SteuerBoard Energie

Governance Mechanisms in a Future Polycentric Energy System

Policy Brief

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# Establishing energy communities

## as a pillar of the climate-neutral energy system

Citizens and their community involvement are an important part of the energy transition: through financial participation in community energy companies, they contribute to the expansion of renewable energies (RE). However, with the urgency of the energy transition, rising energy costs and the desire for greater independence, citizens no longer just want to contribute financially, but want to be active themselves with locally generated energy. As a result, energy communities are transforming from pioneers of renewable expansion to transformation actors in local energy systems.

In Germany, the further development of energy communities is being implemented hesitantly or restrictively within the directives of the European Union. A coherent strategy is needed so that the added value of energy communities can be exploited for the climate-neutral energy system of the future.

In order to develop their potential, energy communities need to be considered as an important strategic and regulatory element in the future energy system. To this end, European regulations should be implemented consistently and opportunities for community activities beyond the electricity sector should be created by removing bureaucratic hurdles or de minimis regulations.

## Recommendations for making energy communities fit for the future

### 1. Firmly integrate energy communities into strategic processes

In order for energy communities to take on a role beyond "nice-to-have" in the future and become an integral part of the energy system, goals and strategies should be formulated together with the relevant stakeholders on how the communities can be promoted – for example at an energy community summit and in political processes.

### 2. Create incentives for community models with a new regulatory framework

The legal and economic framework for energy communities should become simpler and more attractive. A legal definition needs to be developed that reflects the different types of energy communities with their respective benefits for society, the environment and the energy system. To this end, the grid fee structures should be revised and new models such as energy sharing should be made possible.

### 3. Supporting local energy communities

Established local players such as municipalities or municipal utilities have a new role to play in creating an ecosystem in which energy communities thrive. They should not only provide information about the possibilities of energy communities, but also initiate them themselves and thus strengthen their local expertise. Networks should be expanded and contact points created in order to strengthen the expansion of energy communities across regions.

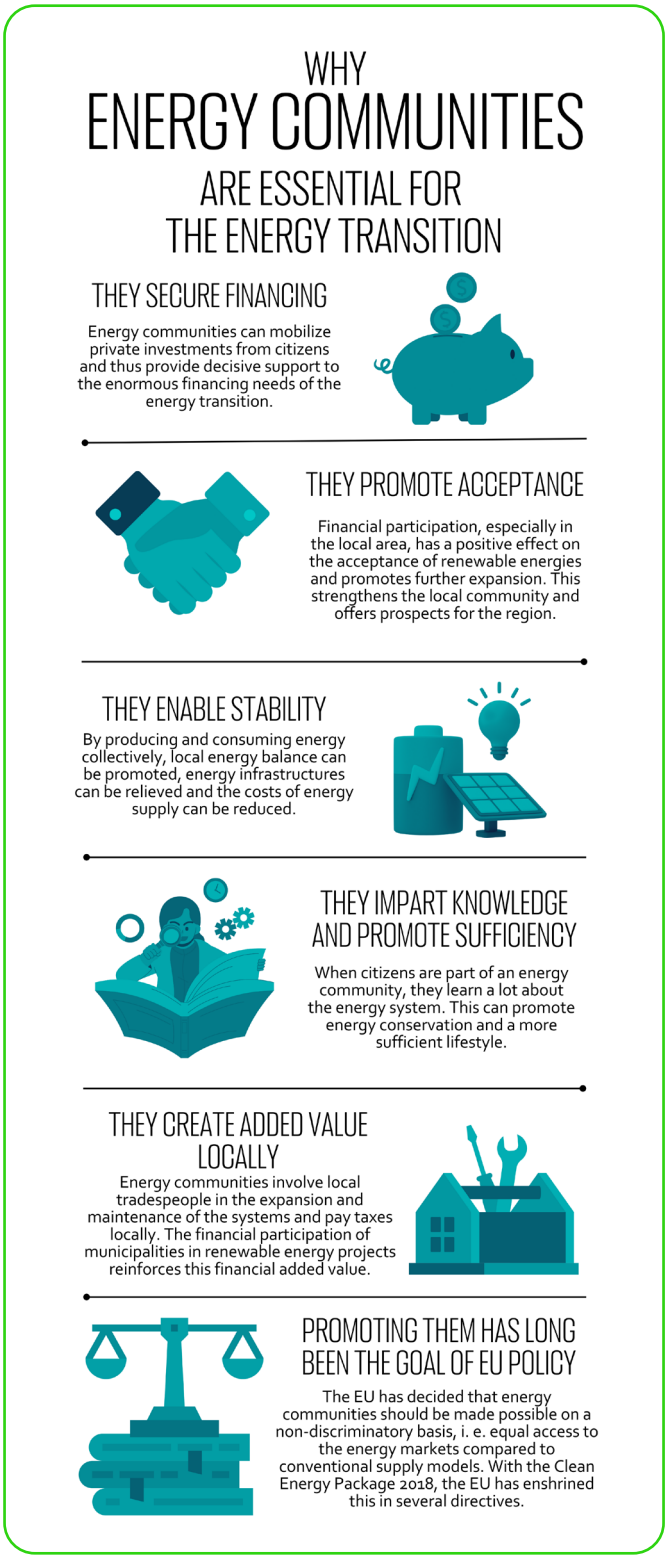
# Potential of energy communities not fully exploited

