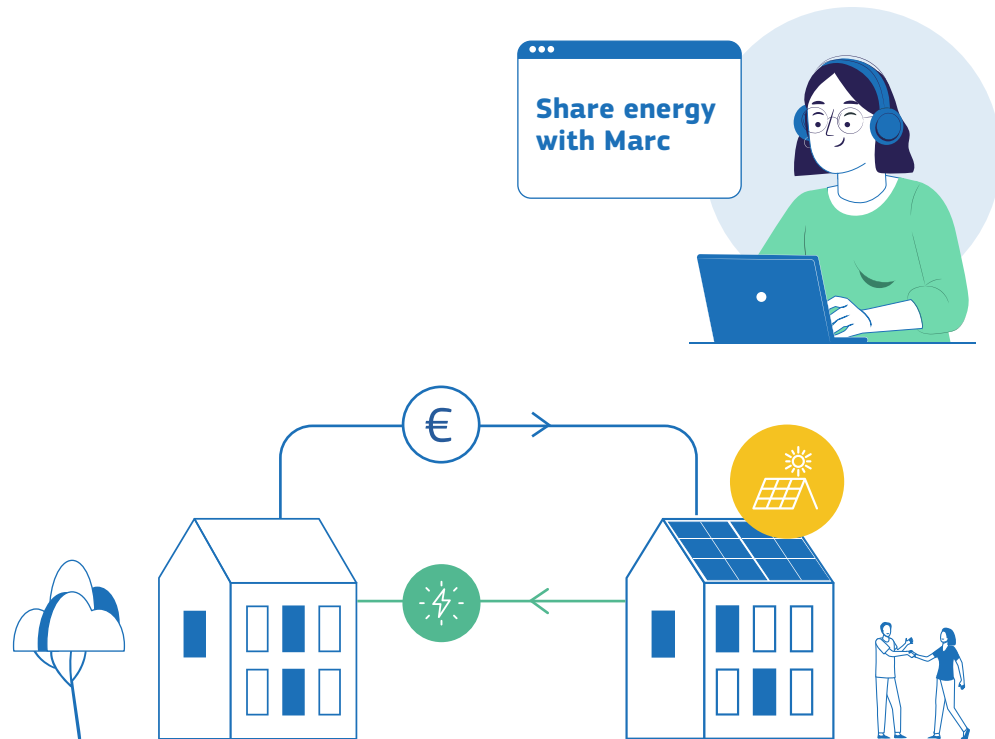


**MODEL 3**

**INDIVIDUALLY OWNED DISTRIBUTED PRODUCTION OF RENEWABLE ENERGY BY COMMUNITY MEMBERS**

In this scenario, energy is generated by facilities owned by individual members of the energy community and is shared directly with other members of the energy community who do not have their own production installations. This form of energy sharing is based on purchase agreements. It can involve longer-term fixed price purchase agreements, or the use of a digital “peer-to-peer trading” platform or system that connect producers and consumers within a short-term market place. Such a platform or system helps energy communities to understand how much energy is available, who needs it, and at what price. Some of these platforms or systems use smart contracts and blockchain technology for transparency and security. Smart contracts automatically execute and enforce the terms of the energy trade once conditions are met. The grid operator helps participants keep track of how much electricity each of them contributes and uses via a smart meter, calculating allocation shares from different metering points.

The energy not shared is sold on the wholesale market by the residual suppliers of the members that self-generate electricity, which can be the energy community. When selling excess electricity on the wholesale market, the energy community is the balancing responsible party; it needs to ensure that the installation does not create an imbalance in the system.





EXAMPLE

**Community facilitated energy sharing between peers by OurPower in the Vienna, Austria**

OurPower functions as a facilitator to help connect renewable energy producers and small energy consumers. It organises workshops and discussions with both producers and consumers in order to set fair prices. They try to fix the prices for half a year at a time.

OurPower has currently over 1 100 customers and 300 producers, including many farmers. The composition of the energy bought is 40% solar, 30% hydro and 30% wind. OurPower buys and provides 4.98 GWh of renewable energy.

OurPower has 818 members with a joint investment of €840 000. Consumers do not have to be a member to be able to become a customer (only members have access to preferential rates offered by the community), while producers do have to be members. Membership is a €100 one off investment and is open to anyone.

OurPower works with aWattar who is a green energy supplier that provides balancing services. They also work with business and start-ups for innovation and new projects with a focus on making the energy market more transparent and renewable.

OurPower can potentially offer lower income household customers a lower than market energy prices. In the future, it plans to offer two prices for consumers; one for family and friends who will pay a lower rate and another standard rate for all other consumers. Lower income households could be eligible to join the family and friends rate.



© OurPower



© OurPower

### 3.3 Addressing energy poverty through energy sharing

Energy communities can deploy a variety of approaches to include vulnerable and energy poor households in energy sharing. In particular, they have the potential to facilitate:



#### ACCESS

Energy communities are testing models of reaching out to vulnerable and energy poor households (both renters and homeowners) to provide solar panels as a service. Beneficiaries may either simply have access to energy without having to invest, either through third party ownership and operation by the community (See in this regard the example of Klimaan under operating model 2) or direct access to renewable energy of producer members of the community (See in this regard the example of OurPower under operating model 3).



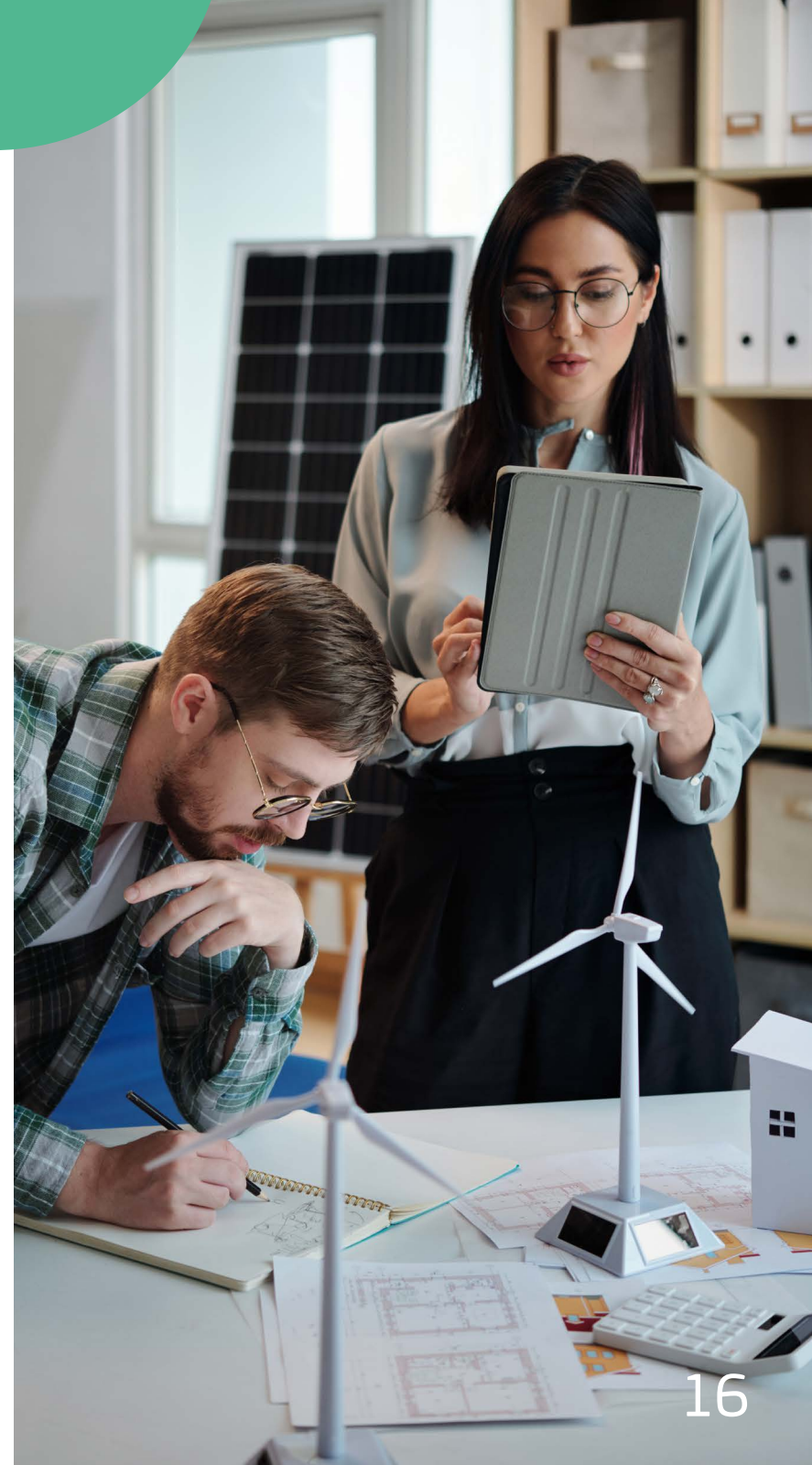
#### SOLIDARITY

Energy sharing can be arranged so that mechanisms that promote solidarity between the members of the community are included in the initiative (e.g. ways to help members pay their bill over time, or community funds that go towards energy efficiency or renovations works in dwellings of vulnerable members). These mechanisms can be supported through micro-donations from members and others (e.g. bills or production), as well as prioritisation of economic returns towards the solidarity mechanism (See in this regard the example of Enercoop under operating model 1).



#### MEMBERSHIP

Some energy communities are testing ways to integrate co-ownership into the concept so that vulnerable and energy poor households not only benefit from renewable energy but also have the chance to take ownership. This could be done through financing purchase of shares by another entity, pre-financing arrangements, or lowering the price of a share and/or membership fee.







## EXAMPLE

**Facilitating membership for vulnerable households by Telheiras in Lisbon, Portugal**

The Telheiras Renewable Energy Community is a community energy project promoted by Local Partnership of Telheiras and the Lumiar Civil Parish, but entirely run by volunteers from the community.

The community's pilot project is currently in the planning phase of developing solar PV installation of 7-8 kWp on the roof of a community center managed by the Lumiar Civil Parish for the purpose of collective self-consumption. The project gathers 17 members, of which 13 regular households, 3 vulnerable households, and the Lumiar Civil Parish. The total investment for the project is around €10 000.

The collaboration with the Lumiar Civil Parish is key to the success of the community's pilot project. The Lumiar Civil Parish was convinced by the numbers: had they installed solar panels only for their own building, they would have paid €2 500 for two solar panels. With the community energy model, the Parish can install not only the solar panels it needs for its own consumption, but for less than the price of an individual installation, it can support two vulnerable families and enable the participation of 14 more families. Both the Parish's president and staff saw the value in the energy community approach, including for reduced energy bills and increased participation in the local community, and decided to get on board. The energy community further provides lower membership fees for vulnerable households (who become full members of the energy community), to make it easier for them to join the community. The difference is covered by other members.



© Viver Telheiras

Elements to consider if your community is thinking of engaging in energy sharing

## 4. Elements to consider if your community is thinking of engaging in energy sharing

This section covers topics that you are likely to encounter when discussing how to set up your energy sharing initiative.

### 4.1 Establishing the energy community / setting up a legal entity

A first element to consider is whether you want or need to set up an energy community to engage in energy sharing. Some Member States do not require the establishment of a legal entity to share energy. Whether or not it is more beneficial for your group to set up an energy community depends on your national context and your group's objectives.



### Elements to consider if your community is thinking of engaging in energy sharing

#### WHY YOU MAY WANT TO SET UP AN ENERGY COMMUNITY:

- 1| Registering as an energy community is often necessary in order to benefit from special support, such as feed-in premiums, or finance support.
- 2| Energy communities can engage in activities other than energy sharing; if your group's vision goes beyond energy sharing, the legal form of an energy community may be a useful way forward for you.
- 3| You want to set up an open and democratic participation and governance structure in accordance with the [EU definitions](#), with an objective to generate community benefits over profits.
- 4| You want to take ownership of the activity.

Many Member States have an online portal, often through the energy regulator or another executive agency, that allows energy communities to register as an energy community. Most Member States separate the process of registering as an energy community from the process of setting up or organising the activity of energy sharing. A few Member States, including, Croatia, Slovenia, Slovakia and Lithuania, treat the establishment of an energy community as a regulated activity, which must receive a license similar to production or the energy sharing activity itself. In some Member States there may be financial assistance to help set up a legal entity (for example in Austria). More information on different Member States is available in the Annex to this Guidance (Table 2).

