

Facilitating energy sharing

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Introduction

In principle, citizens in EU Member States can now choose from a broad range of renewable energy technologies to participate in the energy transition. Solar photovoltaic power has become the cheapest source of electricity generation in most regions of Europe ([International Renewable Energy Agency, 2023](#)). Households usually invest in renewable energy individually, unless they are part of an energy community. For middle- and high-income households, having the means and knowledge to benefit from solar panels on their own roof is achievable. But for vulnerable and low-income households, as well as for tenants and people living in multi-unit buildings, financial and technical barriers can make access to this cheap renewable electricity difficult ([European Environment Agency, 2022](#)).

Against the backdrop of the recent energy price crisis, energy sharing could be a tool to help overcome inequalities in engagement in the energy transition and, at the same time, optimise the functioning of a flexible, cost-efficient renewable energy system. This brief focuses on the household perspective and complements the brief on designing fair renewable electricity tariffs¹.

State of play

What is energy sharing?

Energy sharing builds on the concept of citizens (and small business owners)² producing their own electricity and/or heat where they live. However, energy sharing goes beyond individual self-consumption by single households with solar panels on their roofs (see fig. 1). It is a new tool that allows citizens to **self-consume renewable energy without owning generation capacities**. Consumption does not have to take place where

¹ See brief on electricity tariffs from this series. <https://eu.boell.org/en/fair-energy-transition>

² Technically and legally speaking, the energy sharing issues discussed in this brief apply to both citizens and small and medium sized enterprises (SMEs). However, given that the focus of this toolbox is on citizen participation, the remainder of this brief will refer only to citizens.

the renewable electricity (or heat) is generated. In a group of generators and consumers, either a single generator or the group as a whole decides to allocate a certain volume of electricity directly to other consumers. While this currently constitutes only a small share of the market, energy sharing could be a social innovation that complements traditional top-down contracts with retail suppliers – still the most common way for citizens to interact with EU energy markets.

In legal terms, energy sharing can be understood as the **collective self-consumption** of renewable energy. Until recently, this activity was limited to citizens living in the same building or to members of renewable or citizen energy communities with collectively owned generation capacities (see fig. 2). The revised Electricity Market Directive (Directive (EU) 2024/1711) now opens up energy sharing to all consumers, be they households or businesses (see fig. 3), regardless of the place and ownership of the generation. In practical terms, it matches electricity supply to electricity demand for a clearly defined group of consumers at defined times, outside of the established retail energy markets. Given that energy sharing schemes can be driven by either non-profit or for-profit entities, the entity behind the scheme can influence the degree to which fair participation is a goal.

Increased participation, expanded renewables and less pressure on grids – three potential benefits of energy sharing

Expectations of energy sharing are diverse and high. Priority must be given to objectives that can be achieved using uncomplicated, financially attractive models. We have identified three potential (Öko-Institut, 2023) policy objectives: **increase participation, expand renewables** and **ease pressure on grids**.

Firstly, energy sharing could offer new opportunities to **participate** in the energy transition. There are several dimensions to this participation:

- **Financial:** Consumers get access to cheaper electricity than with fixed or dynamic price tariffs. They could also have the opportunity to invest in renewable energy sources.
- **Emotional:** There is an intrinsic motivation to join an energy sharing scheme for the opportunity to support measures against climate change and/or to consume self-produced energy. Positive involvement of citizens in the energy transition can increase its social acceptance (Pearce & Thalberg 2024; Thalberg & Schmid 2024).
- **Procedural:** Opting for an energy scheme enables citizens to actively engage in the implementation of the energy transition.

