



Collection of best internal operation and governance practices of energy communities

(D.1.3.1)

Document control sheet

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Short description
This document is an outline of the best internal operational and governance practices of energy communities from majority of the countries participating in the NRGCOM project. The collected ideas and good practices will be further processed in the joint design process of A.1.5 and will form the basis for the development of the motivation programme under Specific Objective 2.

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Imprint

This document is issued by the consortium formed for the implementation of the NRGCOM project by the following partners:

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- **PP3 South Bohemian Agency for Support to Innovation - JAIP (CZ)**
- **PP4 Research Burgenland Ltd.**
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- **PP6 Energy Agency of Savinjska, Šaleška and Koroška Region (SI)**
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Disclaimer:

The following document has been developed as a collection of analyses of the best internal operational and governance practices of the energy communities of the participating countries. These analyses have been carried out by the respective partners with the support and guidance of the PP6 KSENA. KSENA does not take responsibility for the accuracy and completeness of these country-specific analyses.

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Introduction

About the project

The Danube Region relies heavily on imported, fossil-fuel energy sources, which raises environmental, efficiency and security concerns. The concept of renewable energy communities (RECs) is not widely known in the region, and their operation is often hampered by legal, internal operational, infrastructural or technical barriers.

The overall goal of NRGCOM is to enhance the spread of energy communities by creating an appropriate environment for their proper functioning in the Danube Region. NRGCOM builds on a multilevel approach, gathering 13 Project Partners (PPs) +14 Associated Strategic Partners (ASPs) from 12 countries, including local / regional / national authorities, energy, development and sectoral agencies, one EGTC, NGOs, interest groups, higher education and research institutions and a renewable energy source service provider.

Within the project, the partners will review the legal frameworks, analyse the operation systems and governance techniques of existing RECs and collect best practises in the subject, in order to develop policy recommendations to remove the bottlenecks encountered, and jointly design a model and prepare a strategy for the creation of proper conditions for RECs establishment in the Danube Region. Through public awareness raising actions, the partnership will enhance the spread of the concept in their countries.

By encouraging and supporting local self-production and consumption, NRGCOM will make a great contribution to the transition to renewable energy sources in the DRP area.

The need for transnationality is underlined by the diversity of partner countries' experiences with renewable energy communities: while in Austria, Germany (with more than 1500 RECs), Slovakia or Slovenia, the legal framework for renewable energy communities is well-established and RECs have been developing for many years, in Montenegro, Croatia, the Republic of Serbia and the Republic of Moldova there are no functioning energy communities, although the legal environment is relatively established. There are REC initiatives in the Czech Republic, Bulgaria, Romania and Hungary, but there are many obstacles hindering their proper functioning. Thus, NRGCOM not only aims to expand knowledge on an external level but builds on peer learning between the partners as well. The partners that need expertise and suggestions will be able to learn from partners from more experienced countries within the project.

The project builds on three main objectives: 1) initiating the establishment of the proper conditions for energy community in the Danube Region, 2) raising awareness on the importance of the transition to renewable energy sources (RES) and the community-led energy initiatives, 3) supporting energy communities to operate properly and efficiently in the Danube Region.

The project will explore and propose legal solutions, and analyse various operational models, in order to promote the creation of the necessary and appropriate conditions for the creation of energy communities. In order to raise awareness on current energy challenges in the Danube Region and to achieve the most widespread change possible, the partners will address and involve various authorities and agencies, municipalities, members of energy communities, NGOs, SMEs, operators and service providers, as well as the general public, and develop and test incentive

methodologies to enhance behavioural change. PPs will educate and train the target audience to become environmental and energy-conscious and to set up RECs.

To spread the concept across the region, PPs will also create a 'REC ambassadors' network, in order to assist and mentor the target groups selected to be subject of pilot actions aiming to set up and improve the functioning of RECs. Based on the results, the partners will develop a White Paper to provide guidance on how to professionally create the right conditions, encourage the population and effectively create, manage and run an energy community in the Danube Region, addressing legal, social, infrastructural/technical, economic, and sustainable aspects.

The ultimate goal of the project is to provide the Danube Region with proper environment and informed society, where community renewable energy initiatives can be launched and expand unhindered, thus facilitating the green transition and increasing energy efficiency, contributing to the achievement of the decarbonisation climate targets and enhancing energy security.

About the activity

The activity A1.3 aims to examine the organisational structures decision-making processes and governance techniques employed by energy communities. In order to prepare Collection of best internal operation and governance practices of energy communities, members of these energy communities operating in the participating countries (having experience in RECs) were invited to the national workshops and shared their personal roles, efforts, goals and their expectations and motivations set back when they joined an energy community.

Moreover, the partners participating in this activity have gathered information on the community building and democracy techniques and principles - transparency, accountability, participation, fairness, and inclusivity - of RECs to assess their impact on good governance. The aim was to assess how well the energy communities align with the principles and identify the areas for improvement.

Decision-making processes within energy communities, was also be examined, looking at how community members are involved in decision-making, the mechanisms for consensus-building, and the extent of democratic participation.

The deliverable of this activity is the Collection of best internal operation and governance practices of energy communities from the partner countries. The good practises and ideas collected and be further processed in the joint design process of the activity A.1.5. The results will also form the basis for the motivational programme developed under the scope of activity A.2.2 under Specific objective 2.

Method

The aim of this deliverable, as outlined above, is to present the best internal operational and governance practices of the energy communities from the participating countries. This was done by analysing the community cohesion, organisational structures, decision-making processes and governance techniques used by the energy communities. The results for each participating country were provided by the project partners. Based on this, best practices were identified in different areas such as community cohesion, building trust, role definition, target audience, successful governance, decision making, problem solving, well operated energy community, stakeholder engagement and motivation, goals and expectations of members.

General approach

The first step was to define the relevant topics to be assessed in the analyses of the best internal operation and governance practices of energy communities. A questionnaire was prepared by KSSENA to obtain the results in each country. The national language workshops (1/participating project partners) were held in situ or online, depending on the possibilities and capacities of the project partners and their geographical location. Partners received a preliminary agenda for the workshop. Members of energy communities operating in the participating countries (with experience in RECs) were invited to the national workshops and shared their personal roles, efforts, goals and their expectations and motivations for joining an energy community. Based on the input from the workshop, the project partners filled in the national questionnaires, which served as a basis for the Collection of best internal operational and governance practices of energy communities (D.1.3.1). Finally, a collection of best practices for different areas related to the internal operation and governance of energy communities was identified.



Figure 1: Document creation process

Best practices

Community cohesion

Building and maintaining a cohesive energy community is critical to a successful transition to renewable energy. Energy cooperatives are central to this effort, facilitating community ownership and participation in renewable energy initiatives. The benefits go beyond financial gains for members and communities, fostering a sense of collective responsibility for renewable energy projects. Building and maintaining a cohesive community, especially in the context of energy communities, requires strategic planning and the active participation of all members. Inclusivity and diversity are critical to building a strong community. It is essential to create an environment where everyone develops a sense of belonging and engagement, and feels welcome and valued, regardless of their background. Embracing diversity means encouraging people from all walks of life to participate and contribute. This not only enriches the community with different perspectives, but also strengthens its resilience and adaptability.

First, a full understanding of the legal and regulatory landscape is essential. Establishing a legally recognised entity, such as an energy cooperative or association, with clearly defined objectives, membership criteria and operational procedures is imperative.

A shared vision and common goals should be developed and established to align efforts across the community and enable members to identify with it. Creating and then communicating this vision sends a clear message to the community that cohesion is at the top of the local agenda. A vision that clearly articulates and focuses on the challenges and opportunities facing the community is essential. The community should have a clear understanding of its goals, such as reducing energy costs, increasing the use of renewable energy or improving local energy resilience. Regular communication ensures that all members are aligned with the community's vision and understand their role in achieving these goals.

Effective communication is therefore the backbone of a cohesive community. Transparency and openness in all communications ensure that members feel informed and involved in the decision-making process. It is important that promises are kept and that there is consistency in action and communication. Involving all stakeholders in the planning process through regular gatherings such as meetings, workshops and events helps to gather different perspectives, address different needs, explore ideas and facilitate collective decision-making. It's important that members understand the value of their participation and the impact of their contributions. Opportunities for active participation ensure that everyone feels heard and valued, and foster a sense of ownership and commitment. Transparent communication should be encouraged to keep everyone informed of progress and to build trust. This includes information about challenges, issues and barriers. Establishing clear channels for feedback allows members to voice their opinions and concerns, reinforcing their sense of being heard and valued.

Engagement and participation from various stakeholders are vital. This entails reaching out to local residents, businesses, and governmental bodies early in the process. Hosting public forums, workshops, and consultations facilitates the collection of diverse perspectives and ensures broad community buy-in. The formation of representative committees or working groups further fosters

inclusivity. Offering flexible membership options to attract a wide range of participants, including individuals, businesses, and government entities, enhances community engagement.