#### YOU MAY PREFER TO ENGAGE IN ENERGY SHARING WITHOUT SETTING UP AN ENERGY COMMUNITY IF:

- 1| Your initiative is small (e.g. few members) and does not plan to grow.
- 2| The effort of setting up a legal entity would not justify the costs (time, energy, resources).
- 3| Your initiative does not meet the participation, governance and output requirements imposed by national definition of energy communities (e.g., is primarily to make profit, or involves third party control).

## 4.2 Economic considerations

The economic viability of any energy sharing project will depend on your ability to monetise renewable energy production and other potential demand-side assets used for the activity (e.g. storage, EV charging stations, smart demand appliances, etc.). Your energy community needs to calculate the potential economic benefit of energy sharing, and you will need to develop a business case. Below are some further considerations to help your thinking process in this regard.

#### MODELLING TO SUPPORT THE DEVELOPMENT OF A BUSINESS CASE

Depending on the Member State or even the region your community is based in, there will be different options for energy sharing regarding the size of installation, geographical scope, number of members, consumer profiles and more. To develop your business case, it is helpful to carry out a modelling exercise to understand the economic benefits of different approaches for your different members (e.g. small versus medium sized households, commercial consumers with higher demands, etc.), and identify potential trade-offs between other participating members.

Such models can also factor in aspects such as the amount of upfront investment needed, which can help identify additional financing needs, as well as the price to be paid or amount to be invested by the participants for the shared energy. It can also help understand the potential savings on energy bills of the members (savings per kWh / yearly savings), the payback period (if finance is required), and even the impact of the project on the grid.



**The business model will be determined based on:**

- How the national regulation defines “self-consumed” electricity, and especially the period (e.g. hourly) in which produced energy can be deducted from consumed energy.
- The reward for energy injected into the grid in comparison (e.g., Feed-in-Tariffs and buy back contracts) with the incentives for shared electricity.

**Considerations whether to make flexibility services provision a goal of an energy sharing initiative will depend on:**

- The price of retail energy in comparison with levelized costs of self-produced energy.
- How the national regulation defines “self-consumed” electricity, and especially the period (e.g. hourly) in which produced energy can be deducted from consumed energy.
- The reward for energy injected into the grid VS the incentives for “self-consumed” electricity.

Modelling can be obtained through a public entity, or a service provider. Italy’s energy system operator GSE for instance has an online tool and a guide to help consumers perform their own simulations. It is also possible to receive such

services from another energy community, DSO, or commercial company.

**FINANCING STRATEGY**

Energy communities finance projects in many different ways. Most often it includes equity financing from members of the community itself (e.g. through issuing of shares). Many newly starting energy community projects will also likely need to find additional financing, either through crowd-funding, public support, or private sources such as bank loans. Governments have increasingly set up dedicated public funding mechanisms to help energy communities overcome hurdles they experience in financing the first stages of the project. This can help to de-risk the preplanning stage, for instance to undertake feasibility studies and obtain legal and other technical expertise. At the moment, an increasing number of Member States are funding pilot projects to test the energy communities and energy sharing concepts at the national level.<sup>12</sup> Public funds can also be used to provide guarantees or low/zero-interest loans to energy communities for project development. Such financial assistance can be developed both at the local and national level.

**COMMUNICATING A SUSTAINABLE BUSINESS MODEL**





Once you have undertaken the modelling, you know how much investment capital you will have available and the potential remuneration you will receive for your project, you will have a clearer understanding of the payback

Elements to consider if your community is thinking of engaging in energy sharing




period and potential further financing needs. This information needs to be communicated clearly and transparently with your existing and potential members, so that they have a clear understanding of potential risks and benefits. This information is also necessary for communicating with potential private lenders. Energy sharing – particularly in combination with energy communities – is still a new topic for private lenders, which could make them reluctant to provide finance for such investments. Whether or not a commercial lender decides to invest depends on the project’s ability to pay back the investment, which largely depends on future earnings from this project.<sup>13</sup>

### 4.3 Allocation of roles in your country

There are a number of roles, or functions, that different energy market actors play in enabling energy sharing:

-  **Registration and connection:** The registration process allowing for the validation of the initiative and the connection of your production site to the grid. In some Member States, this process may be the same as the one establishing an energy community.
-  **Information:** Provision of information to raise awareness around energy sharing and practical technical elements needed to set up initiatives.
-  **Processing of metering data:** Data collection from the installations and meters of the participants to ensure that sharing activities can be validated or affirmed. This duty often includes sharing data with other market actors such as the residual supplier, the community, and the members, for billing and other purposes.
-  **Allocation of shared energy:** The administrative task of assigning production that has been shared to the meters/bills of the participants.



-  **Billing:** Issuing the final energy bill to members/ customers and ensuring that self-consumed energy from the community is accurately reflected in the bill.
-  **Residual supply:** The responsibility for meeting participating consumers’ needs that are not met through energy sharing.
-  **Balancing responsibility:** The responsibility to ensure that the production installation(s) do not result in an imbalance in the energy system.

## ENERGY COMMUNITIES REPOSITORY

### Elements to consider if your community is thinking of engaging in energy sharing

The following actors are likely to be implicated in getting a successful energy sharing initiative of the ground, including:



**Energy community:** Depending on the role that the energy community itself (REC or CEC) plays in energy sharing, it may have specific duties and responsibilities allocated to it. In some cases, these duties and responsibilities may be allocated to other market actors.



**Distribution System Operator (DSO):** The DSO is prescribed specific duties and responsibilities under the REDII and IEMD to cooperate with energy communities and facilitate energy sharing. Depending on the Member State, the DSO may have any of the following roles and responsibilities: Providing information for initiatives, updating IT infrastructure to accommodate energy sharing, rollout of smart meters, registering and connecting initiatives, and allocating shared energy.



**Suppliers:** Depending on the scheme, existing or alternative suppliers may be ascribed with specific duties. If participants in an energy sharing initiative maintain a relationship with a supplier that provides them with residual energy needs, that supplier will almost always be responsible for issuing the energy bill. Depending on the Member State, the supplier may also be responsible for calculating the metering data towards allocating shared energy towards the energy bill.



**Sharing facilitator:** In some Member States, national legislation allows or prescribes the appointment of an organiser, representative, or manager to act on the energy community's behalf. It centralises communication with the system operator and the regulator, while serving as a legal representative, managing sharing coefficients, undertaking accounting functions. This could be undertaken by a member, the community itself, or another third party (including another energy community);



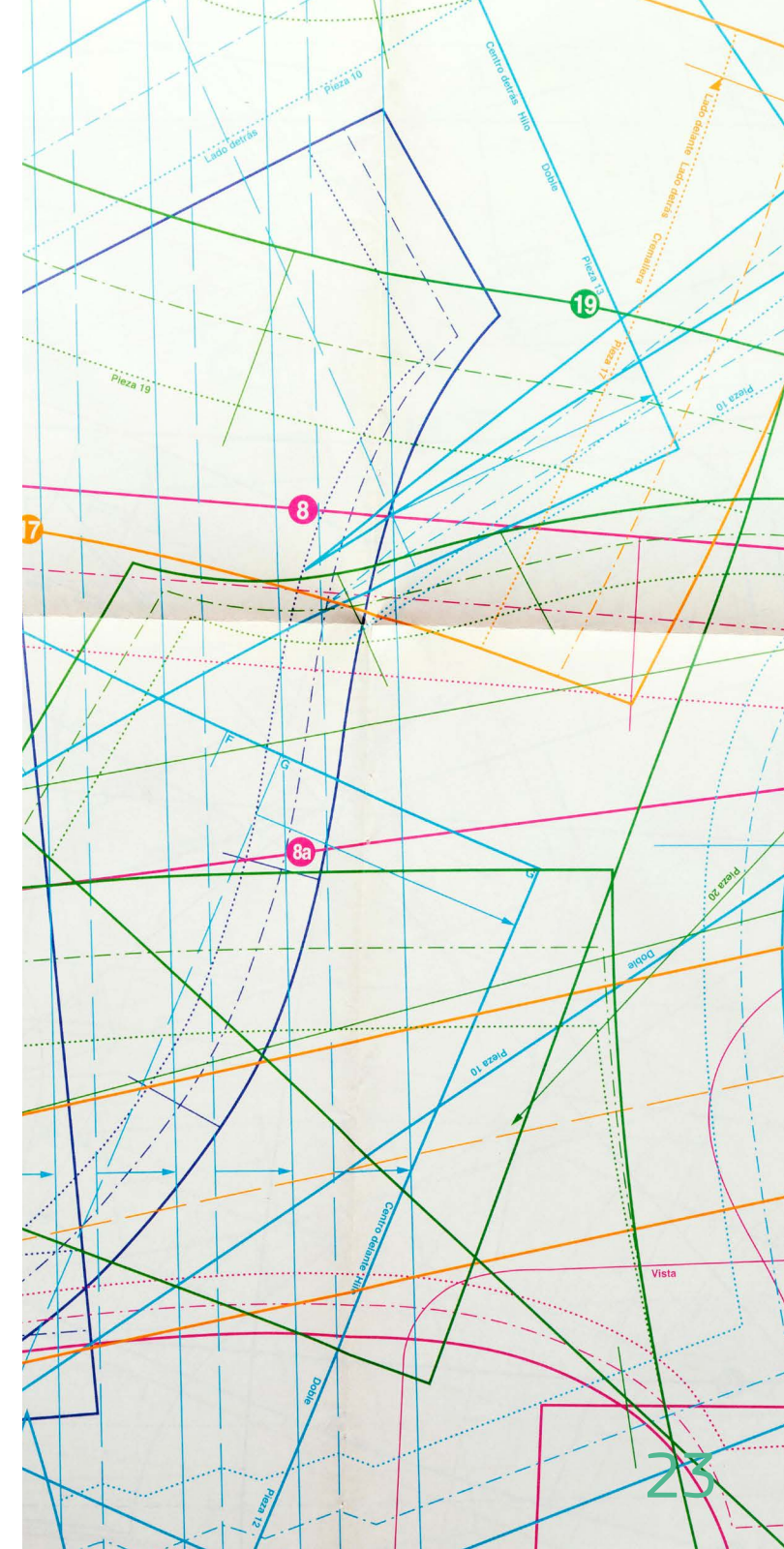
**Regulatory authority or other national body/authority:** The regulatory authority, or another governmental authority, may be prescribed duties around registration and oversight of energy communities, deciding on fairness of remuneration to the DSO for services provided to the community, as well as other technical rules and tariff structures that may apply to the energy community's business model.



## 4.4 Parameters allowed in your country

In principle, energy sharing initiatives can be set up in many different ways, depending on regulation in your country. As energy sharing is a relatively new concept, many Member States have placed limitations around certain parameters of the activity. These limitations may vary in size and nature depending on the Member State, and they may even be further relaxed over time. The Repository has observed boundaries on the below parameters. To help you define your project, it is useful to check which limits apply in your country. More information on different Member States and their different parameters is available in the Annex to this Guidance (Table 3).

- Type or size of the installations that may be used for renewable energy production:** Legislation may explicitly limit energy sharing to certain production technologies, such as solar PV. There may also be limits on the installed capacity (MW) that your production facility can have, which will inherently impact the types of production you can use. For example, in Greece and France, installations for energy sharing are limited to 3 MW, while in Italy the limit is 200kW (although this is likely to be increased to 1 MW with pending legislative changes).
- Geographical proximity within which final consumers are allowed to participate in an energy sharing initiative:** This is perhaps the biggest factor that will impact how your initiative develops. Most Member States prescribe the perimeter within which members or users of the installation need to be situated to participate in the energy sharing project. This figure usually corresponds to the topography of the electricity network (e.g. low or medium-voltage station), or to radius expressed in kilometres (e.g. between 1 km and 50 km). This factor will not only determine who is eligible to participate, but also the technologies that can feasibly be used to produce renewable energy. For instance, a parameter that is set to 500 m will usually exclude the use of wind, micro-hydro, or even biomass. In some cases, proximity will determine applicable network charges for energy sharing, such as in Austria and in the Brussels-Capital Region.



## Elements to consider if your community is thinking of engaging in energy sharing

- o **The deduction/matching period for sharing energy among the members of the community:** The deduction or matching period in your country, which will vary between 15 minutes (Austria, Flanders Region of Belgium, Croatia, Finland, Luxembourg, Portugal) and 1 hour (Italy Spain), will directly impact the potential self-consumption rate, regardless of which technologies allowed, and how much savings participating consumers can expect to see through their energy bill.