Figure 1 - Individual self-consumption

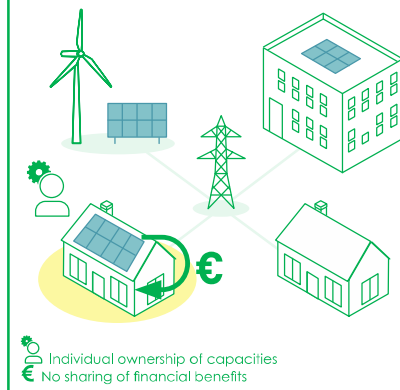


Figure 2 - Energy community

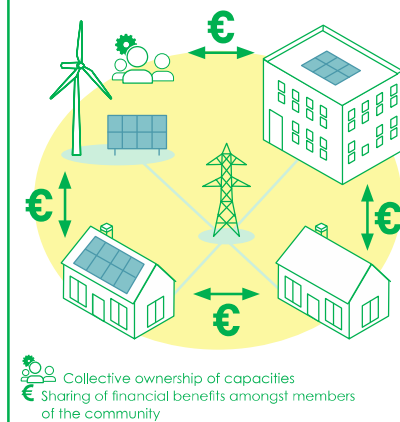
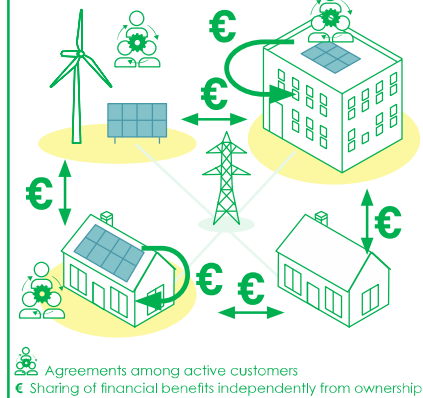


Figure 3 - Energy sharing



Secondly, energy sharing can push the energy transition forward by **expanding renewable energy capacities**. New, participation-based business models can incentivise private investment in renewables and increase social acceptance for more renewable energy installations in general. Only newly built plants help progress the energy transition; if only existing plants are used for energy sharing, there is no additionality to renewable capacities.

The third objective is to **avoid grid bottlenecks**. This can be subdivided into two elements: (1) if electricity production is increased close to where it is consumed, grid expansion can be reduced for both transmission and distribution; and (2) consumers – especially those with high electricity consumption due to heat pumps or electric vehicles – can optimise their use of shared electricity by shifting some of their demand to the appropriate hours. Whether or not these hours coincide with those in which there are bottlenecks in the distribution grid depends heavily on how the energy sharing has been implemented. Depending on the local grid topology and the specific profiles of local generators and consumers, energy sharing could actually increase the mismatch between consumption and grid bottlenecks.

While participation and renewables expansion are core objectives of energy sharing, there is still some debate as to whether energy sharing is an appropriate instrument for reducing grid expansion and therefore whether this should be a factor in how energy sharing schemes are configured.

State of play: How energy sharing contributes to fair participation in the EU energy transition

Citizen benefits

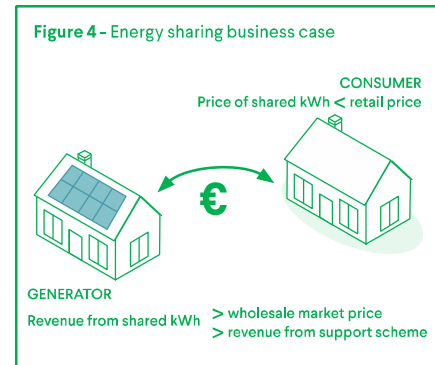
Energy sharing was originally defined legally as an activity between members of energy communities or occupants of the same building (Directive (EU) 2018/2001). It makes it possible to broaden participation beyond groups such as homeowners and the more affluent, who are already actively engaged. Setting up energy sharing schemes in an inclusive way enables **procedural participation**.³ Ideally, it brings citizens together to identify their energy needs and learn collectively how to better manage their energy consumption and plan new renewable energy installations. Energy communities such as cooperatives are a success model in this regard because they allow citizens to invest through **collective ownership** while also engaging them through strong **democratic governance** structures ([European Commission, 2024a](#)). While an energy community is a *legal entity*, energy sharing is an *activity* that can be managed by other entities such as local authorities, retail suppliers, cooperatives or other citizen-led groups. Collective ownership and democratic governance are not mandatory components of energy sharing schemes, and energy communities can operate without energy sharing. However, energy sharing schemes facilitate direct access to affordable renewable energy without the need to buy shares and become an owner, which can be a hurdle for certain groups.

There are currently only a small number of energy sharing schemes in the EU ([European Commission, 2024b](#)), but the recent reform of the Electricity Market Directive opens the door to engagement by a wider range of stakeholders. It also asks public authorities that set up energy sharing schemes to ensure that at least 10% of the shared electricity is accessible for **vulnerable or energy-poor customers**.