Figure 2: Cohesion of the energy community

Ongoing education and communication play a pivotal role in maintaining a cohesive energy community. Continuous learning and improvement through the provision of training, mentoring and other forms of support enables members to grow and contribute effectively to community development. A culture of learning and innovation is fostered by keeping members informed of best practices in community building and management and encouraging them to share their knowledge and experience. This investment in members' development strengthens their commitment and loyalty to the community. Access to resources and support, including funding opportunities, technical assistance and expert advice, helps members overcome challenges and find solutions to energy-related problems. Support from local people, authorities, and in particular community representatives, builds confidence in the energy community's projects, while community engagement activities such as small-scale projects or field trips help to build camaraderie among members and reinforce common goals. In addition, encouraging members to work together through joint projects and shared responsibilities can strengthen bonds and community cohesion. Creating such opportunities for interaction builds relationships, fosters a sense of belonging and camaraderie, and thus supports community building.

To maintain community cohesion, roles and contributions need to be recognised and celebrated. It is important to establish leadership and governance structures with defined roles and

responsibilities, such as a steering committee, working groups and a general assembly, which will take responsibility for management and governance to establish links and take responsibility for managing and driving through the changes needed to build a cohesive community. Active leadership is critical to guiding the community and ensuring its smooth functioning. Committed leaders who are passionate about the community's vision and who are accessible and responsive to members' needs play a key role in maintaining cohesion. Leaders should empower members by fostering a sense of ownership and creating opportunities for them to take initiative and lead projects. From this perspective, maintaining transparency in all operations, including financial management and decision-making processes, with regular reporting and open access to information, is crucial. In addition, recognising and rewarding members' efforts and achievements fosters a positive environment and motivates continued participation. Celebrating milestones and successes together strengthens the bonds between members and reinforces their sense of belonging. Constructive conflict resolution is essential to maintaining harmony within the community. Addressing conflict promptly and fairly through mediation and other strategies ensures that issues are resolved amicably and prevents discord from escalating. This approach helps to maintain trust and cooperation among members.

Finally, fostering a positive and supportive environment is essential to maintaining a cohesive community. Encouraging positive interactions and discouraging negativity and toxicity creates a safe space where members feel comfortable expressing themselves. Encouraging positive interactions and discouraging negativity and toxicity creates a safe space where members feel comfortable expressing themselves. This supportive atmosphere increases members' sense of belonging and commitment, contributing to the long-term cohesion of the community. By implementing these strategies, a cohesive community can be built and maintained, providing a supportive and enriching environment for all its members.

Building trust

Building trust in a community is essential for its coherence and long-term success. Similar to community cohesion, the process of building trust within an energy community rests on the following key pillars: transparent and consistent communication, inclusiveness and fairness, shared vision, defined roles and responsibilities, reliability.

Transparent, honest and open communication between leaders and members about the community's activities, goals, plans, decisions and finances creates an environment of trust and builds credibility. Regularly sharing information through meetings, public forums, email lists and online platforms to ensure that members are kept up to date with project progress fosters an environment of openness and helps to clarify operations and build trust among community members. When members are kept informed of ongoing developments, they feel more connected and are more likely to trust the community. Being honest about challenges and setbacks, rather than hiding them, builds credibility and creates a sense of stability and reliability. Consistency in communication is also important. Members should know where and how to get information and expect timely responses. Regular updates on progress, obstacles and future strategies are therefore essential to keep everyone informed.

Another aspect is an active community involvement. Involving local residents, businesses, and authorities in planning and decision-making processes ensures that different perspectives are

taken into account. Creating opportunities for active participation, such as forming working groups, allows community members to contribute their ideas and feedback, fostering a sense of ownership, respect and trust. When individuals feel valued and have a stake in the project, they feel more invested, and trust naturally develops. The earlier people are involved, the more powerful their contributions can be. It is important to establish fair and transparent processes for decision-making and resource allocation, and to ensure that all members have equal opportunities to participate in and benefit from community activities. When members have a say in decisions that affect them and reflect their needs, they are more likely to feel valued and appreciated. Empowering members to acquire knowledge on issues related to the energy community enables them to feel confident and competent in contributing to its growth and development. Consistent action helps to build a reliable and trustworthy reputation. In addition, celebrating successes and learning from failures can also foster a culture of trust and a sense that members can overcome challenges together. Regularly recognising achievements and expressing gratitude for members' efforts shows that the community values its members. This recognition can be formal, through awards or recognition, or informal, through personal thanks and public praise. Personal relationships are the foundation of trust. Opportunities for social interaction and collaboration, such as community events, workshops, informal gatherings, and volunteer activities, further build trust and cooperation among members. These relationships foster empathy, understanding and mutual support.

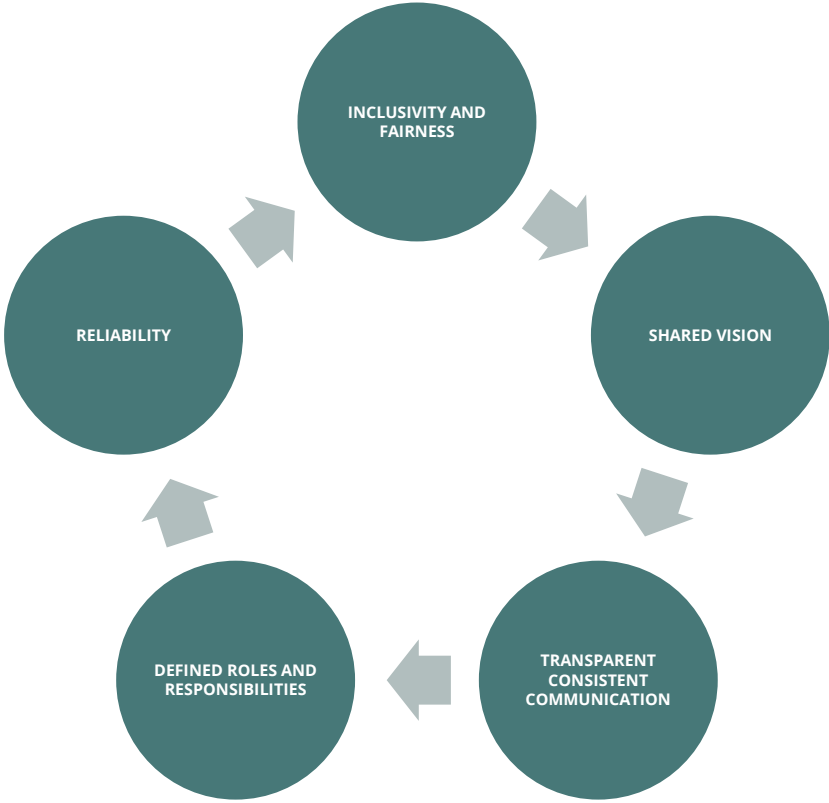


Figure 3: Building trust in the energy community

In addition, the promotion of a sense of shared vision and community spirit also builds trust. Members need to understand the community's goals, whether they are to reduce carbon emissions, achieve energy independence, create local jobs or simply gain financial benefits. A well-defined vision, aligned with the values and aspirations of community members, creates a sense of purpose and direction. Emphasising the collective long-term benefits and highlighting the environmental, economic and social benefits of the energy community demonstrates the positive impact of the project and helps to create a strong sense of community. Sharing success stories and case studies from other energy communities illustrates the potential positive impact and keeps the community motivated and engaged.

Strong and inclusive governance is also critical to building trust. Clear governance structures with defined roles and responsibilities ensure accountability. Leaders and members should act consistently with the laws, community's values and principles, and demonstrate competence in their roles by successfully completing tasks, delivering on promises, and maintaining high standards of quality. Reliability, or the ability to consistently deliver on commitments, reinforces the belief that the community can depend on its members and leaders. When mistakes are made, acknowledging and correcting them promptly builds trust. Regularly reviewing and updating governance practices helps to keep them effective and inclusive. Encouraging diverse representation in leadership positions reflects the demographics and interests of the community and fosters a sense of fairness and inclusiveness. In addition, democratic and transparent decision-making processes ensure that all members feel involved and heard. Responding promptly to questions and concerns shows that leadership values members' input. This responsiveness reinforces that their voices matter and that leadership is attentive and caring. Clear expectations help avoid misunderstandings and conflict. Defining roles, responsibilities and community guidelines ensures that everyone knows what is expected of them. This clarity fosters a sense of fairness and predictability, essential components of trust. It is important to note that the irreplaceable role of the state and its competent authorities must also be taken into account when talking about building trust in the energy community. Frequent changes in legislation with structural modifications create mistrust rather than trust, therefore a well-defined legal framework is a prerequisite for building trust in the energy community.

Reliable performance is one of the key pillars for establishing credibility and building trust. This starts at the planning stage: setting smart goals and implementing a reliable, robust action plan facilitates trust in both the preparation and implementation processes. Ensuring quality services and solutions that consistently meet the needs of the community. Meeting project milestones and commitments demonstrates the competence of the community's management and technical teams. Ensuring that energy systems are installed and maintained to a high standard, providing a consistent and reliable energy supply, builds confidence. Dealing with any technical issues promptly and effectively further builds community confidence in the project.

By implementing these strategies, a community can build and maintain a foundation of trust. This trust enables open communication, collaboration and a strong sense of community, which ultimately contributes to the long-term success and cohesion of the community.