## 4.5 A strategy for how to share energy amongst members

When setting up an energy sharing initiative, each community needs to adopt a special formula that determines how the shared production will count towards particular members' energy bills. This is called the sharing coefficient or sharing key.

Sharing coefficients are regulated at the national level. Some Member States only allow for one 'static' energy sharing coefficient to be used by all energy sharing initiatives, where every consumer receives a fixed pre-arranged share.<sup>14</sup> Some Member States let community choose their own dynamic sharing coefficient, whereby the actual demand at a given time (e.g. hourly, every 15 minutes, etc.) determines the share of production that each member receives. In other countries, the community needs to use a standardised key determined by the DSO. In case a community struggles to determine a coefficient, they can use

the standardised key provided by the DSO. Dynamic sharing coefficients are usually used to optimise the self-consumption rate from the production facility, ensuring that as much production is used by the community as possible, which also allows for maximizing savings to energy bills of the participants.<sup>15</sup> There is also a potential third 'hybrid' approach, mixing static and dynamic sharing approaches. Under this approach, each member could receive an allocation of shared energy based on a fixed parameter (i.e. static approach). Beyond this amount, electricity that is left unconsumed can be sold to other members before going to the grid.<sup>16</sup>

To understand your options, a necessary step for your energy sharing project is finding out which options for sharing coefficients are available in your country. More information on different Member States (particularly Austria, Croatia, Finland, France, Greece, Italy, Luxembourg, Portugal, Slovenia and Spain) is available in the Annex to this Guidance (Table 4).

## 4.6 Choice of technology

The production profiles of solar PV and wind vary throughout the day and the year, and both have an influence on the amount of energy that can be consumed around the same time as it is being produced. For PV systems, much of the consumption of traditional households takes place outside the hours of sunshine and peak production. Wind production is distributed much more evenly throughout the day and the year. According to an iöw for conditions in Germany, wind turbines can achieve much higher energy sharing shares per invested kilowatt through the ability to achieve higher full load hours than pure energy sharing through solar PV.<sup>17</sup> In particular, without shifting any consumption loads, combining solar PV with wind can raise self-consumption rates from 26 to 48 percent.<sup>18</sup> At the time of writing this guide, there were studies ongoing in the Netherlands on how to achieve even higher

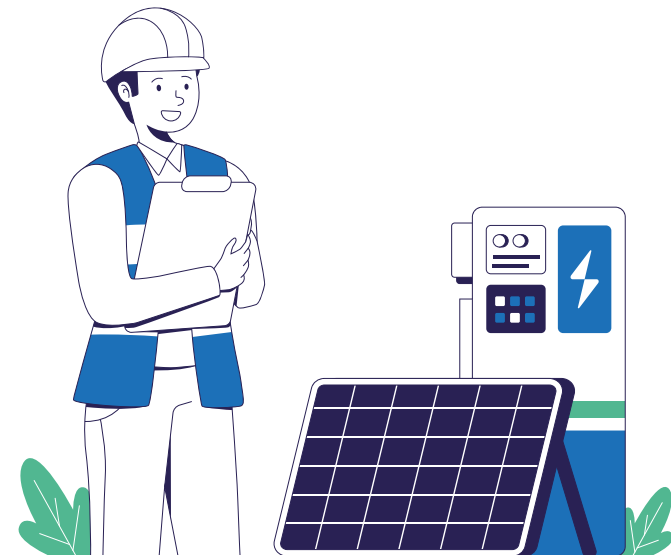


## 4.7 Requirement for a smart meter and other specific equipment

Currently, in most cases, having a smart meter installed is a prerequisite for measuring input from the production facilities and consumption by the members within an energy sharing project. In any case, a smart meter is necessary for an energy sharing initiative to be able to optimise self-consumption and provide flexibility to the system. Some Member States require grid operators to provide a smart meter upon request by users, and specify a timeline for the DSO to install the smart meter after a request has been submitted.

In addition, it may be necessary for your community to enter into an agreement with the system operator that provides them with permission to collect each consumer's data measured through the smart meters. The system operator stores this information and uses it to correctly allocate shares of production to each member based on the coefficient or distribution key. This data may also be shared with the community and the individual participants, as well as suppliers that provide residual energy needs that cannot be met through energy sharing. These transactions of data can raise issues of data privacy and ownership, which is a sensitive topic. Under a new Implementing Regulation,<sup>19</sup> permission is required to access consumption and metering data. In Austria, individual consumers are required to 'opt-in' after a smart meter has been installed. This helps participants to understand and actively consent who they will be providing data to, and for what purpose(s) it will be used.

To help users see how their energy sharing activities impact their bill, some Member States have put in place rules governing the sharing of information by the DSO once energy sharing initiatives are operational, including with other market actors, the energy community, and its



members. For example in Austria, the DSO is required to share measured quarter-hourly values of the generation facilities and the consumption sites with the suppliers and the energy community at the latest on the following day. A number of Member States also require information collected by the DSO to be available online (Austria, Brussels-Capital Region of Belgium, France).



## 4.8 Using a service provider

Taking on balancing responsibility allows an energy community to sell excess production more easily, and to provide more services. It does however come with increased administrative procedures.

In this context, an external service provider can help, inter alia, finance an installation for the community, manage billing or distribution of benefits, undertake balancing responsibility, operate and maintain production facilities and storage assets, sell excess production to the market, and provide other services to facilitate energy sharing. A list of services and corresponding investment costs, as well as national provisions on the use of an organising entity or service provider, is available in the Annex to this Guidance (Table 5).

Partnering up with a third-party service provider can be helpful in getting their first project off the ground, particularly for upstart energy communities, as it can reduce the administrative burden for instance when providing information or consent to the system operator. In some but not all EU Member States, energy communities can delegate responsibility to one of their members, to the energy community itself as a legal entity, or to a separate third party, to assume certain responsibilities and to act on the members' behalf.

An element to consider when using an external service provider is the extent to which value created in the energy community stays within the community. A service provider will charge a fee for whatever service it provides, which will inevitably reduce the remaining financial benefits that can be distributed among the members.

In principle, according to the EU definitions, energy communities should own their own generation facilities used for energy sharing. However, this requirement is implemented more loosely in some Member States. Where this is possible, the service provider may maintain ownership of the production that is not shared and is sold to the market. As such, it is very important to have a good and clear understanding of contractual arrangements offered by service providers. For instance, engaging with a third-party service provider may impact the effective control and/or autonomy (for RECs) by the community (e.g., when third party ownership leads to decisive influence of decision-making) and individual consumer rights (e.g., imposing terms and conditions that may limit the choice of individual consumers to choose their own supplier, use of data for other commercial purposes, etc).

Elements to consider if your community is thinking of engaging in energy sharing

## 4.9 Rules for registering an energy sharing initiative

Member States may specify the information an applicant has to provide to the network provider when registering the energy sharing initiative. Depending on the Member State, this information is usually available on the website of the National Regulatory Authority (NRA), another agency, or the DSO. This may include information about the energy sharing initiative, including the number and location of members and production installations, IT systems, sharing allocation key, agreement of representation, etc. Member States may further establish timelines within which the system operator must respond to applicants or requests for information. Some Member States (Croatia, Finland, Lithuania, Portugal and Slovakia), mix the process of registering as an energy community with obtaining a license to undertake energy sharing.

On the technical side, the energy community needs to conclude different agreements/contracts with the DSO, including on data management by the DSO, the operation and maintenance of the renewable energy installations, and the liability and insurance of the installations. The price of registering an energy sharing initiative can vary significantly between Member States. In some Member States, registration is free (e.g. Spain), while in other Member States the expense of registering an energy community is quite high. For instance, in Croatia, to become licensed as an energy community organiser, the applicant must pay €1 000. More information on different Member States is available in the Annex to this Guidance (Table 6).

## 4.10 Rules for obtaining a grid connection

Every energy sharing initiative needs permission from the responsible system operator to connect its production facilities or storage assets to the grid. Each system operator will have their own procedures for obtaining a grid connection, many of which can be accessed online, and which may or may not be connected to the process of registering an energy sharing initiative, such as in France. More information on different Member States is available in the Annex to this Guidance (Table 6).



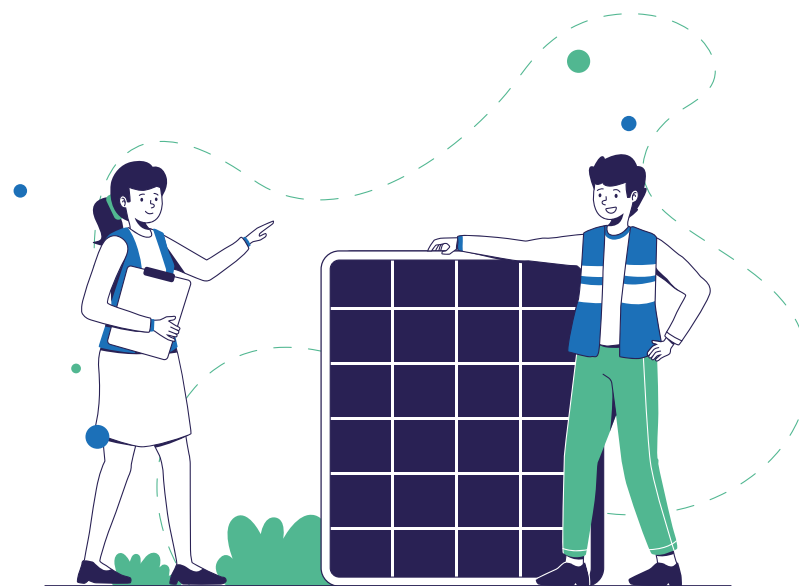
## Elements to consider if your community is thinking of engaging in energy sharing

Capacity for new grid connections is often limited, and obtaining a connection is inherently a competitive process. Depending on the Member State, the available connection capacity may be allocated on a first-come-first served basis, or through an auction model, where applicants bid based on a € per MWh/kWh threshold. Where an auction model is used, it may still be possible to obtain a grid connection outside the auction process, such as in Portugal. However, in this case, the developer (which could be your community) will have to pay for the entire cost of connecting to the grid. Some Member States allocate a certain amount of grid capacity for energy communities and self-consumption projects (Ireland, Greece), while others are currently considering this approach (Lithuania, Spain, Portugal). More information on different Member States is available in the Annex to this Guidance (Table 7).

It is possible that your grid connection request is denied if there is no available connection capacity. Otherwise, the system operator may require you as the applicant to pay for any necessary reinforcements to the network that could free up connection capacity. In some cases, smaller installations may only have to pay a portion of the reinforcement costs. In general, however, if an energy sharing initiative needs to pay for grid reinforcements, the projects may very well become economically unviable. If possible, it is helpful for energy communities to find ways of entering into flexibility connection contracts (e.g., shared capacity agreement) with the DSO to try and set up a win-win situation.

### 4.11 Consumer rights and protection considerations

When a member joins an energy community, they sign up to a specific set of rights and responsibilities vis-à-vis the energy community. In all cases, these rights and responsibilities, as well as benefits and risks, need to be communicated clearly and transparently by the energy community to all existing and potential members. The energy community will likely have both of the following types of relationships with its members:



1| The member/shareholder relationship

2| The customer relationship

Where an price per kWh is charged for shared electricity, you will need to consider in particular final customer rights (in particular regarding contracting, billing and switching) pertaining to the sales of energy in accordance with Chapter III of the IEMD, as well as data protection and privacy rights in accordance with Regulation (EU) 2016/679 (General Data Protection Regulation).<sup>20</sup> Depending on the legal form, rights and responsibilities are laid out in national company law (e.g. cooperatives, business associations).

Elements to consider if your community is thinking of engaging in energy sharing



**RESOURCE TIPS**

BEUC, the European Consumer Organisation, has developed a how-to guide that energy communities can use to ensure a high level of consumer protection when setting up and operating an energy sharing initiative

Most Member States have adopted some minimal requirements for which rights must be respected (Denmark, France, Hungary, Italy, Luxembourg, Portugal), and few contain more (Austria, Flanders and Brussels-Capital Regions, Croatia) detailed requirements regarding what information must be contained in internal agreements (e.g. articles of association, founding statutes or other constituting documents) between the energy communities and their members. These include provisions requiring energy communities to ensure their internal agreements with their members include clear and understandable language on voluntary and open participation, including the option to leave. Due to the dual investor-customer relationship, potential members should be able to understand how both relationships can be terminated. More information on different Member States is available in the Annex to this Guidance (Table 8).