³ The SunSud energy sharing project is an outstanding example of a highly inclusive bottom-up tariff design process with tenants of a social housing block in Brussels.

Under an energy sharing agreement, citizens can supply other citizens with renewable electricity whenever it matches with their demand at a given time. In theory, this means that all EU citizens could meet at least some of their demand from shared renewable kilowatt-hours and thereby **participate ‘emotionally’** in the energy transition by adding this mode of remote self-consumption to their existing retail electricity tariff arrangements. Energy sharing schemes should be configured so as to allow excess electricity that is not used for the collective self-consumption to be assigned an appropriate value. This would create an incentive to install as many rooftop solar panels as possible, rather than just enough to meet the needs of a single consumer, and would make the energy transition faster and cheaper.

Participating in an energy sharing scheme can be **financially advantageous** to citizens provided the scheme is designed to **benefit both electricity generators and consumers**: the generator needs to achieve a higher revenue per kilowatt-hour from selling the electricity this way than they would get from the wholesale market or a support scheme; and the price per kilowatt-hour must be lower for the consumer than the retail price that would be payable if no shared electricity were available. The financial attractiveness of energy sharing schemes is not a given:



- A non-profit or not-for-profit organiser that does not impose any profit margin can make energy sharing financially attractive, but might have higher administrative costs (especially for early movers) than commercial organisers with bigger, diversified renewable generation portfolios and years of experience.
- If retail suppliers charge disproportionate administrative fees for customers participating in energy sharing, the cost advantages of energy sharing can be jeopardised.
- Residual electricity contracts for energy sharing customers can be more expensive than standard contracts. This is because it can be assumed that wholesale electricity prices are higher at times of low energy sharing utilisation due to low solar irradiation.
- For consumers on a dynamic price tariff, the price of the shared kilowatt-hour might be less attractive.
- For generators with access to an attractive support scheme, sharing might be less appealing.
- Success is heavily dependent on the level of taxes, levies and grid tariffs that apply to energy sharing.

Transition benefits

By enabling participation as described above, energy sharing could at the same time contribute to the **expansion of renewables**. How much of a contribution it could make depends on three main factors:

- How **complex** is it, both for the energy sharing organiser and for citizens? This will influence the transaction costs and therefore whether it needs support (either direct or indirect by reducing price elements).
- Will it be **financially attractive** for consumers?
- Will it be able to incentivise and finance **additional renewable plants** or will it only ever use existing ones?

Energy sharing has the potential to **ease energy infrastructure** in two ways. Firstly, if energy sharing results in electricity being generated closer to the place of consumption, **less additional grid capacity is needed** to connect the two locations. Secondly, energy sharing price signals can nudge consumers to **shift their demand** to hours when cheap shared electricity is available. This optimisation could be beneficial for the grid provided that these hours coincide with those with the highest grid loads. This kind of demand-side flexibility frees up grid capacity, both for more renewable installations to feed into it, and to supply an increasing number of electric heat pumps and electric vehicles.

However, these benefits do not occur automatically, whether through energy sharing or individual self-consumption behind the meter. In order to ensure that participants in energy sharing schemes shift their demand reliably, clear price signals that reflect local grid congestion and prices on the electricity markets are needed.

Reducing grid fees for locally-based energy sharing would level the playing field for behind-the-meter and collective self-consumption. In the long term, capacity-based grid fees seem to be the more targeted approach. An additional instrument, such as curtailment or load-shedding, would be required for both individual self-consumption and energy sharing in order to ensure that grid congestion is reduced.

From the perspective of overall energy system optimisation, it is inefficient for individual consumers to use battery storage and demand response to increase their individual self-consumption or shared electricity consumption without taking grids and markets into account. This kind of behaviour ties up capacities that could be used at other times to stabilise the grid or reduce market scarcity. Nevertheless, **energy sharing can help consumers to flex their demand**. Energy sharing schemes should ideally take account of both market and grid signals: for example, by combining them with hourly changing dynamic electricity tariffs and time-of-use grid fees.⁴

Key players

Who are **the key actors involved in energy sharing**? EU legislation grants energy sharing rights to households, small and medium-sized enterprises and public bodies, as well as to members of energy communities. Member States can also include additional consumer groups. An **energy sharing organiser** (e.g. an energy community, local authority, aggregator, retail supplier or other company) is responsible for allocating and billing the shared kilowatt-hours in conjunction with **distribution system operators** and the **retail electricity suppliers** that cover the residual demand whenever no shared electricity is available. **Landlords, social housing companies** and **local authorities** are well-positioned to ensure that vulnerable and underrepresented consumer groups are included.