Role definition

The identification and definition of roles in the development of an energy community is essential to ensure effective cooperation, clear communication and the achievement of common goals. The first step is to identify the core functions and overarching objectives of the energy community. Clearly defined objectives will guide the creation of roles in line with these objectives. For example, if the community aims to implement solar energy solutions, roles related to project management, technical expertise and community outreach will be essential.

From there, roles can be defined by summarising responsibilities and defining categories. Tasks, efforts, responsibilities, skills required, etc. should be described in detail for each role, as clearly defined roles help to distribute responsibilities, utilise individual strengths and promote accountability. It is important to consider the different skills, experiences and interests of community members. Assigning roles based on individuals' strengths, expertise and interests can help ensure that tasks are carried out effectively and that responsibilities are shared among members. It is also important to set clear goals and expectations for each role, and to provide training and support for community members to carry out their responsibilities successfully. Effective cooperation and coordination among members is essential for building a cohesive and productive energy community. Involving (potential) community members in this role definition process, for example through workshops, can help them understand the responsibilities of each role and inspire them to take up a position. Conducting surveys to gather information about members' backgrounds, skills and interests can help to understand the collective skills of the community and therefore help to identify any gaps that need to be filled, either by recruiting new members or by providing training.

Title	• A clear and concise title that reflects the role
Responsibilities	• Specific tasks and duties associated with the role.
Skills and Qualifications	• Required skills, qualifications, and experience
Time commitment	• Expected time commitment and duration of the role
Reporting structure	• Information about who the role reports to and how it fits within the overall organizational structure

Figure 4: Role definition example

Example list of key roles essential for the functioning of the energy community:

- **Leadership roles:** Leadership roles include setting agendas, facilitating meetings, managing projects, and representing the community in external engagements.
- **Project Manager** - Oversees the planning, execution, and completion of energy projects. Ensures that projects stay on schedule and within budget.
- **Technical Expert** - Provides technical knowledge and support for energy systems, such as solar panels, wind turbines, or energy storage solutions.
- **Finance Coordinator** - Manages the finances of the community, including budgeting, fundraising, and financial reporting.
- **Outreach Coordinator** - Engages with community members, stakeholders, and the public to raise awareness, builds support and encourages participation.
- **Regulatory Specialist** - Ensures compliance with local, state, and federal regulations related to energy projects and initiatives.
- **Data Analyst** - Collects and analyses data to monitor and improve the performance of energy systems and initiatives, provides insights for improvement.

Once these roles have been defined, it is important to establish mechanisms for collaboration and communication between them. Regular meetings, both formal and informal, help to ensure that everyone is on the same page and working towards common goals. In addition, project management tools and communication platforms support coordination and information sharing, prevent misunderstandings and ensure that issues are addressed promptly. A regular rotation of roles within the community should also be considered. This allows for timely adjustments to roles and responsibilities and helps to distribute responsibilities, prevent burnout, and develop members' skills. Flexibility is essential as projects progress and new challenges or opportunities arise. By following these steps, an energy community can clearly and effectively define roles and ensure that all members are aligned, motivated and working together towards the community's energy goals.

In addition to defining internal roles, it is also important to understand the legal framework in the country, the different stakeholders and their potential contributions. The federal government, state governments, regional governments, municipalities and a number of organisations play a crucial role in this process. Each of these actors is responsible for regulating different sectors and areas that have a direct impact on the development and operation of energy communities. The federal government provides the regulatory framework, state governments support additional policies and R&D, municipalities provide land, infrastructure and financial support, while multi-utilities and cooperatives bring technical expertise and community engagement. Organisations and associations facilitate policy advocacy and knowledge sharing, creating a cohesive ecosystem for the development of energy communities.

This layered approach ensures that the implementation of renewable energy projects aligns with both national and local priorities, addressing regional specificities and optimizing resource use.

Target audience

For a well operated and governed energy community, the target audience is diverse and includes different groups of stakeholders who have an interest in, benefit from or can contribute to the community's goals of sustainability, energy efficiency and local energy production.

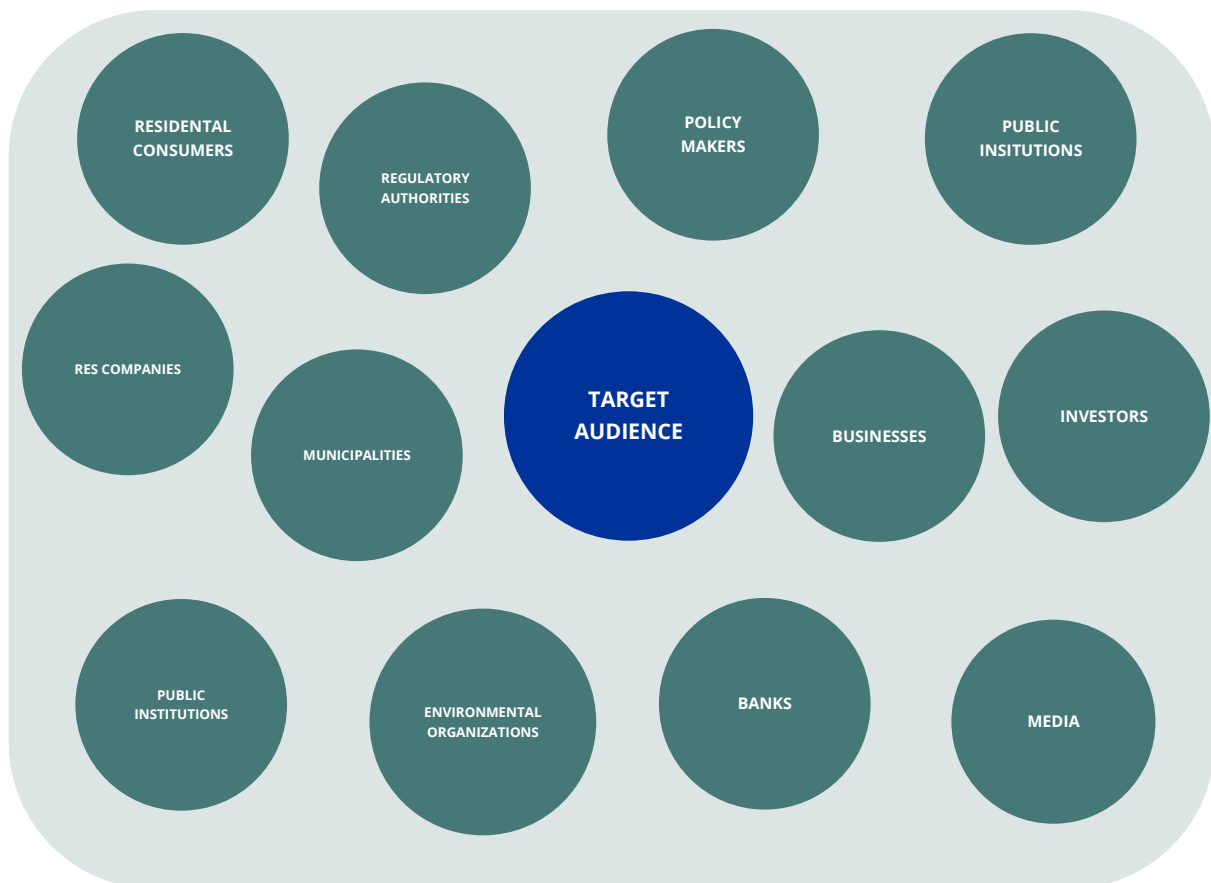


Figure 5: Target groups for energy communities

Residential consumers are a primary target audience for energy communities, as they benefit directly from locally produced renewable energy. Homeowners are a primary target group because they have a vested interest in reducing energy costs, increasing property value, and contributing to environmental sustainability. They are often keen to adopt renewable energy solutions such as solar panels and energy efficient appliances and become energy producers. Tenants, who do not own property, are interested in lower utility bills and a greener living environment. Involving tenants in community energy initiatives can improve their quality of life and promote sustainability in their homes.

Businesses, including small and medium-sized enterprises (SMEs) and larger corporations, are important stakeholders in energy communities. Local businesses, especially SMEs, benefit from reduced energy costs and enhanced corporate social responsibility profiles. They are often looking for ways to improve their bottom line while demonstrating their commitment to sustainability. Larger businesses and industrial entities within the community can have a significant impact and

benefit from local energy projects. Their involvement can lead to significant energy savings, meeting their sustainability goals, reducing operating costs and contributing to the overall energy mix of the community. In addition, companies can participate in demand-side management programmes, energy efficiency initiatives, and collaborative projects with energy communities, fostering innovation and economic development.

Investors, including institutional investors, private equity firms and impact investors, play an important role in financing energy community projects. Investing in renewable energy infrastructure offers attractive financial returns, long-term stability, and positive social and environmental impacts. Institutional investors, such as pension funds and insurance companies, can provide capital for large-scale renewable energy projects, while impact investors prioritise investments that generate measurable social and environmental benefits in addition to financial returns.