Elements to consider if your community is thinking of engaging in energy sharing

## 4.12 Availability of information from public administration or system operators

To develop an energy sharing project, an energy community needs access to basic information on, for instance, how to scope and plan a project, obtain finance, get relevant permits and licenses.

This information may be available through an online one-stop-shop run by a public authority, the system operator's website, or another information source, such as an NGO. Several Member States, including Austria, the Brussels-Capital Region of Belgium, Italy, Portugal, and Spain that have created a dedicated OSS and/or have developed other information sources on energy sharing for energy communities. Depending on the Member State, there may be information available on potential areas where a project could be initiated (e.g., maps that show grid topography and areas where there is congestion or available connection capacity), procedures and timelines for registering projects and obtaining a grid connection. Some Information sources include template agreements and other documents that need to be submitted along with an application to register a project or obtain a grid connection agreement. More information on different Member States is available in the Annex to this Guidance (Table 9).

Some local DSOs are also taking it upon themselves to simplify the process of helping consumers learn about energy sharing and become aware of an initiative to join. Spanish DSO, L'ectra, has created a service company, Elecsum, and digital platform to make energy sharing easy for consumers.<sup>21</sup>





# References and useful resources

## References

<sup>1</sup> Institut für Ökologische Wirtschaftsforschung. Energy Sharing: Eine Potenzialanalyse. 2022.

---

<sup>2</sup> Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast), OJ L158, 14.6.2019, p 125 (IEMD).

---

<sup>3</sup> Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast), OJ L 328, 21.12.2018, p 82 (RED II).

---

<sup>4</sup> BRPs are defined and governed in Article 2(14) and Article 5 of Regulation (EU) 2019/943 on the internal market for electricity (Recast), OJ L 158, 14.6.2019, p. 54-124 (IEMR).

---

<sup>5</sup> Council of European Energy Regulators (2017). Electricity Distribution Network Tariffs – CEER Guidelines of Good Practice. Available at: <https://www.ceer.eu/documents/104400/-/-/1bdc6307-7f9a-c6de-6950-f19873959413>

---

<sup>6</sup> Ovaere, Marten, Collective energy sharing: Cost-Benefit Analysis and Survey Evidence of the Willingness to Invest (March 8, 2023). Available at SSRN: <https://ssrn.com/abstract=4404024> or <http://dx.doi.org/10.2139/ssrn.4404024>

---

<sup>7</sup> Vladimir Z. Gjorgievski, Bodan Velkovski, Francesco Demetrio Minuto, Snezana Cundeva, Natasa Markovska (2023), Energy sharing in European renewable energy communities: Impact of regulated charges, Energy, Volume 281, 128333. Available at: <https://doi.org/10.1016/j.energy.2023.128333>, p.10

---

<sup>8</sup> Ibid., p.11

---

<sup>9</sup> Tual, R, Pañella, P, and Van Vliet, R (2020). Emerging Business Models, Associated DR Strategies and Standard Contract Templates – D2.7 – FLEXCoop, p 11. Available at: <https://www.rescoop.eu/uploads/rescoop/downloads/D2.7-FLEXCoop-Emerging-Business-Models-Final-version-v.1.5.docx.pdf>.

---

## References and useful resources

<sup>10</sup> Energie Samen (2021). Energy sharing through energy communities: a white paper of Energie Samen, p 12. Available at: <https://energiesamen.blob.core.windows.net/media/White%20Paper%20Smart%20Energy%20Sharing%20Energie%20Samen%20PDF.pdf>.

---

<sup>11</sup> Inspired by a forthcoming paper by Peter Hermanns, adapted by the Energy Communities Repository.

---

<sup>12</sup> See Repository. Barriers and Action Drivers Report and Roadmap.

---

<sup>13</sup> Tisdale, M., Graum T., Neuhoff, K. (2014). Impact of Renewable Energy Act Reform on Wind Project Finance. Deutsches Institut für Wirtschaftsforschung (DIW Berlin), Discussion Papers 1387, p. 12. Available at: [https://www.diw.de/de/diw\\_01.c.466291.de/publikationen/diskussionspapiere/2014\\_1387/impact\\_of\\_renewable\\_energy\\_act\\_reform\\_on\\_wind\\_project\\_finance.html](https://www.diw.de/de/diw_01.c.466291.de/publikationen/diskussionspapiere/2014_1387/impact_of_renewable_energy_act_reform_on_wind_project_finance.html)

---

<sup>14</sup> Eisner, A, Neumann, C, and Manner, H (2023). Exploring sharing coefficients in energy communities: a simulation-based study. Energy & Buildings 297 (2023) 113447. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0378778823006771>

---

<sup>15</sup> Ibid.

---

<sup>16</sup> Ibid.

---

<sup>17</sup> Wiesenthal, J et al (2022). Energy Sharing: Eine Potenzialanalyse. Gemeinschaftlich Strom im Verteilnetz erzeugen und nutzen: Eine Studie zum Umsetzungsvorschlag im Rahmen von Artikel 22 der Erneuerbare-EnergienRichtlinie der EU (Institut für ökologische, IÖW: Berlin), p 48. Available at: [https://www.ioew.de/publikation/energy\\_sharing\\_eine\\_potenzialanalyse](https://www.ioew.de/publikation/energy_sharing_eine_potenzialanalyse)

---

<sup>18</sup> Ibid., p. 51

---

<sup>19</sup> Implementing Regulation (EU) on interoperability requirements and non-discriminatory and transparent procedures for access to metering and consumption data. C(2023) 3477 final.

---

<sup>20</sup> Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data. OJ L 119, 4.5.2016, p. 1-88.

---

<sup>21</sup> Elecsum la teva energia. See also Repository (2023). Barriers and Action Drivers Report.

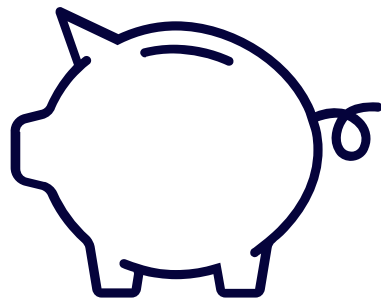




## Useful Resources

### Financing

- SCCALE 203050 – [Financing Guide for Energy Communities](#)
- ACCE – [Best Practice Report on Access to Capital for Community Energy](#)
- Compile – [Financing Guide](#)
- COME RES – [Report on Novel Financing Instruments for RECs](#)
- PROSPECT+ – [Resources Section](#)
- Profundo and Friends of the Earth Europe – [Energy Communities in the EU: Opportunities and barriers to financing](#)



- REScoop 20-20-20 – [Handbook on Investment Schemes for REScoop Projects](#)
- Community Power Project – [Community Power Financing: Mobilisation of public-private financing for community based sustainable energy projects in Central and Eastern Europe](#)
- Energy Cities – [Investment Needs for the Local Energy Transition](#)



### Developing energy sharing coefficients

- Miguel Manuel De Villena, Sébastien Mathieu, Eric Vermeulen, Damien Ernst (2020). Allocation of locally generated electricity in renewable energy communities, arXiv preprint, arXiv:2009.05411. [Access this article here.](#)
- Andreas Fleischhacker, Hans Auer, Georg Lettner, Audun Botterud (2018). Sharing solar PV and energy storage in apartment buildings: resource allocation and pricing, IEEE Trans. Smart Grid 10 (4) (2018) 3963–3973. [Access this article here.](#)
- Bernadette Fina, Carolin Monsberger, Hans Auer, Simulation or estimation? — Two approaches to calculate financial benefits of energy communities, J. Clean. Prod. 330 (2022) 129733. [Access this article here.](#)



## Annex (Tables)

Table 1: Impacts of energy sharing on the energy bill

Country	Context
<b>Austria</b>	<p>Members of REC are eligible for reduced grid fees. Specifically, the volumetric component of the network charge is reduced according to the level of the grid that production installation(s) and members are located in compared to the production site</p> <ul style="list-style-type: none"> <li>in the local area (remark: RECs on a local level) for grid levels 6 and 7 by 57%;</li> <li>in the regional area (remark: RECs on a regional level) for grid levels 6 and 7 by 28%;</li> <li>for grid levels 4 and 5 by 64%.</li> </ul> <p>All grid-usage-charge-related price decreases also inherit additional VAT (20%) reductions. In addition, the energy produced and consumed within the community is exempt from the financial contribution to the promotion of renewable energy and from the tax regulation. For energy that is not shared, RECs can receive market premiums for the sale of electricity for up to 50 percent of its production.</p>
<b>Italy</b>	<p>Shared electricity is represented as avoided grid losses and costs. An incentive tariff (in €/kWh) has been developed to remunerate renewables production from power plants included in the sharing. Energy volumes consumed and produced simultaneously on lower voltage parts of the grid are registered by Gestore dei Servizi Energetici (GSE). At present, the consumers receive the full bill from their energy suppliers while receiving the benefits of sharing via a separate cash-back process.</p>

### Italy (continued)

Each member of the REC pays their traditional electricity bill for electricity withdrawn from the public grid and then receives monthly cash-backs for the shared electricity. These cash-backs are computed by the GSE and then paid to the contact person nominated by the REC, who is responsible for the allocation of the cash back to the participants in the sharing configuration. The allocation of the cash-back among participants is made according to a private agreement, in accordance with the sharing coefficient.

### Belgium (Brussels Capital Region)

In the Brussels-Capital, under scenarios based on a 20-year period (2023-2042), Brugel found that quantifiable benefits outweigh the costs for the DSO once a critical mass of connections (around 20%) participating in energy sharing is reached due to effective reductions in peak network contribution (in terms of kW per project participant). This will delay investments in grid reinforcement for the DSO. Based on this determination, distribution tariffs for energy sharing are broken up between four sub-categories, including sharing within the same building, sharing on the public grid under a single low voltage sub-station, sharing under a single transmission sub-station, and sharing under multiple transmission sub-stations. The tariff available to the community depends on the sub-category where the least local member is located.

### Belgium (Flanders Region)

Energy can be shared at no cost from collective buildings (offices, apartment buildings, etc.) among the active consumers. The producer cannot charge the consumer any price for the energy that is shared. The consumers benefit in terms of cost savings with respect to the energy component in their energy bill (i.e. sourcing costs, administrative costs, no VAT) while grid costs and taxes still need to be paid, and their energy suppliers are compensated for the impact. According to En-TEC, this setup makes energy sharing interesting for production sites that are linked to the consumers sharing energy. The Study concluded that, because there are no network charge reductions for energy sharing, it is less favourable than self-consumption, for which there is a reduction in network charges.