What is missing?

EU Member States will have to transpose the new right to share energy into national law by 17 July 2026. In order to unlock the potential of energy sharing for citizen participation, national policymakers and market participants will require guidance on implementation, as well as consistent monitoring.

Guidance on the allocation of potential benefits

Since energy sharing schemes are still new in the EU, the **rights and responsibilities of key players** need to be better defined in order to foster citizen participation effectively. The benefits both for participants and the energy system as a whole can differ significantly, depending on who is behind the energy sharing scheme. In principle, an energy sharing scheme can involve anything from two neighbours in the same building to thousands of consumers across an entire EU Member State. Locally-anchored energy sharing schemes driven by not-for-profit stakeholders have different impacts from more profit-driven energy sharing schemes created by traditional market players.

⁴ Dynamic price tariffs and grid fees are discussed in another brief in this series. See other brief from this collection 'Electricity tariff design'.

Guidance is needed on developing **sharing coefficients** that ensure fair allocation of kilowatt-hours across a group of highly diverse consumers with different consumption patterns (European Commission 2023). This can give citizens priority over large companies in accessing shared electricity. Nevertheless, some more disadvantaged households may be unable to adapt their consumption to the available shared energy, whether due to technical hurdles, digital illiteracy or lack of contractual transparency.

Fair allocation of network costs

Energy sharing organisers, grid operators and regulators need to establish together principles for the fair allocation of system costs across different grid levels and types of consumers. How they allocate or remove network costs is not only critical in terms of the financial benefits for participants: it is also a key element for steering behavioural change, leveraging demand-side flexibility and reducing overall energy system costs for society. **Appropriate grid tariffs** (European Commission, 2024b) and well-designed energy sharing schemes can reduce the strain on electricity grids, lower network costs and accelerate the integration of additional renewable capacities into the grid (European Commission, 2024c). The distributional effects require proper assessment. Grid fee reduction for energy sharing without a reduction in grid costs would shift the financing gap to citizens and companies that do not use energy sharing. Here again, stronger guidance is needed to prevent unfair allocation of these costs.

Examples of good practice

The Austrian government has set up a system of tiered network tariffs for energy sharing, with different grid fees depending on the **geographical scope of the energy sharing scheme** and thus its potential impact on the electricity grid infrastructure. Energy sharing schemes that do not use the public electricity grid at all – solar self-consumption within multi-unit buildings, for instance – are partially exempted from network tariffs. There are reduced network tariffs for schemes that share electricity (or heat) between generators and consumers within limited local or regional grid zones; while schemes that share electricity across the whole of Austria pay the full network tariffs (Österreichische Koordinationsstelle für Energiegemeinschaften, 2024).

The grid operator and regulator for the Brussels region in Belgium also promote energy sharing schemes by reflecting the grid topology in the network tariffs for shared electricity. The grid operator grants **rebates for energy sharing between generators and consumers behind the same grid substation** and offers support with the metering and billing procedures for not-for-profit energy sharing organisers. According to a cost-benefit analysis commissioned by the regulator, improved matching of renewable supply and local demand can result in benefits that could outweigh the revenue losses from reduced network tariffs (Commission de régulation de l'énergie en Région de Bruxelles-Capitale, 2023). However, more research on these potential benefits is needed.

Transparency and local capacity-building for energy sharing

In addition to financial attractiveness, complexity also seems to be a deciding factor for whether energy sharing will or will not play a significant role in the energy transition. Many citizens already struggle to understand their bills. Adding a second bill or revenue stream from energy sharing could be seen as too complicated and put some citizen groups off. It is therefore essential to design simple, well-tailored energy sharing models. There must be sufficient support to provide citizens with the knowledge to participate, ideally at the local level. Energy communities are the go-to legal entity to set up energy sharing schemes and provide appropriate support to potential participants, but this role can also be taken on by local authorities, energy agencies, one-stop shops, consumer rights associations, landlords or tenants unions, especially for vulnerable and low-income households.