Municipalities and local governments are crucial for policy support, funding, and regulatory compliance. Their support and involvement can drive the success of energy initiatives and ensure they are aligned with wider city or regional sustainability goals. Local influencers and leaders who want to improve energy security, reduce carbon emissions and promote local economic development through community energy projects, including neighbourhood association leaders and local activists, play a critical role in mobilising support and participation from the wider community. Local governments can provide land and infrastructure for renewable energy projects, create supportive planning regulations, and offer financial incentives for community initiatives. In addition, municipalities can procure renewable energy from local energy communities for public buildings, street lighting and municipal facilities, thereby promoting energy sovereignty and regional economic development.

Policymakers at the local, regional, and national levels shape the regulatory framework and provide support for energy communities. Policies such as feed-in tariffs, investment incentives and renewable energy targets influence the viability and attractiveness of community energy projects. In addition, policymakers can enact legislation to facilitate citizen participation, promote energy democracy, and remove barriers to the development of renewable energy infrastructure.

Regulatory authorities, including energy regulators and environmental agencies, oversee the compliance of energy communities with legal and technical standards. Regulators ensure fair market competition, grid access, and consumer protection in the energy sector. Moreover, regulatory agencies issue permits, licenses, and certifications for renewable energy projects, ensuring safety, environmental sustainability, and social responsibility.

Environmental organisations that focus on promoting sustainability and environmental protection can support and participate in community energy initiatives. Typically, non-profit organisations focused on environmental protection and sustainability are always supportive of these types of projects. They can provide expertise, advocacy, and assistance with community education and engagement.

Public institutions such as schools, hospitals, utility companies are also impacted on high energy bills and often don't have the budget for investment in energy efficiency. They can serve as key partners and beneficiaries, often with significant energy needs that can be met more sustainably through community energy projects. Schools also have a problem that they are not open during the summer months and if they have solar panel installed, they have surplus of production during

these months. Energy communities could be a good tool to attract investments in RES and efficient way to use the produced energy.

RES companies and professionals specializing in renewable energy technologies (solar, wind, biomass) are essential for implementing technical solutions and providing the necessary infrastructure.

Banks and financial institutions are important for providing funding, loans, and financial planning services necessary for large-scale energy projects.

Media and influencers have a role in gaining support and participation from the whole community and dissemination of results to wider area.

Having an active and diversified community behind an energy community is crucial for several reasons:

- **Support and Engagement:** An active community provides support and engagement, driving initiatives forward.
- **Resource Pooling:** Active community members can contribute resources, skills, and knowledge to benefit the community as a whole.
- **Sustainability:** Active participation fosters a sense of ownership and responsibility, promoting long-term sustainability.
- **Advocacy:** A strong community can advocate for policies and practices that benefit the energy community and the environment.

Successful governance

Transparency in decision-making is essential. Establishing and communicating clear rules and regulations governing the community's operations, such as bylaws, codes of conduct and conflict resolution mechanisms, are necessary to manage challenges and build trust. Community members need to know in a timely manner how decisions are made, who makes them, and what criteria are used. Meeting agendas, minutes and financial statements should be available to all members. Transparency builds trust and accountability because members can see that decisions are being made fairly and in the best interests of the community.

Clear structures, characterised by well-defined processes and delineated responsibilities, provide a framework within the community and ensure its effective operation. All members should understand their role within the community and comply with all relevant local, national and EU laws, regulations and standards, whether they are leaders, technical experts, financial managers or ordinary members. Clear role descriptions help to prevent conflict, ensure accountability and promote efficient operations. Identifying and managing risks, whether financial, operational or environmental, is also essential. This includes regular assessments, contingency planning and the implementation of risk mitigation strategies. Regular monitoring and evaluation of activities and projects is essential for continuous improvement. This involves tracking progress against objectives, assessing the impact of initiatives and making data-driven decisions. Feedback loops allow the community to learn from experience, adapt to change and improve its practices.

A well-governed energy community embodies a blend of transparent operations, democratic principles, effective leadership, robust stakeholder engagement and shared vision, all framed within a supportive legal and regulatory structure.

Effective leadership is essential to steer the community towards its goals. Experienced leaders should be elected or appointed on the basis of merit, skills and commitment to the community's vision. They should demonstrate integrity, transparency, and the ability to inspire and mobilise members. Leadership roles include setting agendas, facilitating meetings, managing projects, and representing the community in external engagements. Sound financial management ensures the sustainability and growth of the energy community.

This includes budgeting, accounting, and auditing processes that are transparent and accountable. Sources of funding, whether from membership dues, grants or other sources, should be managed prudently to ensure that resources are used efficiently and for their intended purposes. To ensure continued leadership effectiveness, ongoing training and development opportunities should be organised for leaders to enhance their skills and adapt to evolving challenges.

Active and inclusive participation allows people's needs to be taken into account and possible concerns to be addressed. An inclusive approach not only ensures that the community's actions are aligned with the interests of its members, but also fosters a sense of ownership and commitment among participants. Involving members in the decision-making process can be achieved through regular meetings, consultations, voting mechanisms and open forums where members can voice their opinions and concerns. An inclusive approach ensures that different perspectives are considered, leading to more robust and equitable outcomes. Community engagement and education are fundamental aspects of good governance. Providing members with information and resources on energy issues, sustainability practices and community projects encourages informed participation. Engagement activities such as workshops, seminars and social events help to build a cohesive and knowledgeable community. High ethical standards and accountability are non-negotiable in a well-managed energy community. This includes integrity, fairness and respect in all interactions and decisions. Accountability mechanisms, such as regular reporting, audits and grievance procedures, ensure that leaders and members are held accountable for their actions.

Finally, a shared vision provides direction and purpose to guide the community's actions and decisions. A well-managed energy community starts with a clear vision and set of goals, including long-term objectives for energy production, consumption, sustainability and community benefits. Guided by the goals set, management can more easily define the activities and tasks to be carried out by the operational bodies.

Decision making

Implementing inclusive governance and actively involving participants in decision making and consensus building is essential to fostering a sense of ownership and commitment within an energy community and is therefore critical to the success of an energy community. This structure ensures that all members have a voice in the community's decisions. Typically, the community will establish a governing body, such as a board or committee, which includes representatives elected by the members. These representatives are responsible for bringing the views and concerns of their constituents to the decision-making table.

Effective strategies for successful decision making in energy communities:

- **Democratic Processes**
 - **Voting Systems:** Implementing democratic voting systems for major decisions. This can include online voting platforms to ensure ease of access and participation. Important decisions, such as approval of new projects or changes in governance, are often put to a vote. Each member usually has an equal vote, ensuring that all voices are heard. Collaborative decision-making processes that take into account the needs and preferences of all participants can lead to more inclusive and sustainable outcomes for the energy community.
 - **General Assemblies:** Holding regular general assemblies where members can voice their opinions, vote on key issues, and elect representatives.
- **Collaborative Platforms**
 - **Online Forums:** Facilitation of ongoing discussion and feedback from members through online forums and social media groups. This ensures continuous engagement and transparency.
 - **Workshops and Focus Groups:** Organization of workshops and focus groups to discuss specific issues in-depth, brainstorm and develop consensus on complex topics. Workshops and focus groups can be instrumental in exploring complex issues and generating innovative solutions.
- **Feedback Mechanisms**
 - **Surveys and Questionnaires:** Regular use of surveys and questionnaires to gather feedback from members on various aspects of the community's operations and projects. These tools are particularly useful for reaching a broad segment of the community quickly and efficiently.
 - **Suggestion Boxes:** Implement both physical and digital suggestion boxes where members can anonymously submit their ideas and concerns.
- **Inclusive Representation**
 - **Diverse Committees:** Formation of diverse committees that include representatives from different demographic groups and sectors. These committees can focus on specific areas such as finance, operations, and community engagement.
 - **Youth and Minority Inclusion:** Active encouragement of participation from youth and minority groups to ensure their perspectives are included in decision-making.

It is important to remember that consensus building is a collaborative process that seeks to find common ground and reach agreements that are acceptable to all members. A number of techniques can be used to make this process easier:

- **Facilitation:** Skilled facilitators can guide discussions, helping to manage conflicts and ensure that all voices are heard. Facilitators play a neutral role, focusing on the process rather than the content of the discussion.
- **Deliberation:** Deliberative processes encourage members to consider different perspectives, weigh the pros and cons, and work towards mutually agreeable solutions. This method emphasizes dialogue and understanding.
- **Consensus Workshops:** These workshops are designed to help groups reach consensus on specific issues. Participants engage in structured discussions to identify shared values and common interests, ultimately developing solutions that everyone can support.

As mentioned above, transparent communication is essential to build trust and ensure that all members are aware of decisions and their implications. Regular updates through newsletters, emails and online platforms keep members informed about ongoing projects, financial status and upcoming decisions. Transparency ensures that members feel involved and aware of the direction of the community. Empowering committees and working groups allows for more specialised and focused decision-making. These groups, made up of volunteers or appointed members, work on specific tasks or projects, such as renewable energy installations, educational initiatives or financial planning.