Table 2: Procedures for registering an energy community

Country	Entities in charge	Information on the procedures
<b>Austria</b>	<ul style="list-style-type: none"> <li>E-Control (NRA)</li> <li>Austrian Coordination Office for Energy Communities</li> <li>Ministry of Energy</li> </ul>	<p>Österreichische Koordinationsstelle für Energiegemeinschaften (Austrian Coordination Office) – An <a href="#">Online One-Stop-Shop</a> where energy communities can register themselves and get all relevant technical information on the steps for registering. It also includes an Online Map.</p> <p>– Energy communities register online with <a href="#">ebUtilities</a>. On their website, they have a checklist for realising an energy community.</p> <p>To share energy, the energy community must register separately with the network operator through the conclusion of a contract. The energy community must also register metering points with a data exchange.</p>
<b>Belgium (Brussels Capital Region)</b>	<ul style="list-style-type: none"> <li>Brugel (NRA)</li> </ul>	<p>Registration is performed through the <a href="#">Brugel website</a>. Brugel contains an <a href="#">Online Map</a> of existing energy community and energy sharing initiatives on its website. Brugel respond to authorization requests within 60 days. To be successfully registered, the energy community must submit:</p> <p>the statutes of the energy community, the list of members (excluding individuals), according to the BRUGEL framework included in the appendix in step 4 of the form, the (draft(s)) agreement(s) governing the activity(ies) of the community, including at least the draft agreement for the first activity envisaged. If the activity concerns electricity sharing, proof of ownership or right of use (in the case of a local energy community) of the installation must also be provided.</p> <p>The energy community must state its intended proximity to Brugel when registering, providing addresses of residence and registration as proof.</p> <p>Brugel has published <a href="#">Guidance</a> on how to interpret the different requisite criteria for qualifying as an energy community, as well as on the procedure to submit, withdraw and renew a registration with Brugel.</p>
<b>Belgium (Flanders Region)</b>	<ul style="list-style-type: none"> <li>VREG (NRA)</li> </ul>	<p>RECs and CECs must notify the Flemish regulator (VREG) via its <a href="#">Website</a> of the following:</p> <p>the activities it carries out and any change in those activities; the way in which it is composed and, if applicable, the way in which it interprets the concept of technical or geographical proximity.</p> <p>There is no regulated procedure for registering with the NRA. Instead, the NRA provides an online form that acts as a self-declaration by an entity that wants to acknowledge itself as an energy community. Subsequently, the entity gets added to an excel document that is publicly available on the NRA's Website.</p>



Table 2: Procedures for registering an energy community (continued)

Country	Entities in charge	Information on the procedures
<b>Belgium (Wallonia Region)</b>	<ul style="list-style-type: none"> <li>CWaPE (NRA)</li> </ul>	<p>Only the energy communities notified to the CWaPE are authorized to include the mention "energy community" on their documents, publications or communications. Any creation of an energy community whose purpose is one or more activities on the electricity market is notified to the CWaPE before the start of its activities.</p> <p>Registration is available with <a href="#">CwaPE Online</a>. CwaPE has 10 working days to respond to an application. The notification is accompanied in particular by the following documents and information:</p> <p>the statutes of the energy community;  the agreement between the energy community and its participants;  the characteristics and power of the electricity production facility/ies owned or used by the community that may confer on it the status of producer, as well as the date of their current or estimated commissioning;  the list of participants.</p> <p>Any energy sharing activity within an energy community is subject to the prior granting of an authorization issued by the CWaPE. Article 25 of the draft order of the Walloon government explains the process that the CWaPE will follow in case it finds that an energy community does not comply with the conditions and obligations prescribed in the law for energy sharing.</p>
<b>Bulgaria</b>	<ul style="list-style-type: none"> <li>AUER</li> </ul>	Not provided for. Bylaws are envisioned for the 1st half of 2024.
<b>Croatia</b>	<ul style="list-style-type: none"> <li>Croatian Energy Regulatory Agency (NRA)</li> </ul>	<p>CECs must be registered in the register of energy communities of citizens maintained by the Agency. The register must contain, as a minimum, data on owners of shares or members in the citizens' energy community, the spatial scope of the local community where the CEC, and other data. Data on the energy community of citizens from the register are to be published on the Agency's website.</p> <p>Organising a CEC is considered an energy activity regulated by the Law on the Electricity Market. The issuance of a permit is governed by A rulebook on permits for the performance of energy activities and keeping a register of issued and revoked permits for the performance of energy activities. In order to be issued a license, or permit, the CEC needs to complete and sign an application form for the issuance of a permit for the performance of energy activities. The following documentation is required:</p> <ol style="list-style-type: none"> <li>An extract from the appropriate register by which the applicant proves that it is registered for the performance of energy activities, if the Agency is unable to determine whether the legal entity is registered for the performance of energy activities by inspecting the appropriate public register.</li> <li>The founding act on the basis of which the legal entity is registered, as well as other documentation from which it is evident that the CEC meets the requirements from the law regulating the Electricity Market.</li> </ol>



Table 2: Procedures for registering an energy community (continued)

Country	Entities in charge	Information on the procedures
<b>Croatia (continued)</b>	<ul style="list-style-type: none"> <li>Croatian Energy Regulatory Agency (NRA)</li> </ul>	<ol style="list-style-type: none"> <li>3. A list of all shareholders and members in the CEC, from which for each shareholder or member there will be information about: <ul style="list-style-type: none"> <li>• the type of legal or natural person (trading company, association, foundation, etc.), whereby for entrepreneurs it is necessary to indicate the category according to accounting regulations (micro entrepreneur, small entrepreneur, medium entrepreneur or large entrepreneur);</li> <li>• the place of residence, business establishment or business premises in the area of the local self-government unit where the headquarters of the CEC are located;</li> <li>• the percentage share in the ownership and effective control of the CEC (according to the principles of the organization of the CEC);</li> <li>• the actual percentage share in the ownership or effective control of the CEC (includes shares of ownership derived from the ownership or actual control in a legal entity that is another shareholder or member of the same CEC).</li> </ul> </li> <li>4. Statement by the responsible person that medium-sized companies and large companies do not have real control over the shareholders and members of the CEC, meaning that medium-sized companies and large companies do not have ownership, rights, contracts or other means that, either separately or combined and taking into account factual or legal circumstances, give the possibility of exercising a decisive influence on the CEC, certified by a notary.</li> <li>5. An extract from the appropriate register by which the applicant proves that the CEC operates on the basis of the law governing the financial operations and accounting of non-profit organizations, if the Agency cannot determine by looking at the appropriate public register whether the legal entity is registered to carry out energy activities.</li> <li>6. Evidence of technical qualification and more specifically: <ol style="list-style-type: none"> <li>a) Proof of ownership or the right to use business premises based on a lease agreement or other agreement concluded with the owner of the business premises;</li> <li>b) Description of the information, communication and other systems for performing energy activities of the organization of the CEC;</li> <li>c) Valid contracts with other legal entities that have an impact on the applicant's technical qualifications;</li> <li>d) Three-year development and investment plan for performing energy activities, signed by the responsible person in the legal entity;</li> <li>e) Conditions for participation in the CEC, which are adopted by the CEC.</li> </ol> </li> <li>7. Evidence of professional qualifications and more specifically: <ol style="list-style-type: none"> <li>a) Organizational chart or part of the applicant's organizational chart related to the energy activity;</li> <li>b) List of employed workers and/or members of the CEC and/or shareholders in the CEC who perform work in the energy sector of the organization of the CEC, with an indication of the level of education, position and job description according to the systematization of jobs and positions signed by foreign responsible persons in the legal entity;</li> <li>c) Valid contracts with other legal entities that have an impact on the applicant's professional qualifications.</li> </ol> </li> <li>8. Evidence of financial qualification.</li> <li>9. Statement by the responsible person that the members of the management board or other persons responsible for them in the legal entity have not been legally convicted of a criminal offense against the economy in the last five years, certified by a notary.</li> </ol>

The Rulebook also states that the financial resources of the legal entity (average balance of funds in the last 30 days in the accounts of the legal entity's commercial banks) required for the performance of energy activities. Specifically for organising a CEC, it is mentioned that 20.000 kuna are needed.



Table 2: Procedures for registering an energy community (continued)

Country	Entities in charge	Information on the procedures
<b>Cyprus</b>	<ul style="list-style-type: none"> <li>CERA (NRA)</li> </ul>	No procedure exists yet. However, according to national law CERA should make sure that membership in a CEC is open and voluntary. CERA should also draft regulations setting an enabling framework for RECs.
<b>Czech Republic</b>		No legislation pertaining to energy communities at the time of writing.
<b>Denmark</b>		No process yet exists. The Danish Energy Agency publishes the projects that are approved under its Grant scheme for energy communities on its <a href="#">Website</a> . Information is available from 2022.
<b>Estonia</b>	Duty not yet allocated	
<b>Finland</b>	<ul style="list-style-type: none"> <li>DSO</li> </ul>	The DSO must register the LEC after receiving the relevant information. The DSO must then notify the Data hub no later than 7 days and no earlier than 90 days before the start of the credit calculation. The energy sharing operation must start within 14 days of receiving the full notification from the LEC.
<b>France</b>	<ul style="list-style-type: none"> <li>Énergie Partagée</li> </ul>	<p>No official authority exists to register or monitor energy communities.</p> <p>On its Website, Énergie Partagée tracks <a href="#">the number of energy communities</a> and <a href="#">other key figures</a> for the French territory.</p>
<b>Germany</b>	<ul style="list-style-type: none"> <li>Federal Network Agency (NRA)</li> <li>DGRV</li> </ul>	<p>Entities must notify the Federal Network Agency no later than three weeks after they have been given approval as a citizen energy company. The Federal Network Agency shall publish the registration numbers of the wind and solar installations for which a notification has been submitted.</p> <p>The German Cooperative and Raiffeisessen Confederation (DGRV) is an auditing organisation that also tracks numbers of energy cooperatives in operation in Germany.</p>
<b>Greece</b>	<ul style="list-style-type: none"> <li>General Commercial Registry (GEMI)</li> <li>Green Tank</li> </ul>	<p>RECs and CECs are legally established following procedural rules for the establishment of civic cooperatives under Law 1667/1986. Statutes must be drawn up according to the national law, and must include the following information:</p> <ol style="list-style-type: none"> <li>the name and headquarters of the energy community. The name includes the term "Renewable Energy Community" or the abbreviation "REC" (or "Citizen Energy Community" or the abbreviation "CEC) and the extent of liability of its members. Names of natural persons or names of legal entities are not included in the name of the energy community,</li> <li>the full name, name of the father, address and tax registration number of the members that are natural persons, as well as the name, registered office, tax registration number and, if there is an obligation to register in the General Commercial Register (GEMI), the GEMI number of the members that are legal entities,</li> </ol>



Table 2: Procedures for registering an energy community (continued)

Country	Entities in charge	Information on the procedures
<b>Greece (continued)</b>	<ul style="list-style-type: none"> <li>• General Commercial Registry (GEMI)</li> <li>• Green Tank</li> </ul>	<ul style="list-style-type: none"> <li>c) the activities of the energy community,</li> <li>d) the region of activity of the energy community or the region of development of the renewable projects,</li> <li>e) the conditions for entry, withdrawal, and deletion of members, as well as the rights, obligations and consequences of not fulfilling their obligations to the energy community,</li> <li>f) the amount of the cooperative share, the manner and time of its payment, as well as the procedure for its payment,</li> <li>g) the extent of the responsibility of its members,</li> <li>h) its duration,</li> <li>i) the number of members of the board of directors, which are not less than three (3),</li> <li>j) the fate of the cooperative share in the event of death of a member,</li> <li>k) the appointment of a temporary administrative committee, which takes care of the approval of the statutes and the convening of the first general assembly for the nomination of the board of directors,</li> <li>l) the method of disposing of surpluses,</li> <li>m) the end of the management year,</li> <li>n) the control rights, the terms, conditions and procedures for exercising them by its members and in particular the percentage of the total number of votes, the commitment of the members to maintain a certain number of cooperative shares and to fulfil certain obligations, the duration of validity and the reasons for the loss of the right, in order to maintain the essential control of the REC by members in the proximity, as defined above.</li> </ul>

The energy community must submit the following supporting documents:

- a) the statutes of the REC,
- b) for those members where proximity is required to be proven, as defined above:
  - a) notarial documents or declarations of property data for members that are natural persons, which prove the full or bare ownership or usufruct in property located within the region of activity or development of the REC's renewable energy project, or
  - b) family status certificates of members that are natural person who are citizens of the municipality of the region, within which the REC operates or develops the renewable energy project,
- c) the statutes of the legal entities that are members in the REC, if such legal entities exist,
- d) other data for legal entities, in order to check that they are small and medium enterprises.

Once successful, the energy community acquires legal personality and commercial status and is registered in the general commercial registry (GEMI) which is governed by provisions that regulate the REC and CEC Registry.

The registration of an energy community may be legally challenged via a lawsuit, but only within 2 months from the time the plaintiff becomes aware of the registration, and in any case no longer than 6 months after the registration.