Depending on how clearly energy sharing is defined at the national level, different measures may be needed in order to guarantee **consumer rights protection**. There is a risk of confusion due to the wide range of different models for energy sharing: commercial or non-profit, local or nationwide, based on existing or new renewable power generation. Standardised **pre-contractual information** and/or a **labelling obligation** together with a standardised overview could provide guidance. **Online price comparison tools** are key for households' engagement in energy markets but do not yet incorporate energy sharing offers. Citizens need to better understand the potential to save money from different energy sharing offers, particularly with regard to the sharing coefficient for the allocation of available kilowatt-hours. Grid operators and retail suppliers need to be able to depend on robust, simple and privacy-proof routines for data exchange and billing. The shortage of skilled labour is one of the main bottlenecks for accelerating the energy transition: staff capacity should not be tied up in overly complicated energy sharing schemes. The revised Electricity Directive confirms that all existing consumer rights also apply to new energy sharing schemes, with one exception: since the energy sharing organiser does not have to be a licensed retail supplier, **alternative dispute resolution** (ADR) bodies cannot intervene formally. Since ADR is an important safeguard for consumer rights, Member States should extend its jurisdiction to energy sharing.

Monitoring objectives and targets for the rollout of energy sharing

No EU Member State or institution has so far developed measurable targets for the rollout of energy sharing. As yet, there are no clear strategies for mobilising its potential and allocating its benefits; nor has there been a broader **analysis** of its strengths and weaknesses compared with other instruments that could perhaps achieve the three main objectives of participation, renewables expansion and easing pressure on grids more effectively. This applies at both the EU and national levels. In parallel with addressing these shortcomings, it is also necessary to better assess the social impact of energy sharing schemes in terms of inclusiveness and fair participation, using standardised metrics. This could help to target public support more effectively.

How can the EU improve energy sharing as a tool that benefits citizens?

We have identified three main areas where EU institutions could act to improve the rollout and functioning of energy sharing.

Build capacity and raise awareness

Provide financial support

EU institutions should offer financial assistance to local authorities, local one-stop shops, and other potential not-for-profit energy sharing organisers so that they can **advise citizens and businesses who want to engage**.

Establish templates for energy sharing contracts

Simplified template contracts should be set up, including sharing coefficients for different use cases, to facilitate the participation of vulnerable and underrepresented consumer groups. Energy sharing organisers should be obliged to use these templates.

Deliver on transparency, inclusiveness and consumer rights

Promote energy sharing amongst underrepresented groups

Energy sharing must be actively promoted to consumer groups that are currently underrepresented in the energy transition. These include vulnerable and energy-poor households, tenants and people living in multi-unit buildings. It should be mandatory for energy sharing organisers that receive public support to provide **at least 20%** of the shared electricity to **these kinds of underrepresented consumer groups**.

Ensure all necessary information is easily available to consumers

There should be an obligation on EU Member States to: (a) develop an **independent, transparent, easy-to-use online price comparison tool** for energy sharing offers; (b) introduce **standardised pre-contractual information** that includes the impacts of sharing coefficients; and (c) investigate ways to guarantee consumer protection in energy sharing.

Provide for alternative dispute resolution

Member States should ensure that their national regulatory authorities and/or lawmakers implement provisions to explicitly guarantee a remit for **alternative dispute resolution bodies** for new energy sharing schemes.

Facilitate energy system benefits

Monitor and evaluate the success of energy sharing schemes

EU institutions should monitor the success of different energy sharing schemes in addressing the three objectives of greater participation (e.g. diversity of consumer groups engaged), renewables expansion (e.g. new capacity installed) and grid-easing (e.g. reduced peak load). They should provide approaches and indicators for an energy system analysis to **evaluate the strengths and weaknesses** of different energy sharing schemes as well as alternative tools to fulfil these objectives.

Work with key energy system players to ensure costs and benefits from energy sharing are allocated fairly

Guidance should be provided for regulators, grid operators and retail suppliers with regard to allocating energy system costs and benefits from energy sharing in a fair and cost-reflective way. This should be done (a) by introducing **tiered network tariffs** that reflect grid usage and reward flexibility and (b) by developing standardised methodologies and procedures for retail suppliers to account for shared electricity use so as to **limit administrative fees**.



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About the Foundations

Green European Foundation

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