By delegating responsibility, the community can draw on the expertise and interests of its members, fostering greater engagement and efficiency. Feedback and accountability mechanisms ensure that decision-making processes remain responsive and fair. Regular feedback sessions allow members to express their satisfaction or concerns about decisions and their implementation. Accountability measures, such as regular reporting and audits, ensure that leaders and committees adhere to the community's values and goals. Celebrating successes and learning from failures is part of a healthy decision-making process. Recognising achievements fosters a sense of accomplishment and unity, while analysing setbacks provides valuable lessons for future decisions.

Example: Germany

Participants in energy communities in Germany are intricately involved in decision-making and consensus-building processes, fostering a collaborative and democratic environment. The German legislation on cooperatives mandates a structured governance framework, ensuring that all members have a voice and can contribute to the cooperative's direction and operations. This framework comprises an Assembly of Members, a Board of Directors, and, typically, a Supervisory Board, with clearly defined roles and responsibilities that facilitate effective participation and oversight.

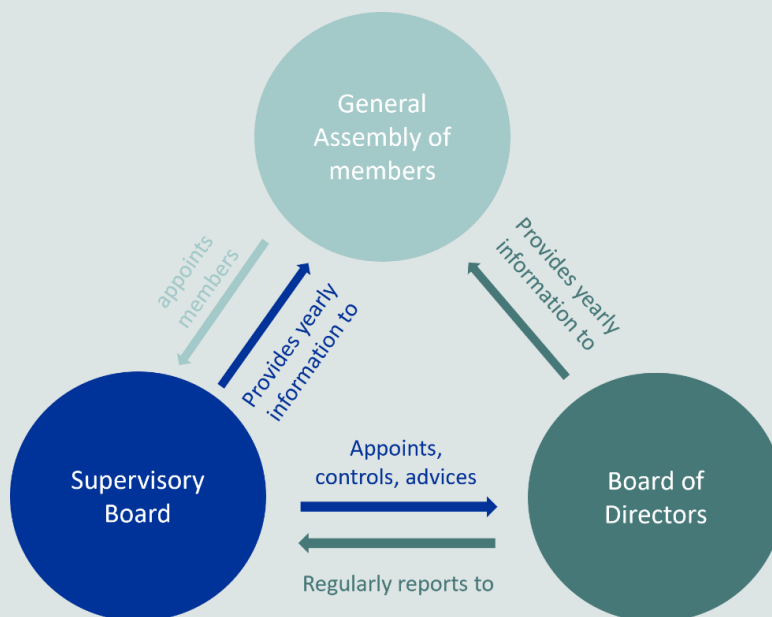


Figure 6: Internal management model of energy cooperatives

The Assembly of Members, which follows the principle of ‘one-person-one-vote,’ serves as the primary democratic forum within the cooperative. This principle ensures that each member has an equal say in crucial decisions, reinforcing the cooperative’s democratic ethos. The Assembly’s powers include deciding on the cooperative’s statutes, its objectives, and the allocation of the net annual profit. Although its influence on day-to-day operations is limited, the Assembly plays a vital role in setting the strategic direction and overarching policies of the cooperative. This inclusive approach ensures that all members, regardless of their investment size or status, can contribute to the cooperative’s long-term vision.

The Assembly of Members also has significant responsibilities in appointing the Supervisory Board, which in turn appoints the Board of Directors in most cases. Analysis of cooperative statutes indicates that in 81.6% of cases, the Supervisory Board appoints the Board of Directors, with the right to dismiss the Board immediately under 78.2% of statutes. This arrangement underscores the importance of the Supervisory Board in maintaining accountability and ensuring that the Board of Directors operates in line with the cooperative’s goals and member interests. In fewer cases, around 17.9%, the Assembly directly appoints the Board, and sometimes, along with the Supervisory Board, holds the authority to dismiss the Board, further ensuring that members retain control over leadership appointments and dismissals.

The Supervisory Board, appointed by the Assembly, acts as a crucial intermediary between the members and the Board of Directors. It monitors the Board's activities, ensuring compliance with the cooperative's statutes and policies. The Supervisory Board's oversight functions include reviewing financial statements, auditing processes, and overall performance evaluations. This body plays a pivotal role in safeguarding the cooperative's integrity and transparency, providing a layer of accountability that is essential for maintaining member trust and engagement.

For smaller cooperatives, those with fewer than 20 members, the legislation allows for a simplified governance structure, foregoing the Supervisory Board and operating with a single Board of Directors. This streamlined model can be more practical for smaller entities, enabling swift decision-making while still upholding democratic principles through direct member involvement in critical decisions. In civil partnerships or small energy communities, decision-making processes are even more directly participatory. Here, members are personally liable, and decisions must be made unanimously, ensuring that all members are actively involved in every major decision. This unanimous decision-making requirement fosters a high level of engagement and mutual responsibility among members, promoting a strong sense of community and shared purpose.

In addition to the formal governance structures, the involvement of various stakeholders such as municipalities, cooperative banks, and municipal energy utilities enhances the decision-making and consensus-building processes. These stakeholders often bring in technical expertise, financial support, and additional resources that are critical for the success of energy projects. For example, municipal utilities (Stadtwerke) frequently collaborate with energy cooperatives, providing infrastructure, technical know-how, and sometimes even financial support. This collaboration not only strengthens the operational capabilities of the cooperatives but also enhances their legitimacy and community trust. Furthermore, energy cooperatives often benefit from being part of larger associations, such as the German Cooperative and Raiffeisen Confederation or the German Renewable Energy Federation. These associations provide model statutes, legal and accounting advice, and auditing services, ensuring that cooperatives adhere to best practices and legal requirements. They also facilitate knowledge sharing and networking among cooperatives, promoting the exchange of best practices and innovative solutions.

In practice, these governance structures and collaborative efforts result in a participatory environment where members can influence significant decisions and contribute to the cooperative's success. The democratic nature of the Assembly of Members, the oversight role of the Supervisory Board, and the operational leadership of the Board of Directors collectively ensure that decisions reflect the collective will and best interests of the members. Additionally, the involvement of external stakeholders and associations enriches the decision-making process, providing diverse perspectives and expertise.

In the overwhelming majority of German energy cooperatives, the Assembly follows the principle of 'one-person-one-vote'. While this ensures democratic decision making on the issues that the Assembly may address (on the statute, the purpose of the Energy Commons, and the use of the net annual profit), its influence on day-to-day business and decisions on renewable energy installations is limited and merely indirect. The Assembly of Members appoint the Supervisory Board of the cooperative. The analysis of statutes shows that it is the Supervisory Board who appoints the Board of Directors in 465 out of 570 cases (81.6 %), with the right to dismiss the Board immediately under 446 statutes (78.2%). In rare cases, external parties such as cooperative banks or municipal energy utilities appoint the majority of Directors. The Assembly of Members only appoint the Board under 102 statutes (17.9%) and may, sometimes along with the Supervisory Board, immediately dismiss the Board under 133 statutes (23 %). [1]

Problem solving

Effectively addressing problems and barriers within the energy community requires a proactive and structured approach that includes identifying root causes, engaging stakeholders, developing actionable solutions, and implementing and monitoring progress. Below is a list of possible steps identified for problem solving in energy communities:

- **Defining the Problem:** Clearly describing what is happening, where, and how it impacts the community or organization.
- **Gathering Data:** Collecting relevant data to understand the scope and scale of the problem. This may involve surveys, interviews, observations, and reviewing existing records. Accurate data helps in forming a comprehensive picture of the issue.
- **Root Cause Analysis:** Identifying the underlying causes of the problem rather than just addressing the symptoms.
- **Identifying Stakeholders:** Determining who is affected by the problem and who can influence its resolution. This includes community members, employees, partners, and external experts.
- **Facilitating Dialogue:** Creating forums for open communication where stakeholders can share their insights and suggestions. This could be through workshops, focus groups, or public meetings.
- **Building Consensus:** Working towards building consensus on the nature of the problem and the best approach to solve it. This ensures that everyone is on the same page and committed to the solution.
- **Brainstorming Solutions:** Engaging stakeholders in brainstorming sessions to generate a wide range of potential solutions.
- **Evaluating Options:** Assessing the feasibility, costs, benefits, and potential risks of proposed solutions. Considering factors such as resource availability, time constraints, and possible impacts.
- **Developing Action Plans:** Formulating detailed action plans for the chosen solutions. This includes defining objectives, tasks, timelines, responsibilities, and resources needed.
- **Assigning Responsibilities:** Clearly defining roles and responsibilities for executing the action plans. Ensuring that team members understand their tasks and have the necessary resources and authority to complete them.

Clear and continuous communication must be ensured throughout the implementation process to keep all those involved informed of progress, challenges and adjustments. In addition, progress must be monitored to ensure that implementation remains on track and to allow for timely adjustments and evaluation of the effectiveness of the implemented solutions against the defined objectives. To understand the impact and identify unforeseen issues, feedback from stakeholders on the implementation process and results needs to be collected, and adaptation strategies may need to be developed based on feedback and evaluation results. Flexibility in adapting strategies ensures that solutions remain effective and relevant. Finally, insights and lessons learned should be shared with the wider community or organisation to promote a culture of transparency and collective learning.