Table 2: Procedures for registering an energy community (continued)

Country	Entities in charge	Information on the procedures
<b>Hungary</b>	<ul style="list-style-type: none"> <li>Hungarian Energy and Public Utility Regulatory Office</li> </ul>	<p>A public registry of energy communities and aggregators is established and managed by the Hungarian Energy and Public Utility Regulatory Office. Energy Communities must apply to the Office for registration at least 75 days before the start of the activity. The declaration must contain statutes, a list of activities, and a declaration that it complies with the effective control limitations as well as a list of the substations impacted by its creation. Any change should be notified to the Office within 30 days of the change. The Office will run compliance checks on the registry, and will publish a list of EC on its website.</p>
<b>Ireland</b>	<ul style="list-style-type: none"> <li>CRU (NRA)</li> <li>Ministry</li> </ul>	<p>In the Community Energy Resource Toolkit of its <a href="#">Community Enabling Framework</a>, the Sustainable Energy Authority of Ireland (SEAI) provides Guidance that includes information on how to register a cooperative or another legal entity.</p> <p>Applicants to Ireland's Renewable Energy Support Scheme (RESS) within the Community Preference Category are required to provide a director's declaration that the project meets the requirements of a Community-led project (the criteria is defined in the terms of reference for the auctions). The form of this declaration will be issued by the TSO. They must be submitted to the Ministry.</p> <p>An Application for Qualification for a Community-Led Project must be made in conjunction with a Sustainable Energy Community. The Sustainable Energy Community must be identified in the Declaration of Community-Led Project, together with a description of the relationship between the Applicant and the Sustainable Energy Community.</p> <p>The Community-led category has been left out of the Third Round of auctions under RESS, which will convert into the newly-established Small-Scale Renewable Electricity Support Scheme. Terms of and Conditions will be published at the end of 2023.</p>
<b>Italy</b>	<ul style="list-style-type: none"> <li>GSE (General System Manager)</li> </ul>	<p>GSE (Energy System Manager) is in charge of managing the implementation of <a href="#">Online Registry</a> for CECs and RECs and energy sharing projects generally, defining the management rules (standards, parameters, protocols) to measure the shared energy and acknowledging the incentives provided by the legal framework, monitoring the evolution of the RECs system and the overall economic impact on the energy system. It has established a portal in order to register initiatives.</p>
<b>Latvia</b>	<ul style="list-style-type: none"> <li>State Construction Control Board</li> </ul>	<p>The State Construction Control Bureau is responsible for both the establishment, maintenance, administration and management of the Register of Energy Communities, making records and updates in the register as well as ensuring public availability of the register. The status of an energy community is only acquired after registration to this registry. The Cabinet of Ministers will determine the information to be included in the register of energy communities, registration requirements and procedures, the information to be included in the application for registration or termination of operation, among other things. Regulations for procedures and requirements are still being drafted.</p>





Table 2: Procedures for registering an energy community (continued)

Country	Entities in charge	Information on the procedures
<b>Latvia (continued)</b>	<ul style="list-style-type: none"> <li>State Construction Control Board</li> </ul>	<p>The Cabinet of Ministers will provide clarity on what the requirement of proximity means and will specify the mandatory requirements in the energy community's statutes, as well as the rules on the relations between the energy community's members and shareholders, its representative and other energy users, and energy suppliers, including the system operator and heat supply system operator.</p> <p>By the 30th of June 2023 the Ministry of Economics, in co-operation with the Ministry of Environmental Protection and Regional Development, should have elaborated and publish Guidelines for the Formation of Energy Communities, including the recommendations for public persons (public authorities) regarding the provision of support for energy communities and their participation in energy communities.</p>
<b>Lithuania</b>	<ul style="list-style-type: none"> <li>State Energy Regulatory Council</li> </ul>	<p>Before commencing activities, a REC must obtain a permit to produce electricity by the State Energy Regulatory Council. The Law on Public Bodies applies to the Renewable Energy Community. A public body acquires the status of a renewable energy community at the time of the issuance of a permit to produce electricity by the State Energy Regulatory Council. The law adds that the founding documents of a non-profit legal entity seeking to acquire the status of a REC, on top of the requirements set forth in the laws regulating the activities of a non-profit legal entity, they should also indicate the procedure:</p> <ol style="list-style-type: none"> <li>1) by which decisions are made regarding the realization of the produced energy;</li> <li>2) of the administration and maintenance of energy production facilities;</li> <li>3) of the distribution of income received from the performance of energy production activities.</li> </ol> <p>In order to obtain CEC status, the legal entity submits to the Council an application in the prescribed form and the founding agreement and/or statutes or other founding documents of a legal entity. CEC status is granted within 30 calendar days from the date of submission of all appropriate documents to the Council.</p> <p>After the Council has assessed the documents submitted by the legal entity and determines that the application contains inaccurate, incomplete information, wrong data and/or not all or inappropriate documents have been submitted, no later than within 10 working days from the date of registration of the application with the Council, it shall inform the legal entity about this and give a deadline of 10 working days to clarify the documents.</p> <p>The Resolution adds that if the legal entity does not submit all the necessary documents or does not submit them within the stipulated time or if it is established that the application and/or documents contain known false data and/or if it is determined that the legal entity does not meet the requirements on membership and governance of a CEC, as regulated in the Law on Electricity, the Council shall, by resolution, decide not to grant the legal entity CEC status.</p>



Table 2: Procedures for registering an energy community (continued)

Country	Entities in charge	Information on the procedures
<b>Lithuania (continued)</b>	<ul style="list-style-type: none"> <li>State Energy Regulatory Council</li> </ul>	<p>The Council publishes information on the CEC status granted or canceled to the legal entity on its website within 5 working days from the decision on granting or canceling the CEC status. The distribution network operator is informed in writing about the CEC status granted or canceled to the legal entity no later than within 3 working days from the adoption of the relevant decision.</p> <p>The community has the right to appeal the decision made by the Council regarding the cancellation of CEC status within one month from the date of adoption of the decision to the court in accordance with the procedure established by the Law on Administrative Cases of the Republic of Lithuania.</p>
<b>Luxembourg</b>	<ul style="list-style-type: none"> <li>Luxembourg Regulatory Institute</li> </ul>	<p>The establishment and dissolution of an energy community must be notified to the regulator by means of a notification form which it makes available for this purpose.</p> <p>An electrical energy sharing activity that an energy community intends to organize between its members or shareholders and the definitive cessation of such sharing activity, as well as any change in the composition of the members or shareholders who participate in the of the Community are to be reported to the regulator as well as to the Grid Operator and the suppliers concerned at the latest at the event. The statutes of CER must define clearly the modalities of functioning, of entry and exit for the members.</p>
<b>Malta</b>	Unassigned	No procedure has been established.
<b>Netherlands</b>		No legislation pertaining to energy communities at the time of writing.
<b>Poland</b>		No legislation pertaining to energy communities at the time of writing.
<b>Portugal</b>	<ul style="list-style-type: none"> <li>Directorate-General for Energy and Geology (DGEG)</li> <li>DSO</li> <li>ADENE</li> </ul>	<p>There is no official registration process for energy communities. The rules that have been elaborated for registration pertain only to energy sharing initiatives, which covers but is not limited to energy communities. This Registration process is done through the <a href="#">Online Portal</a> of the Directorate-General for Energy and Geology (DGEG). DGEG also contains relevant information on its <a href="#">Website</a>. This includes a licensing guide, a guide on registration procedures, the legal framework, FAQs, and other technical information.</p> <p>Self-consumers participating in collective self-consumption have an internal regulation that is communicated to DGEG, within a maximum period of three months after the production unit for self-consumption comes into operation, and which defines, at least, the requirements for access of new members and exit of existing participants, the required deliberative majorities, the mode of sharing the electricity produced for self-consumption and the payment of due tariffs, as well as the destination of surplus self-consumption and the commercial relationship policy to be adopted.</p>



Table 2: Procedures for registering an energy community (continued)

Country	Entities in charge	Information on the procedures
<b>Portugal (continued)</b>	<ul style="list-style-type: none"> <li>Directorate-General for Energy and Geology (DGEG)</li> <li>DSO</li> <li>ADENE</li> </ul>	<p>The management entity must communicate to the network operator, through the electronic platform provided for in legislation, which sharing method is intended for the distribution of the production unit for self-consumption production by the self-consumers participating in the collective self-consumption and its alterations</p> <p>ADENE has published a <a href="#">Legislative Guide on Energy Communities</a> and how to set up an initiative.</p>
<b>Romania</b>		No procedure has been established.
<b>Slovakia</b>	<ul style="list-style-type: none"> <li>Office for the Regulation of Network Industries</li> </ul>	<p>The Office for the Regulation of Network Industries (URSO) issues and cancels certificates for establishing ECs and CPERSs. In addition, URSO performs control over the compliance with obligations related to the licensing of an EC, balancing responsibilities, and operation and management of a local distribution system (LDS) by the EC.</p> <p>A specific license applies to ECs. URSO registers the certificates and publishes a list of the EC and CPERS on its website. By law, URSO must issue a certificate for establishing an EC (or a CPERS) within 30 days on the basis of a written request. The certificate includes the designation of the office, the name or business name of the EC, the address of the registered office and the identification number of the legal entity, a declaration that the applicant is an EC or a CPERS, date of issuance of the certificate, as well as a signature indicating the name, surname and function of the authorised person and an official stamp.</p>
<b>Slovenia</b>		CEC should be established as a cooperative according to the law governing cooperatives.
<b>Spain</b>		No procedure has been established.
<b>Sweden</b>		No legislation pertaining to energy communities at the time of writing.



Table 3: Parameters allowed for energy sharing

Type or size of installations that may be used for renewable energy production	
<b>Austria</b>	None.
<b>Belgium</b>	Flanders – not specified.
<b>Croatia</b>	<p>The total connected power of all production facilities at one billing metering point or several metering points on an apartment building or a community of renewable energy sources in the case of several billing metering points does not exceed 500 kW</p> <p>The total connection power in the direction of the delivery of electricity to the network at the calculation metering points of the owners of shares or members of the CEC must not exceed 80% of the total connection power in the direction of the receipt of electricity at those calculation measurement points</p>
<b>Finland</b>	Production cannot exceed 1 MW; or else it has to be balanced individually.
<b>France</b>	3 MW within the initiative (0.5 MW overseas)
<b>Greece</b>	3 MW
<b>Italy</b>	The maximum capacity should remain under 200 kW, however, it is not made clear if it is for an individual plant or for the overall initiative. The production limit could be lifted to 1MW with changes that are expected soon.
<b>Portugal</b>	Projects above 30kW need a license, but are allowed

**Spain** Up to 100 kW, it is possible to produce for self-consumption and to make a simplified compensation in the bill for the electricity not consumed. It is still possible to produce from an installation above 100 kW, but it is not eligible for the same grid distribution charges.

#### Geographical proximity within which final customers are allowed to participate in an energy sharing initiative

<b>Austria</b>	<ul style="list-style-type: none"> <li>Local REC: the low-voltage distribution system;</li> <li>Regional REC: the regional grid (maximum the medium-voltage level)</li> <li>CECs across different grid concession areas (country-wide)</li> </ul>
<b>Finland</b>	<ul style="list-style-type: none"> <li>LECs: Same property or property group and are connected to the DSO through the same connection point.</li> </ul>
<b>France</b>	Within a circumference of 2 km and served by the same substation. This may be extended to 20 km when the initiative is situated in a low-density area
<b>Greece</b>	Regional (except in the region of Athens, where you can join a project in the next region)
<b>Italy</b>	Under the same secondary substation (neighbor-hood level). The regulation could change soon, where it could be expanded the same primary substation (1 or 2 km).
<b>Latvia</b>	Within the area of one DSO.
<b>Luxembourg</b>	REC: same zone in the downstream of a transformation station from high or medium voltage to low voltage electricity (or, if applicable, within a perimeter of 20 house numbers.
<b>Portugal</b>	The parameter is defined based on the tension level of the participant and the production unit: 2 km for LV, 4 km for MV, 10 km for HV, and 20 km for VHV). It is possible to extend these limits if the technical conditions allow it.