Citizen energy has a long tradition in Germany with the first energy communities emerging in the late 1980s. From 2000 onwards, the Renewable Energy Sources Act (EEG) led to a boom in community wind farms, solar projects on public roofs and local heating networks financed by citizens. According to our own estimates, there were around 2,500 to 3,000 energy communities in 2021. They differ in terms of organization, geographical activity, size, technologies used, cooperation with local actors or the form of financing.[1] Around a third are organized as cooperatives. However, the number of new cooperatives has fallen sharply because the legal and economic framework conditions have deteriorated.[2]

While the first energy communities tended to be investment cooperatives, many of the energy communities now offer their electricity for sale in the region. And once started, experience shows that activities continue: in 2023, 74 percent of cooperatives were planning further projects to build renewable energy plants. By 2030, energy communities have the potential to close half of the investment gap in the EU member states.[3]

However, the energy communities are struggling with problems: their work depends on the motivation of volunteers or a small number of paid people. Women, younger people, people with a migrant background and from low-income households tend to be underrepresented. This contradicts the widespread idea in politics and science that energy communities enable all citizens to participate in the energy transition.[4]

Another hurdle is that if energy communities want to do more than just build new renewable energy plants, they will face major regulatory requirements, for example in terms of metering and billing concepts, which are tantamount to setting up an energy supply company. Some of the communities have already found solutions to this by joining forces – for example, by founding "Bürgerwerke" or cooperating with municipal utilities.




Sources: 5, 6, 7

## Germany lags behind in digitalization

Digitalization can open up new opportunities for energy communities and support their implementation: in particular, extended models of community energy, which would be in line with the implementation of the EU Renewable Energy Directive, benefit from digital measurement, communication and control infrastructures.[8] Both, innovative local heating supply with decentralized heat generators, such as heat pumps, and new models in the electricity sector, such as peer-to-peer trading or energy sharing, can be implemented with digital tools.

Without digital infrastructures, neither system control nor complex billing models can be implemented – yet in Germany as only one percent of households are equipped with smart meters. Other countries move faster and show that it works: in Sweden and Italy, the rollout of digital tools for measuring electricity has reached more than 90 percent of households. Other countries are also leading the way in promoting energy communities; in Austria, for example, the government provides regulatory support for energy sharing.

### Briefly Explained

In peer-to-peer trading, producers sell their energy to other consumers. Energy sharing means that citizens finance shared renewable energy systems and consume the electricity generated directly in close proximity. They also purchase energy from the public grid when their own electricity is insufficient.[9]

## Federal government needs a strategy

The legal framework for energy communities in Germany has been too hesitant at federal level in recent years, with individual legal adjustments, while individual state governments and the EU are more clearly encouraging citizens to participate in the energy transition: for example, individual federal states want to introduce participation laws like the one in Mecklenburg-Western Pomerania. The EU has also defined new forms of energy communities in its Clean Energy Package (see box), and its solar energy strategy aims to create at least one energy community in every city with more than 10,000 inhabitants.