By following this structured approach, energy communities can address issues effectively, ensure continuous improvement and foster a collaborative environment where all members contribute to

solving problems. Regardless of the complexity of the barriers and issues, a designated contact person or team, independent of the issue at hand, should be established to address the problem or barrier and initiate the resolution process. All relevant stakeholders should be involved so that they have the opportunity to share their views and work together to find solutions. As has been pointed out on several occasions, stakeholder engagement plays a vital role in all key aspects of energy communities. Promoting strong stakeholder engagement early and consistently helps to overcome barriers, build trust, facilitate collaboration and align goals.

In addition to ongoing problem-solving, the priority is to ensure that conditions are favourable enough to avoid major obstacles. It is desirable that the principles of problem solving are properly embedded in the legal framework. In Germany, for example, legal and regulatory framework forms the foundation for addressing challenges in energy communities. The Renewable Energy Sources Act (EEG 2023) provides a comprehensive legislative framework that supports the development and operation of renewable energy projects. Compliance with these regulations helps mitigate legal risks and uncertainties. For example, the EEG 2023 outlines specific criteria for citizen energy societies, including membership requirements and geographic stipulations. Adhering to these guidelines enables energy communities to operate within a legally secure environment, reducing potential conflicts and ensuring long-term viability. Legal and regulatory advocacy plays a significant role in overcoming systemic barriers. Organizations that can actively participate in policy formulation processes, advocating for favourable regulations and support schemes for energy communities can help shape a conducive policy environment that addresses the specific needs and challenges faced by energy communities. By staying engaged with these organizations, energy communities can influence policy changes and ensure their interests are represented at various levels of government.

Moreover, addressing governance challenges is essential for the smooth operation of energy communities. By clearly defining roles and responsibilities and maintaining transparent processes, energy communities can prevent internal conflicts and ensure that decisions reflect the collective interests of members. Regular audits and adherence to best practices, facilitated by membership in cooperative associations, further enhance governance standards.

Networking and collaboration with other energy communities can also provide valuable insights and resources to address common issues. Platforms that facilitate the exchange of best practices, lessons learned, and technical expertise can help energy communities avoid common pitfalls and adopt successful strategies. Associations and federations often organise conferences, workshops and online forums where members can share experiences and solutions.

Lastly, addressing social and cultural barriers is essential for the inclusivity and sustainability of energy communities. Ensuring all community members, including vulnerable groups and low-income households, have access to and can benefit from renewable energy projects is crucial. By creating opportunities for all community members to participate, energy communities can foster social cohesion and ensure the benefits of renewable energy are broadly shared.

Well-functioning energy community

A well-functioning energy community thrives on the balance of technical, financial and social elements, driven by the collective efforts of its members to optimise local energy resources, achieve sustainability, efficiency and economic benefits. Central to its success is a clear vision and specific, achievable goals such as increasing the use of renewable energy, improving energy efficiency, reducing carbon emissions and improving energy security. These goals align and motivate members and promote inclusiveness and equity by ensuring that all members have a voice in key decisions, fostering ownership and accountability.

Effective governance involves regular meetings, voting mechanisms and open forums for collective decision making. The governance structure typically includes a governing body or board with clear roles, responsibilities and transparent processes to ensure smooth and ethical operations. The community should have a viable business model to support its operations and projects. Financial sustainability is critical, supported by efficient fund management, transparent financial practices, and diverse revenue streams such as membership fees, grants, and energy sales revenue. Financial stability allows initiatives to be sustained and invested in for future projects.

The use of modern technologies such as renewable energy sources (solar, wind, biomass), energy storage solutions and smart grid technologies is essential. Advanced metering and monitoring systems optimise energy consumption and production, increasing efficiency and reducing waste. Key indicators of technical efficiency include reliable energy supply through efficient generation, distribution and consumption practices, and the use of innovative technologies such as smart grids and energy storage to optimise energy management. Regular communication and outreach activities keep members informed about energy issues, project developments and opportunities for participation. Educational programmes and workshops equip members with knowledge of sustainable practices and energy technologies, fostering a culture of energy awareness.

A well-functioning energy community prioritises environmental and social responsibility, including reducing greenhouse gas emissions, minimising environmental impacts and promoting sustainable use of resources. Addressing social issues such as energy poverty ensures that all members have access to affordable and clean energy. The community should be able to adapt to changes and challenges, whether technological advances, regulatory changes or environmental impacts, through continuous learning, innovation and flexible policies and operations. A commitment to continuous improvement includes regular monitoring, evaluation and feedback mechanisms to assess performance and identify areas for improvement. Celebrating successes and learning from failures ensures that the community evolves and improves over time.

In a well-functioning energy community, high levels of member engagement and participation are encouraged through regular communication, events and activities. Organisationally, a clear strategy is required, with frequent updates to members and transparent decision-making processes. Inclusion and equality are ensured, with clearly defined roles and responsibilities. Transparent processes are essential for effective management and implementation of activities.

In practice, a well-functioning energy community focuses on decentralised renewable energy production from sources such as solar, wind, biomass or hydro. Local ownership and control are essential to ensure that the community has a stake and decision-making power over energy assets. Energy efficiency and demand-side management optimise resource use and minimise waste through energy conservation initiatives and smart metering. Grid integration and flexibility are

essential to balance supply and demand, using advanced grid technologies and storage solutions to ensure stability.

Social and economic benefits are delivered through job creation, skills development and improved community cohesion, with profits reinvested in local initiatives. Collaboration and knowledge sharing with stakeholders ensures access to collective expertise and resources, fostering innovation and resilience. Clear goals and vision, involvement of all relevant parties in decision-making and planning, open communication channels, and available information and resources help members understand the benefits to the community. Clear guidelines and rules for participation maintain order and harmony, with regular performance assessments to address issues promptly.

A well-functioning energy community embodies a holistic approach to sustainable energy production, consumption and management, driven by principles of inclusiveness, collaboration and environmental responsibility. By empowering local stakeholders to actively participate in the generation, distribution, and use of renewable energy resources, and by fostering a sense of ownership and responsibility for shared goals of decarbonisation, energy independence, and community resilience, these communities play a critical role in the energy transition.

Well operated energy community

The establishment and maintenance of a well-functioning energy community is a matter of strategic planning, effective governance, active engagement, innovation, financial sustainability and continuous improvement. By drawing on the country's experience in renewable energy development and collaborative governance, energy communities can create resilient and thriving ecosystems that contribute to broader goals of sustainability and energy transition.

- **Strategic Planning and Governance:** The foundation of a well-operated energy community lies in clear strategic planning and robust governance structures. This includes defining the community's mission, goals and long-term vision, as well as establishing transparent decision-making processes and accountability mechanisms. A clear definition of roles and responsibilities is necessary to ensure accountability. A democratic process for electing representatives and making decisions promotes inclusiveness and trust.
- **Community Engagement and Participation:** Active engagement of community members is essential for the success of energy communities. This includes fostering a culture of participation, inclusivity and collaboration through regular meetings, workshops, digital platforms and information sessions. Providing opportunities for residents to contribute ideas, provide feedback and volunteer for leadership roles increases community ownership and strengthens social cohesion. Engaged members are more likely to stay involved and contribute actively.
- **Technical Expertise and Innovation:** Energy communities benefit from access to technical expertise and innovative solutions for renewable energy generation, grid integration and energy management. By working with research institutions, universities and technology providers, communities can keep abreast of the latest developments in clean energy technologies and implement best practices for project development and operation. Appropriate technologies for energy generation, storage and management, such as solar

panels, wind turbines, energy storage systems and smart grids, should be adopted based on the community's needs and objectives.

- **Financial Sustainability and Resource Mobilization:** Ensuring the financial sustainability of energy communities requires careful planning and resource mobilisation. This includes securing funding for initial investments in renewable energy infrastructure, as well as developing revenue streams to cover ongoing operating costs. Energy communities can explore various financing mechanisms, such as grants, loans, crowdfunding, and cooperative financing models, to diversify funding sources and reduce financial risks. It is important to develop a comprehensive business plan that outlines financial strategies, funding sources and revenue models. This plan should include budget projections, funding opportunities (grants, subsidies) and potential income from energy savings or sales. Implement transparent and sound financial management practices. Only sustainable financial practices will ensure that the community can fund current and future projects.
- **Regulatory Compliance and Policy Advocacy:** Navigating the regulatory landscape and advocating for supportive policies are critical tasks for energy communities. Staying informed about relevant regulations, permits, and incentives for renewable energy projects helps communities comply with legal requirements and access available support mechanisms. Ensuring compliance with local, state, and federal regulations, including obtaining necessary permits, adhering to safety standards, and overcoming any legal barriers essential for community energy projects. In addition, engaging in policy advocacy at the local, regional and national levels enables communities to influence decision-making processes and shape favourable policies for renewable energy development.
- **Capacity Building and Knowledge Sharing:** Building the capacity of community members and stakeholders is essential to the effective operation of energy communities. Collaborative projects, joint initiatives and partnerships with local businesses and governments can increase community resources and impact. Providing training, workshops, and educational resources on topics such as renewable energy technologies, energy efficiency, and cooperative governance empowers residents to actively participate in community initiatives and make informed decisions. In addition, fostering a culture of knowledge sharing and collaboration within and beyond the community promotes collective learning and innovation.
- **Monitoring, Evaluation, and Continuous Improvement:** Regular monitoring and evaluation of community's energy projects and activities is necessary to assess progress, identify challenges, and measure impact. By collecting feedback data on energy production, consumption, and savings, communities can track performance indicators and adjust strategies as needed to optimise outcomes and targets. Additionally, fostering a culture of continuous improvement and learning enables communities to adapt effectively to changing circumstances and emerging opportunities. It is important to encourage innovation and be open to new ideas and solutions to keep the community resilient and forward-thinking.