Table 3: Parameters allowed for energy sharing (continuation)

<b>Slovenia</b>	Production and consumers sharing the same LV distribution grid.
<b>Spain</b>	Three options: 1) within a 2 km circumference); 2) under the same sub-station; 3) within the same property
<b>Period allowed for netting community production for sharing purposes</b>	
<b>Austria</b>	15 minutes
<b>Belgium (Flanders)</b>	15 minutes
<b>Croatia</b>	15 minutes
<b>Finland</b>	15 minutes
<b>France</b>	30 Minutes (after 2025, 15 minutes), which is the same as the balancing period
<b>Greece</b>	1 year (a Ministerial Decision under new national legislation will revisit this time period).
<b>Italy</b>	1 hour
<b>Luxembourg</b>	15 minutes
<b>Portugal</b>	15 minutes
<b>Slovenia</b>	monthly, weekly, or daily netting should be considered
<b>Spain</b>	1 hour

Table 4: Sharing coefficients available to energy sharing initiatives

<b>Austria</b>	It is possible to choose between one dynamic sharing coefficient versus one static coefficient
<b>Croatia</b>	The Sharing key is determined by the energy community in line with the contract on participation in the energy community that is submitted to the DSO. During the accounting period, electricity sharing schemes cannot be changed.
<b>Finland</b>	Static key
<b>France</b>	It can be static or dynamic. The organiser indicates to the DSO the allocation key associated with each consumer participating in the CSC operation, and, if applicable, the calculation method. If the OLP does not do so, a simple static key is set in proportion to their consumption, within the limit of their actual consumption.
<b>Greece</b>	Shared electricity depends on the distribution of ownership. Technically, there are limitations that no member can have more than 20% of capital/ownership in the project
<b>Italy</b>	It is a virtual allocation. Therefore, it can be static or dynamic. GSE compensates the community based on value and avoided costs of the self-consumer energy. It is then up to the community to formalize in the contract how this value is shared among members.
<b>Luxembourg</b>	The REC is allowed to choose to establish its own allocation key. There is a default option to allow the DSO to establish.
<b>Portugal</b>	No limit to which dynamic sharing coefficient is chosen by the initiative
<b>Slovenia</b>	Fixed or dynamic
<b>Spain</b>	The members of the scheme can only be changed once a year (with exceptions). Coefficients of attribution are decided by participants (the sum of all coefficients must be 1). Hourly coefficients were introduced in November 2021. The energy allocation coefficient can also only be changed once a year. An improved coefficient regime (from fixed coefficient to hourly coefficient) is expected in a subsequent decree.





Table 5: Services and corresponding investment costs &amp; national provisions on the use of an organising entity or service provider

Step in the process	Investment costs	Operational costs
<b>Contracting</b>	The Energy Sharing Group has to agree on the sharing arrangement. There might be costs of involving a notary or other professional in this process. Requests for mandates from members to changes parameters of the calculation method might require an information exchange process (API, (e)-mail).	n/a
<b>Validation</b>	Automated validation checks need to be implemented.	There might be operational costs related, especially if there are manual checks required.
<b>Calculation</b>	ICT should be in place for: collecting the relevant metering data, read input parameters provided by the sharing group representative (e.g. via API or file sharing), apply the calculation method on the data. Report the results of the calculation to the sharing group representative and/or the Sharing Result Administrator.	n/a
<b>Administration</b>	A dedicated administration may need to be set up (option 1) or a process should be implemented that provides the facilitator the rights to add information about energy sharing to supply business processes (options 2 and 3) or metering processes (option 4).	n/a
<b>Settlement (if applicable)</b>		
Grid charges and taxes	ICT functions should in place that can calculate the grid charges and taxes that apply to shared energy volumes.	If a separate invoice needs to be sent, additional operational costs (mainly financial aspects, e.g. dealing with non-paying customers) are due.
Paying fees to facilitator	Integrate the fees into the energy bill or create a dedicated process to calculate and invoice the fees.	Same
Compensation of stakeholders	Dedicated calculation and invoicing/cash back process for compensation of stakeholders should be implemented.	Same
Intra-sharing group	When the energy sharing group is the facilitator, it is possible to do this less professional. If a regulated party settles the intra-sharing group payments, this requires a much larger investment in ICT.	Same

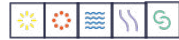


Table 5: Services and corresponding investment costs & national provisions on the use of an organising entity or service provider (continuation / examples from Member States)

<b>Austria</b>	Allows for third party ownership
<b>Croatia</b>	It is obligatory to establish an energy community organiser, which is treated as a regulated activity. The community may appoint a representative or manager to represent the community to third parties.
<b>Finland</b>	Balancing responsibility can be delegated to the DSO through a contractual arrangement.
<b>France</b>	Collective self-consumption requires the establishment of an organising legal person, which in the case of an energy community is the community itself. For social housing, collective self-consumption may be managed by a social housing operator. The organiser must enter into a contract with all participants (including consumers and producers) and must sign an energy sharing agreement with the DSO on their behalf.
<b>Italy</b>	A delegated party (REC management body) may perform the management and payment of incentives for sharing issued by the GSE.
<b>Luxembourg</b>	A service provider can manage the electricity sharing on behalf of REC, provided that the service provider is not a member.
<b>Portugal</b>	Legislation provides for a managing entity, which may be a REC/CEC or another entity. The managing entity is responsible for carrying out the operational management of production facilities, metering and other assets, communication with the electronic platform provided for in legislation, the connection with the network. The management entity also takes care of the communication with the respective system operator, namely in terms of production sharing and respective coefficients. It may also manage the commercial relationship, where surplus production is sold to the market. Projects may be owned by the community, as well as third parties, as long as it is for the benefit and at the service of the REC.
<b>Slovenia</b>	RECs may appoint a legal representative, which may be a third party, as long as they are not a member of the REC.
<b>Spain</b>	It is currently up to each DSO whether to allow a collective self-consumption initiative to nominate a representative to act on behalf of the members towards the DSO. Energy community suppliers often provide facilitative services to help members and non-members set up initiatives.





Table 6: Rules for registration and obtaining a grid connection

<b>Austria</b>	<p>The energy community must obtain a grid connection for each of its production installations. The community is entitled to obtain information about the connection to the distribution grid of their renewable energy installations within 14 days. The network operator must be informed of:</p> <ol style="list-style-type: none"> <li>1. description of the functioning of the generating plants (possibly storage plants);</li> <li>2. Consumption systems of the participating network users;</li> <li>3. Respective ideal production and consumption shares of the grid users;</li> <li>4. Allocation of the energy not consumed by the network users at a precision degree of 15-minute;</li> <li>5. Admission and removal of users; and</li> <li>6. Termination or dissolution of the EC and the dismantling of the generation plants.</li> </ol>
<b>Belgium</b>	<p>Region of Wallonie: Any energy sharing activity within an energy community is subject to the prior granting of an authorization issued by the NRA, CWaPE.</p>
<b>Finland</b>	<p>The DSO must register the LEC after receiving the relevant information. The DSO must then notify the Data hub no later than 7 days and no earlier than 90 days before the start of the credit calculation. The energy sharing operation must start within 14 days of receiving the full notification from the LEC.</p>
<b>France</b>	<p>France also requires that the energy community enter into a contract with the DSO to engage in collective self-consumption. This contract must include specific information.</p>
<b>Italy</b>	<p>GSE (Energy System Manager) is in charge of managing the implementation of registry for CECs and RECs and energy sharing projects generally, defining the management rules (standards, parameters, protocols) to measure the shared energy and →</p>
<b>Italy (continued)</b>	<p>→ acknowledging the incentives provided by the legal framework, monitoring the evolution of the RECs system and the overall economic impact on the energy system. It has established a portal in order to register initiatives.</p>
<b>Luxembourg</b>	<p>The energy community must get approval from the DSO based on an application form that has been approved by the NRA. the NRA has also written up a model contract that RECs must sign with the DSO in order to get a project approved.</p>
<b>Portugal</b>	<p>Self-consumers participating in collective self-consumption have an internal regulation that is communicated to the Directorate-General for Energy and Geology (DGEG), within a maximum period of three months after the production unit for self-consumption comes into operation, and which defines, at least, the requirements for access of new members and exit of existing participants, the required deliberative majorities, the mode of sharing the electricity produced for self-consumption and the payment of due tariffs, as well as the destination of surplus self-consumption and the commercial relationship policy to be adopted.</p> <p>The management entity must communicate to the network operator, through the electronic platform provided for in legislation, which sharing method is intended for the distribution of the production unit for self-consumption production by the self-consumers participating in the collective self-consumption and its alterations.</p>
<b>Slovenia</b>	<p>The DSO registers RESC on the basis of the status and a form that is accessible on the website. The form shall contain the following information: name of community, indication of consumption and production points involved, the production sharing key and the designation of the person authorized to communicate with the DSO.</p>
<b>Spain</b>	<p>Collective self-consumption (CSC) installations without surpluses and with surplus power equal to or less than 15 kW are exempt from requesting access and connection permits.</p>





Table 7: Allocation of grid capacity to community renewables projects

<b>Greece</b>	In areas where there is grid congestion, space has been reserved for net metering. However, it has been broken up into slices of 10 kWp per application, preventing community-scale projects from utilising it.
<b>Ireland</b>	Grid connections are determined in 'batches', and within a batch only a limited amount of applications can be processed and concluded. This acts as a first-come-first-served approach. Under the national Renewable Energy Support Scheme (RESS), RECs can apply for RESS under a separate 'community-led category. To ensure community-led projects can obtain a grid connection for their supported project, the Government established a 'non-batch process'. 15 spots are reserved for community projects with projects between 500 kW and 5 MW, while the other 15 are reserved for self-consumption projects under 500 kW. These numbers align with the size of projects that are eligible for the energy community preference category under the RESS auctions scheme.
<b>Lithuania</b>	The grid planning procedure has concluded that with available grid connection capacity, 4 GW of production can be installed in the next two years. To create equal opportunities for different types of grid users, the Government proposed to reserve 2 GW of production potential for energy communities and individual prosumers through the grid connection process.
<b>Spain</b>	In a draft Royal Decree, the Government has proposed to move towards an auction process to allocate grid connection capacity. Acknowledging that the specificities of RECs need to be taken into account in the design of competitive bidding processes, the Royal Decree proposes to temporarily reserve 5% of the available grid capacity for energy communities, it is unclear how this reservation would work in practice.





Table 8: Internal rights and responsibilities (including consumer rights and

<p><b>Austria</b></p>	<p>A contract between the REC and the participating grid users containing all the necessary provisions pursuant to the legal form that is established (cooperative, partnership, corporation, or similar association with legal personality) and rules governing participation. If non-profit status does not already result from the chosen corporate form, it must be expressed in the founding statutes that the main priority is not to make profit.</p> <p>They must also conclude contracts in the following areas:</p> <ul style="list-style-type: none"> <li>• data management and data processing of the energy data of the generation plants and the consumption plants of the participating grid users by the DSO;</li> <li>• Operation;</li> <li>• maintenance and servicing of the generation facilities as well as the bearing of costs;</li> <li>• liability; and</li> <li>• insurance, if any.</li> </ul>	<p><b>Belgium (Region of Flanders – continued)</b></p> <ol style="list-style-type: none"> <li>4. a description of the ecological, economic or social objectives of the energy community;</li> <li>5. the provisions on the costs of the community and the allocation of any profits generated by the activities of the energy community;</li> <li>6. if applicable, the provisions on the management of green certificates, cogeneration certificates and guarantees of origin;</li> <li>7. the provisions on the effective control or control of the activities of the Energy Community and the voting method within the bodies of the Energy Community;</li> <li>8. in the case of a REC, the way in which autonomy is guaranteed and the generating installations of which it owns and which it can use to carry out its activities;</li> <li>9. the activities that the energy community will exercise;</li> <li>10. if applicable, and in accordance with the technical regulation for the distribution of electricity, the determination of the distribution key that applies and any financial consequences in the context of energy sharing and the conditions and procedure under which the distribution key can be changed. The rules on energy sharing are fair, transparent and non-discriminatory;</li> <li>11. the conditions for the accession to and exit from the energy community, and if applicable, the conditions for the accession to and exit from energy sharing in accordance with the technical regulation for the distribution of electricity. The conditions shall be transparent, objective, fair, non-discriminatory and proportionate;</li> <li>12. if applicable, and in accordance with the technical regulation for the distribution of electricity, the method of reporting errors with regard to the distribution key applied;</li> <li>13. the method of lodging a complaint with the Energy Community;</li> <li>14. the method of initiating procedures for the settlement of disputes with the Energy Community;</li> <li>15. the provisions on the rights and obligations of the Energy Community and its members or partners on respect for privacy and the protection of personal data.</li> </ol>
<p><b>Belgium (Region of Flanders)</b></p>	<p>The members or partners shall each conclude an agreement with the REC on their rights and obligations. If energy sharing is carried out within the REC, the agreement shall set out the rights and obligations of the members or partners for the applicable energy sharing key. The Flemish Government can determine the minimum content of this agreement.</p> <p>Each REC shall lay down in its statutes the rules on the control of its members or partners and the autonomy of the community</p> <p>The agreement between the REC or CEC and each of its partners or members shall be concluded on an entirely voluntary basis and shall not be required by any other agreement binding on the parties. The agreement shall be formulated in clear and intelligible language and shall contain the following information:</p> <ol style="list-style-type: none"> <li>1. the name, legal form and address of the Energy Community;</li> <li>2. provisions on the lifetime and dissolution of the energy community;</li> <li>3. the point of contact of the energy community;</li> </ol>	