These examples show that energy communities and other forms of financial participation by citizens are continuing to develop in Germany. However, the specific role that energy communities should play at national level remains mostly vague – there is no strategy: energy communities have not yet played a significant role in the upcoming decisions on shaping the energy markets.

Research has already demonstrated the positive effects of energy communities, showing why participatory models should play an important role (see graphic). Commons research has identified conditions under which community solutions can have a sustainable impact. From the analysis of the current state of energy communities in Germany and the conditions for success, we derive recommendations for policy makers and associations to enable energy communities to realize their potential in the transformation of the energy system.

This highlights a gap that should be closed: if an active role for energy communities in the energy system is politically desirable, a strategy is needed. There is good theoretical and empirical evidence for the necessity and foundation of such a strategy.

### Three concepts for energy communities under EU law

1. Renewable energy communities (in accordance with the amended Renewable Energy Directive) implement renewable energy projects locally.
2. Citizen energy communities (in accordance with the Internal Electricity Market Directive) can be supra-local associations of citizens and implement projects that involve grid operation or electricity storage in addition to RE.
3. Jointly acting self-consumers (in accordance with the amended RE Directive) are limited to buildings and were introduced in Germany as part of the solar package as a joint building supply.

The first two concepts are transposed into national law differently in the EU member states. This is also due to different traditions of participation in the energy sector.

# Politics does not pursue a clear vision

Various political processes are currently taking place in the energy sector that are relevant to the further development of energy communities. We will take a closer look at four processes and their importance.

## Participation laws are only implemented at state level

Individual federal states, such as Lower Saxony and North Rhine-Westphalia, have passed their own participation laws after the Federal Constitutional Court found the Citizen and Municipal Participation Act in Mecklenburg-Western Pomerania to be in line with the constitution. These federal states agree that local authorities should be required to participate in wind energy and ground-mounted solar projects – not just on a voluntary basis, as provided for in the EEG.

Political actors assess the form and extent of participation differently: energy communities, in which citizens participate financially or work together themselves, are often an option that can be offered by project developers. The role they can play, also in comparison to other forms of financial participation, usually remains vague in the explanatory memoranda. There is still a lack of systematic evaluation of the potential, limitations and impact of mandatory financial participation.

## Municipal heat planning gives test order for integration

The law on municipal heat planning, which came into force at the beginning of 2024, is intended to set the guidelines for a climate-neutral heat supply in all German cities and municipalities. Depending on the size of the municipality, a municipal heating plan must be drawn up by 2026 or 2028. Municipalities can involve local renewable energy communities in the planning, or must do so if their interests are affected, if their involvement adds value to the planning, or if they operate a heating network. In addition, municipalities with a population of 45,000 or more must assess the extent to which renewable energy communities contribute to the implementation of the heat supply. This shows that politicians have recognized the potential of the many existing community heat networks and want to continue to take this into account. However, there is a lack of detail – smaller municipalities in particular would benefit from clearly described design options.

## Solar package expands existing local models of energy communities

The solar package was adopted in April 2024 to accelerate the energy transition. It contains facilitations for the shared use of solar electricity in individual buildings and translates the regulations of the EU Renewable Energy Directive on jointly acting self-consumers into German law. Until now, this has only been possible to a limited extent as tenant electricity, which the package extends to adjacent buildings.

Even if the solar package simplifies processes, the exchange of self-generated energy remains limited to a small area. The legislative package only takes into account regulations that have long been criticized – such as the fact that a communal supply within a house has so far been bureaucratic and expensive. However, the package does not show how a communal energy supply is possible that integrates lower-income households into self-supply. For this, further laws need to be created to enable options such as energy sharing.