By integrating these elements, communities can achieve sustainability, efficiency and economic benefits, contributing to the wider goals of energy independence and environmental protection.

Example: Germany

In the article "Regional Electricity Models for Community Energy in Germany: The Role of Governance Structures" by Moritz Ehrtmann, Lars Holstenkamp, and Timon Becker [2], the authors propose three distinct governance structures in the context of community energy initiatives: the Cooperative Regional Electricity Model, the Regional Balancing Pool Model, and the Peer-to-Peer Model.

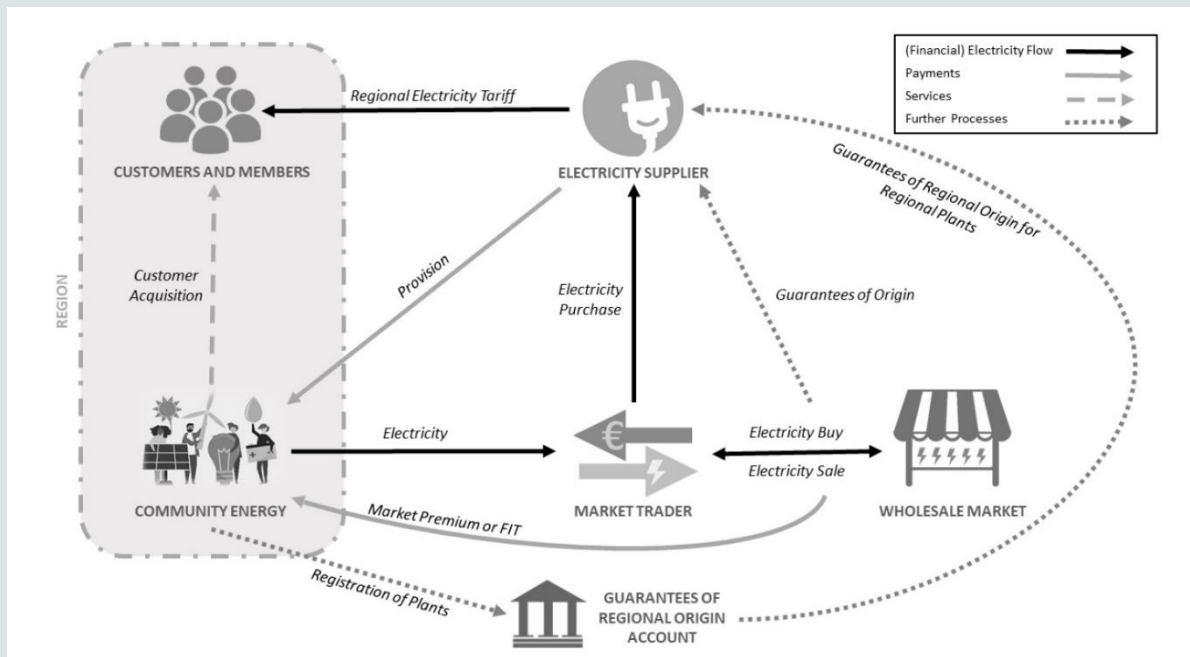
	Cooperative Regional Electricity Model	Regional Balancing Pool Model	Peer-to-Peer Model
Value Proposition	<ul style="list-style-type: none"> Delivering green regional generated electricity Optional: delivering citizen electricity generated from cooperative owned installations 	<ul style="list-style-type: none"> Delivering green regional generated electricity Promoting an electricity self-sufficient region 	<ul style="list-style-type: none"> Delivering green regional generated electricity Delivering electricity from a specific RE plant, which the customer can choose
Customer Interface	<ul style="list-style-type: none"> Members of cooperative as key target group Customers with regional residency Approximately 100 to several hundred customers per tariff 	<ul style="list-style-type: none"> Customers with residency in a defined region Approximately 100 to several thousand customers per tariff 	<ul style="list-style-type: none"> Customers with regional or national residency Main marketing channel is the internet P2P platform
Infrastructure	<ul style="list-style-type: none"> PV and/or wind installations (minimum size 100 kW), with a focus on wind installations Local marketing to retail end customers as main activity Mostly based on voluntary engagement of cooperative members 	<ul style="list-style-type: none"> PV, biogas, or wind installations, with a focus on small/medium PV installations balanced in a regional balancing pool Plant operator sells local generated electricity to a marketing partner via an electricity trading company 	<ul style="list-style-type: none"> PV, wind, water, or biogas installations The plant operator acts as the electricity official supplier Most of the electricity supplier tasks are delegated to the P2P platform operator
Financial Model	<ul style="list-style-type: none"> Share of revenue from electricity sales goes to the cooperative 	<ul style="list-style-type: none"> In some cases a small share of electricity sales goes to plant operator In most cases no additional revenue for the plant operator 	<ul style="list-style-type: none"> Revenues from electricity sales are divided between plant operator and P2P platform provider
Governance	<ul style="list-style-type: none"> The marketing partner is responsible for all energy management processes and electricity supplier obligations Large national-wide acting partnered supplier The energy cooperative is responsible for local marketing and customer acquisition 	<ul style="list-style-type: none"> The main task of the energy community company lies in electricity generation The marketing partner is responsible for all energy management processes and electricity provider obligations behind the electricity product Intermediary supplier with regional ties The marketing partner is mainly responsible for local marketing 	<ul style="list-style-type: none"> Plant operator is responsible for billing management National-wide acting marketing partner, managing the technical complex P2P process The P2P platform provider is responsible for almost all energy management processes and electricity provider obligations

Cooperative Regional Electricity Model:

The cooperative model involves community energy companies partnering with marketing entities to establish regional electricity products, primarily sourced from medium to large-scale renewable energy (RE) installations, such as PV or wind power plants operated by energy cooperatives. The model's value proposition revolves around emphasizing regional origin, local impact, and trust in the supplier to attract customers.

From a governance perspective, this model relies on long-term partnerships between community energy companies and marketing partners. These partnerships often develop over time, with marketing partners sometimes involved in the founding phase of energy cooperatives or the construction phase of RE plants.

Key marketing partners in Germany include "Grünstromwerk GmbH" and "Bürgerwerke eG," which act as licensed electricity suppliers and undertake regulatory obligations, energy management processes, and customer-related tasks.



In this model, the marketing partner assumes responsibility for customer balancing group management, procurement of residual electricity, guarantees of origin, green electricity labelling, customer switching processes, and billing. Meanwhile, the community energy company focuses on local marketing and customer acquisition. Although the marketing partner retains the main economic value, the community energy company contributes significant effort to product development and marketing.

Opportunities for community energy companies include the potential for additional revenue from electricity sales and the establishment of local marketing as a pillar of finance. However, challenges include limited customer bases, reliance on voluntary efforts for local marketing, and the need for professional marketing structures. Despite these challenges, the model is characterized as collaborative, with marketing characteristics and pricing negotiated jointly between partners.

Overall, the governance structure of this model relies on strong partnerships between community energy companies and marketing partners, with each entity contributing expertise and resources to develop and market regional electricity products. While the marketing partner retains economic value, the community energy company plays a vital role in local marketing and customer engagement.