Table 8: Internal rights and responsibilities (including consumer rights and protections) - continued

<b>Belgium (Region of Brussels)</b>	<p>Criteria for participation must be objective, transparent and non-discriminatory to ensure open and voluntary participation. The articles of association must demonstrate how this is met. Furthermore, they must describe the modalities for entry/exit of members, as well as transfer and transmission of members' shares and contributions.</p> <p>An application to become an energy community must be accompanied at least by the articles of association or other equivalent constitutive documents of the energy communities that include:</p> <ol style="list-style-type: none"> <li>1. the provisions relating to the effective control of the energy community and the manner in which voting rights are exercised within it and, in the case of a REC and a local energy community, the criteria according to which the condition of proximity will be established;</li> <li>2. the provisions guaranteeing the autonomy of the energy community vis-à-vis its individual members and other market players who cooperate with it in other ways;</li> <li>3. a description of the environmental, social or economic objectives of the energy community;</li> <li>4. a description of the activities that the energy community may carry out</li> <li>5. provisions on the use of any profits generated by the activities of the energy community. These provisions shall ensure that the pursuit of environmental, social or economic objectives takes precedence over the pursuit of financial gain;</li> <li>6. the provisions relating to the modalities of entry and exit of members: these modalities shall be transparent, objective, fair, non-discriminatory and proportionate;</li> <li>7. the provisions relating to the modalities of transfer and transmission of members' shares and contributions</li> <li>8. the provisions relating to the duration and dissolution of the energy community.</li> </ol>
---	---

<b>Croatia</b>	<p>The agreement on participation in the energy community is needed. The provisions of the contract on participation in the energy community must be fair and include the rights and obligations of the energy community and network users in a clear, simple and unambiguous manner, and the energy community must ensure that the network user is aware of the terms of the contract in advance. The agreement must contain at least the following components:</p> <ul style="list-style-type: none"> <li>• data on the energy community,</li> <li>• data about the network user who is the owner of the share or a member of the energy community (name and surname or name or company, personal identification number (OIB), address and landline and/or mobile phone number), and in the case of a billing metering point for joint consumption data about the representative of the co-owner, the manager or the person authorized by the users of shared consumption to represent third parties (name and surname or name or company, personal identification number (OIB), address and landline and/or mobile phone number),</li> <li>• the identification mark of the calculation measuring point of the share owner or member in the energy community, which is located within the spatial scope of the local community where the energy community operates,</li> <li>• the address of the calculation measuring point,</li> <li>• specification of services that, in accordance with the law governing the electricity market, i.e. the law governing the area of renewable energy sources and high-efficiency cogeneration, the energy community provides to owners of shares, i.e. members of the energy community,</li> <li>• method of measurement, calculation and payment of services,</li> <li>• a statement by which the network user confirms that he is familiar with the conditions of the contract on participation in the energy community, the conditions of participation in the energy community, the regulation governing the general conditions for the use of the network and the supply of electricity, and the regulation governing the change of suppliers and aggregators,</li> </ul>
----------------	---



Table 8: Internal rights and responsibilities (including consumer rights and protections) – continued

- Croatia (continued)**
- the period for which the contract on participation in the energy community is concluded and the conditions for extending, changing and terminating the contract,
  - the right to use the data of a network user who is a share owner or a member of the energy community,
  - rights and obligations of the energy community,
  - the rights and obligations of the owner of the share, that is, of the member in the energy community,
  - method of submitting a complaint,
  - method of resolving disputes.

The Founding act, i.e. the act on the basis of which the legal entity is registered, as well as other documentation need to evidence the following criteria:

- List of all share owners and all members in the CEC, from which for each share owner or member, information about:
  - a) type of legal or natural person (trading company, association, foundation), whereby for entrepreneurs it is necessary to indicate the category according to accounting regulations (micro entrepreneur, small entrepreneur, medium entrepreneur or large entrepreneur)
  - b) the place of residence, business establishment or business premises in the area of the local self-government unit where the headquarters of the CEC is located
  - c) the percentage share in the ownership and actual control of the CEC (according to the principles of the organization of the CEC)
  - d) the actual percentage share in the ownership or actual control of the CEC (includes shares of ownership derived from the ownership or actual control in a legal entity that is another share owner or a member of the same CEC)

**Croatia (continued)**

- Statement by the responsible person that medium-sized companies and large companies do not have real control over the owners of shares and members of the energy community of citizens, i.e. that medium-sized companies and large companies do not have ownership, rights, contracts or other means that, either separately or combined and taking into account factual or legal circumstances, give the possibility of exercising a decisive influence on the CEC, certified by a notary public
- An extract from the appropriate register by which the applicant proves that the citizen's energy community operates on the basis of the law governing the financial operations and accounting of non-profit organizations

**Denmark**

The participation in RECs and CECs can be limited by the partnership contract or statutes (e.g. national laws on cooperatives). Participants in RECs and CECs retain their rights as household consumers and active consumers. Members exercise their right to choose an electricity trading company when entering into an agreement for the REC or CEC to supply or share electricity.

If a participant or capital owner in a REC or CEC withdraws, the relevant company law rules apply depending on the company form. The right to withdraw from a REC or CEC does not affect any liability obligations of the participant or capital owner in relation to the REC or CEC or obligations entered into by the REC or CEC.

An electricity trading company's electricity product, which consists exclusively of the supply of electricity to participants or capital owners in a REC or CEC, which is solely produced at electricity production facilities owned by the community, are not covered by the duty to supply electricity, even if one or more participants or capital owners in the community are household consumers. Any outside supply is covered by this duty.



Table 8: Internal rights and responsibilities (including consumer rights and protections) – continued

<p><b>France</b></p>	<p>The producers and consumers are bound directly together through with the organizing legal entity. Electricity sharing is allowed provided that the rights and obligations of final consumers are maintained.</p> <p>Collective self-consumption can occur under specific conditions in social housing and be organised by the social housing operator, but nothing excludes an energy community from taking up the role of the organizing legal person (OLP). By default, in this case the tenants are considered as participant in the CSC scheme. However, it is always possible for tenants in social housing to refuse and exist the CSC operation.</p>
<p><b>Hungary</b></p>	<p>Rights and obligations of members in an energy community as a legal person are determined in the Civil Code governing the main rules of cooperative and business associations.</p> <p>Participation in an EC should not negatively affect the rights and obligations of the user. Complaints from the members of the EC against the EC should be taken care of by the consumer protection authority in the case of residential users, and by the NRA if the person is not a residential user.</p>
<p><b>Italy</b></p>	<p>Rules for joining and leaving are decided by the REC itself, within its internal regulation, unless the Civil Code provides specific rules linked to the legal entity typology (e.g. association, cooperative).</p> <p>The participating parties should regulate their relations through a private law contract which appoints a delegated party (the REC management body), responsible for the distribution of the shared energy.</p>

<p><b>Luxembourg</b></p>	<p>The statutes of REC must define clearly the modalities of functioning, of entry and exit for the members. Participation as member or shareholder is voluntary, and does not go against the rights and obligations of final customers. The members and shareholders must be allowed to exit the community within one year from the notice.</p>
--------------------------	--

Data protection

The Parties shall comply with the legislation on the protection of personal data, in particular the European Regulation 2016/679 of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data. The DSO shall adopt appropriate security practices and measures with regard to collection, storage and processing practices and measures to protect against unauthorised access, alteration, disclosure or destruction of personal data. The Network Operator collects personal data for the purpose of performing the Agreement. Personal data shall be kept by the DSO in a form that allows the identification of the data subjects or persons concerned for a period not exceeding the purposes for which they are processed.

The Members of the RECs have a right of access, rectification, erasure, portability of their data (right to receive their personal data in a structured format to be transmitted to another controller) as well as a right to object to the processing of their personal data. Where a personal data breach is likely to result in a high risk to the rights and freedoms of data subjects, the Parties undertake to inform the persons concerned of the said breach without delay.



Table 8: Internal rights and responsibilities (including consumer rights and protections) - continued

<b>Portugal</b>	<p>The participants in an activity of an energy community shall each conclude an agreement with the energy community concerning its rights and obligations. The agreement shall contain at least the following:</p> <ul style="list-style-type: none"> <li>• The content of the agreement shall be expressed in clear and comprehensible language and shall include all information relevant to the understanding of the rights and obligations of the parties. Such agreements shall not discriminate between participants.</li> <li>• The REC must guarantee the departure of any of its participants, subject to compliance with the obligations to which the member is bound.</li> <li>• Consumers who carry out self-consumption activities are assured that the option to leave a community is free and does not imply any burden arising from the change.</li> <li>• The members of an energy community shall retain the rights and obligations arising from their status as users of the network.</li> </ul>
<b>Slovenia</b>	<p>The details of the collective self-consumption scheme must be included in the act that is at the basis for the establishment or operation of the renewable energy community. This should include: the mutual relations between the members, the calculations for determining the production sharing key, the production sharing key, the rights and obligations of the producer, community and the customer.</p> <p>The production sharing key may be determined in more detail in a separate contract.</p> <p>Members can share electricity provided that the rights and obligations of the members as end-costumers is maintained.</p> <p>Members leaving an energy community should do so in line with the provisions of the law governing cooperatives and of the Article 18 of the Electricity Supply Act which regulates the change of suppliers and aggregator, and the conclusion of an additional contract. A member can be excluded from a community with a notice of at least 10 days between the decision and the actual termination of its contract.</p>





Table 9: Availability of information from public administrations or system operators

<b>Austria</b>	The Austrian Coordination Office for Energy Communities (österreichische koordinationsstelle für energiegemeinschaften, or Coordination Office), inside the Austrian Energy Agency, provides an <a href="#">Online One-Stop Shop</a> for information on energy communities and setting up a project. It provides a map to identify different energy communities, and information on obtaining funding, template contracts and agreements that must be entered into with different actors, as well as brochures and guides on specific topics.
<b>Belgium</b>	<p><b>Brussels-Capital Region:</b> Brugel, the NRA, has developed a guidance document on the three different energy community definitions that exist for the region to help stakeholders understand how they can comply with the principles and successfully register an energy community. It also provides explanations on its <a href="#">Website</a> to provide prospective energy communities with clarity around applicable rules, regulations, and procedures. The Ministry has also appointed an NGO that promotes the energy transition, Energie Commune, as a '<a href="#">Facilitator</a>' to provide technical, economic, legal, administrative expertise, and other tools to promoters of energy community and energy sharing projects in the region.<sup>19</sup> This also includes specific guidance and workshops for local authorities, so they can better understand how to support energy communities, as well as participate in their development. They have also organised a workshop focused on how to undertake energy sharing in social housing. The DSO, Sibelga, also has an <a href="#">Online Information Page</a> where consumers can access information on energy sharing through an energy community, request technical information (i.e. network plans, consumption history), and register a prospective energy sharing project.</p> <p><b>Flanders Region:</b> VREG, the NRA has <a href="#">Online Portal</a> where the public can get general information on energy communities, and where energy communities can register themselves. Energy communities must register their energy sharing initiative with the DSO, Fluvius, where consumers can access information on energy sharing through an energy community, get technical information, including metering requirements, and register a prospective project. The Flemish Government also has a <a href="#">Website</a> with information on regulations, protocols, potential support, and links to registration.</p>
<b>France</b>	Endedis, the DSO in France, has developed a <a href="#">Web Page</a> providing information on how to set up a collective self-consumption initiative, as energy sharing is known in France. It contains a guide, as well as other downloadable documents necessary to set up a project, including procedures for requesting to register a project, a declaration, modalities for implementing self-consumption, and a model energy sharing agreement. It also contains a connection simulator to help potential projects see if their project may require network upgrades, as well as a link to a connection portal where a grid connection request can be submitted.
<b>Italy</b>	GSE has established an <a href="#">Online Portal</a> to register initiatives, and to access relevant information and guidance, including simulations and maps of different substations located across the grid, allowing for the identification of areas for new or existing projects.
<b>Portugal</b>	ADENE has published a <a href="#">Digital Manual</a> , which acts as a legislative guide on energy communities and how to set up an initiative.
<b>Spain</b>	The Department for Renewable Energy (IDAE) provides an <a href="#">Online Information Page</a> for energy communities, which includes information on financing opportunities and other practical information on setting up a collective self-consumption project.



#EUenergycommunities

The Energy Communities Repository is an initiative of the European Commission.