## "Climate-neutral electricity system" platform does not include energy communities

In 2023, the Federal Ministry for Economic Affairs and Energy set up the "Climate-neutral electricity system" platform to discuss the future electricity market system with stakeholders from science, business and civil society. The work of the platform was concluded in spring 2024 with a report and an outlook for an options paper on market design in a climate-neutral electricity system. In particular, market instruments for system security or the expansion of renewable energies were discussed. The role of energy communities was only considered in the context of acceptance considerations and not to what extent they could apply the market instruments.

# Three recommendations for making energy communities fit for the future

A look at the political processes reveals that there is currently a lack of an overarching strategy that gives energy communities a clear role in the energy system. Unlike at EU level, there are no clearly formulated and verifiable targets for energy communities at national or federal state level in Germany. Although German policy makers are working on ways to facilitate energy communities in the future, their role in the overall system remains subordinate, making it difficult for them to develop their potential.

**A strategy for energy communities is needed that specifies their role.**

But what framework do energy communities need in order to develop and achieve their positive effects? Energy communities have a certain proximity to the "commons" – resources that are created when actors produce, manage or use common goods. For these, research has identified key success factors or conditions for success[10] that relate to organizational structures within commons communities, on the one hand, and to the institutional relationships with their environment, including technological developments, local to national politics and administration, as well as market conditions, on the other.

A look at the external success factors for commons opens up new possible solutions to strengthen the role of energy communities in this phase of the energy transition. We recommend:

## 1. Firmly integrate energy communities into strategic processes

A strong signal is needed to clarify the role of energy communities in the German energy system. Policy makers should therefore develop an objective and a strategy. Interest groups, energy suppliers, civil society, politics and administration should be involved. One possible format would be an energy community summit. This should clarify the future objectives of the energy communities in the system: is it primarily about expanding capacity, promoting acceptance and participation or also about local energy supply and providing flexibility? This should be followed by changes to local consumption, grid charges and balancing group responsibility.

Processes such as the "climate-neutral electricity system" platform at national level or municipal heat planning at local level should also strategically address the role of energy communities. Such overarching strategies and rules are essential for successful governance. A similar strategy and target development is already partly laid out in European law: EU member states are to record the obstacles and development potential of energy communities and report on the status of energy communities every two years. The appropriate implementation at German level and systematic monitoring still need to be developed by the federal government.

**A new narrative is needed to make energy communities broadly effective.**

The expansion of renewable energies through energy communities to date has been shaped by pioneers with intrinsic ecological motivation who have had to assert themselves in the face of resistance. This motivation is reaching its limits. Energy communities are more than just a niche for ecological pioneers with the necessary financial resources – they accelerate the energy transition and have great potential for society as a whole. Spreading a new narrative is a communication task for associations, energy suppliers, civil society and politicians at local, regional and national level.

## 2. Create incentives for community models with a new regulatory framework

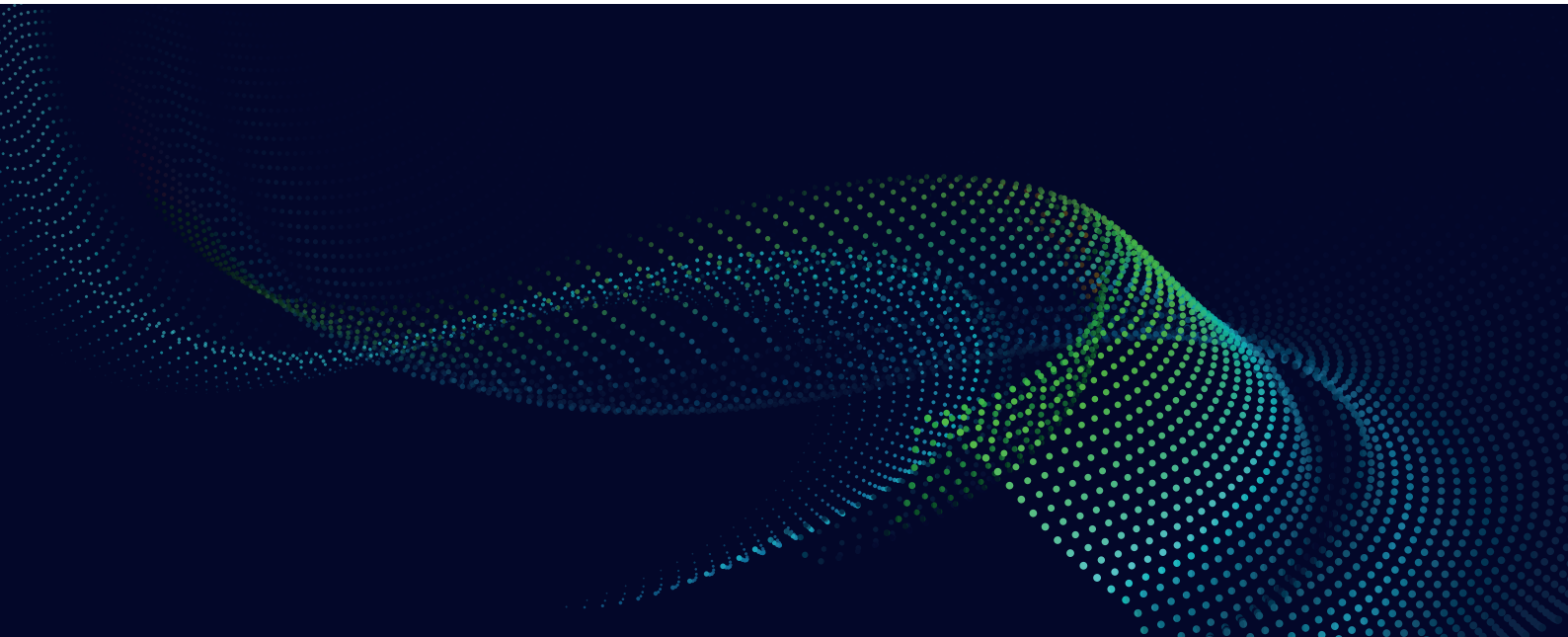
The legal and economic framework for energy communities must become simpler and more attractive. Their achievements in the expansion of renewable energy must be recognized, i. e. taken into account in regulation, and disadvantages and bureaucratic hurdles removed. Their social effects, such as increased acceptance, transfer of knowledge or strengthening of the local community, should also be recognized in this way. All forms of energy communities should be treated on an equal footing with other supply models in regulatory and systemic terms in order to benefit from the many advantages. For example, local consumption should be encouraged, also in cooperation with other local actors such as municipal utilities.

The existing legal framework for energy communities at EU and federal level primarily reflects the beginnings of the concept, which started out as a financing community. However, a framework and rules are needed that do not limit energy communities to financial participation or to heat or electricity communities. The diversity of models and how energy can be used locally and systemically in a meaningful way must be given greater consideration, for example as part of a long-discussed grid fee reform. In this way, energy communities can be redefined at a regulatory level. Until then, an important step is to enable energy sharing in Germany in accordance with European directives. Germany can learn from other countries such as Spain, Italy and Austria.

## 3. Support local energy communities

In order for energy communities to become established locally, they need functioning "ecosystems" involving local key players – such as municipal suppliers, multipliers and, where applicable, established energy players. In the promotion of structures for energy communities, the focus to date has primarily been on economic incentives as pull instruments. Push instruments can supplement this in order to promote integration into local structures. As local actors are needed for implementation, municipalities or municipal utilities should become active: they should provide information about energy communities, initiate them themselves and thus strengthen their local expertise and take responsibility. If they support energy communities professionally, this could lead to energy communities opening up a broader field of activity, for example in combination with heating and transport. The federal states should implement such an information obligation. In order for municipal utilities to play a more active role, the municipalities themselves need to help shape the tasks and business areas of their municipal companies.

In order to strengthen energy communities nationwide, federal and state governments should also expand networks and create contact points, e. g. along the lines of the Austrian coordination office for energy communities. Such multipliers bring together initiators, the population, companies and other stakeholders and provide assistance with the complex regulations. The federal government, such as the Federal Ministry for Economic Affairs and Energy or the Federal Ministry for the Environment, should support the establishment and expansion of such contact points and provide funding for them.



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