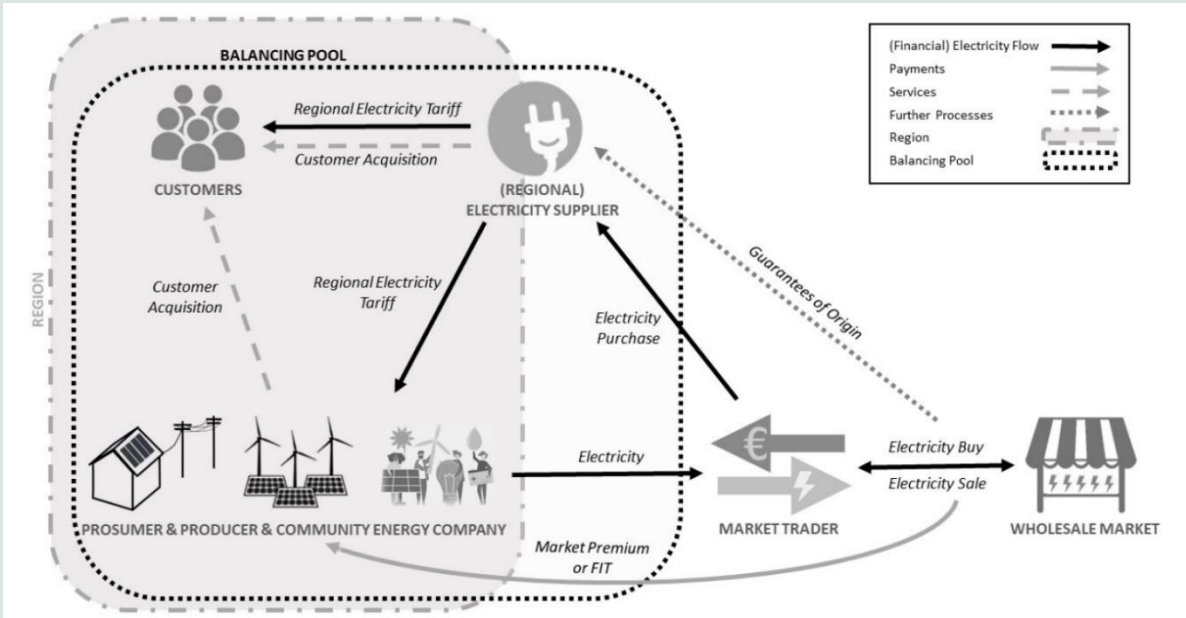
Regional Balancing Pool Model:

The Regional Balancing Pool Model involves a local renewable energy supplier leading the establishment of a regional electricity product, integrating small to medium-sized PV, biomass, and large wind installations, often owned by individuals, SMEs, or municipal suppliers. The model aggregates regional renewable energy capacities and balances them via a separate regional balancing pool, aiming to match local generation with consumption transparently.

From a governance perspective, the community energy company's involvement varies across different scenarios. In the most common case, the community energy company markets its generated electricity through an intermediary energy supplier, which aggregates renewable energy capacities into the regional electricity product via the balancing pool.

However, the community energy company typically plays a minor role in product design, marketing, and revenue generation beyond feed-in tariff schemes.

In rarer cases, the community energy company may actively participate in retailing locally generated electricity, but this requires a professional marketing partner to handle regulatory obligations and energy management processes. Alternatively, community companies and citizens may own shares in the electricity supplier, organized as a cooperative, with professional management structures.



Governance of the Regional Balancing Pool Model typically follows a top-down approach, with local electricity suppliers engaging community energy companies or other actors with renewable energy plants to market electricity. Economic value primarily resides with the electricity supplier.

Opportunities of this model include simplified verification of regional origin due to matching generation and consumption in a separate balancing pool, eliminating the need for guarantees of regional origin. However, the model's technical complexity and transaction costs associated with aggregating multiple renewable energy plants pose challenges.

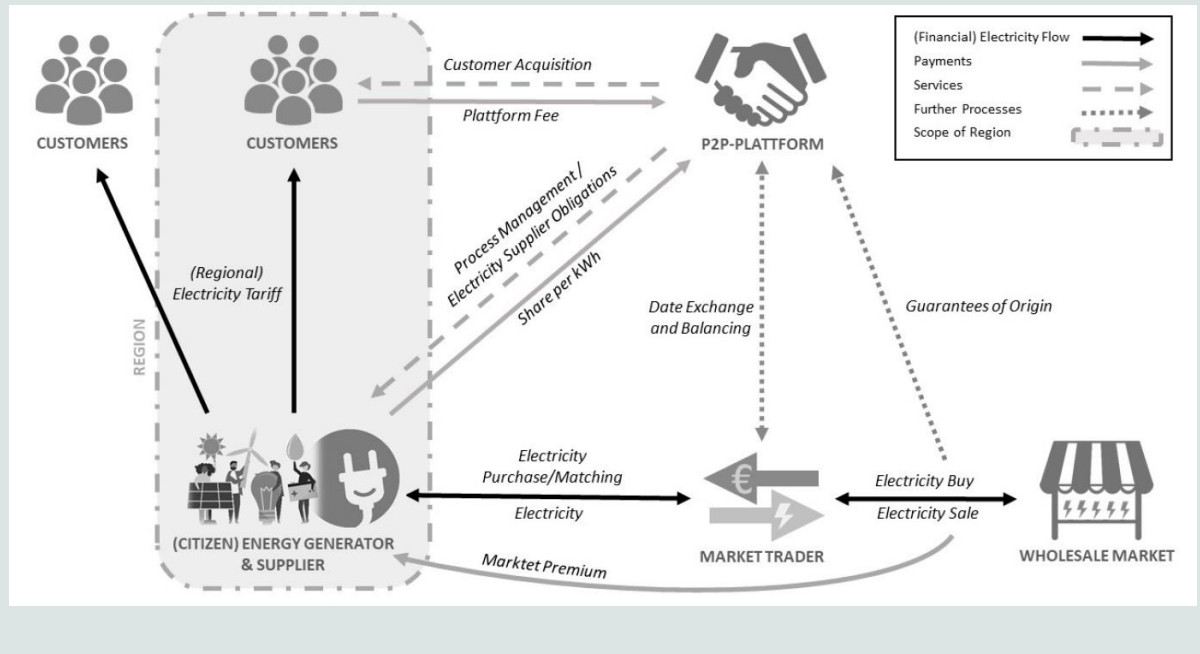
Peer-to-Peer Model:

The Peer-to-Peer (P2P) Model in Germany enables retail customers to directly purchase green electricity tariffs from renewable electricity plant operators through an internet platform. This model involves various renewable plant operators offering electricity tariffs from medium to large PV, wind, biomass, or waterpower installations on the P2P internet platform. While not strictly regional, more than 50% of customers typically reside near the specific plant location, enhancing local engagement.

From a governance perspective, a unique aspect of this model is that the system operator becomes an official electricity supplier, establishing a direct contractual relationship with retail customers. This setup allows for transparency in electricity origin, facilitated by the platform operator handling most electricity supplier obligations, such as registration, customer-switching processes, and managing residual electricity. Plant operators may also assist in retail customer

billing, but the platform operator primarily manages multiple electricity tariffs simultaneously, employing sophisticated and automated processes to match generation and consumption accurately.

The governance structure of the P2P model involves collaboration between plant operators and the platform operator, with the latter playing a significant role in customer acquisition through the internet platform. Plant operators influence retail pricing and market appearance, earning revenue shares from the retail price, alongside feed-in tariffs. However, a substantial portion of retail revenues goes to the platform operator as compensation for the services provided. Overall, the governance approach leans towards a top-down model with collaborative elements between plant and platform operators.



Stakeholder engagement and motivation

Building an energy community means bringing together people with different backgrounds, interests and expertise to work towards a common goal of sustainable energy. This requires a comprehensive and robust stakeholder engagement strategy and a range of approaches, including the following core elements:

Identification of Key Stakeholders

- Start by identifying the key stakeholders who will be affected by or have an interest in the energy community. These include residents, local businesses, municipalities, energy cooperatives, investors, policy makers and regulators. Consider reaching out to community leaders, local organisations and relevant institutions to understand the different perspectives and interests of stakeholders.

Understanding Stakeholder Needs and Concerns

- Take the time to listen to the needs, concerns and priorities of each stakeholder group. Conduct surveys, interviews or focus groups to gain insight into what matters most to them in relation to energy issues, renewable energy and community development. Understanding stakeholder perspectives will help you tailor engagement strategies and project design to meet their needs and expectations.

Building Relationships and Trust

- Building relationships and trust with stakeholders is essential for effective engagement. Take the time to engage stakeholders in meaningful conversations, listen to their input and demonstrate a commitment to addressing their concerns. Be transparent about project goals, objectives and decision-making processes, and communicate openly about opportunities and challenges. Building trust takes time, but it is critical to fostering collaboration and stakeholder buy-in.

Facilitation of Dialogue and Collaboration

- Create opportunities for stakeholders to come together and collaborate on energy community initiatives. Organise community meetings, workshops or working groups where stakeholders can share ideas, discuss concerns and co-create solutions. Encourage open dialogue, active participation and respectful communication among stakeholders to foster a sense of ownership and shared responsibility for the energy transition.

Providing Education and Information

- Educate stakeholders about the benefits, opportunities, and challenges of renewable energy and community-led initiatives. Provide clear and accessible information about the project, including its objectives, timeline, and expected outcomes. Provide educational materials, workshops, or webinars to increase stakeholders' understanding of renewable energy technologies, energy efficiency measures, and sustainable practices. Empowering stakeholders with knowledge and information enables them to make informed decisions and actively participate in the energy community.

Seeking Feedback and Input

- Actively seek feedback and input from stakeholders throughout the project lifecycle. Provide opportunities for stakeholders to contribute to the design, implementation and evaluation of the project. Incorporate stakeholder feedback into decision-making processes, demonstrating a commitment to inclusivity and responsiveness. By seeking input and involving stakeholders as partners in the project, you can build consensus, identify potential concerns and address issues early on.

Evaluation and Adaptation

- Continuously evaluate stakeholder engagement efforts and project outcomes to assess effectiveness and identify areas for improvement. Gather feedback from stakeholders on their experience of the engagement process and the impact of the project on their communities. Use this feedback to adjust engagement strategies, refine project plans, and address emerging challenges or opportunities. By learning from stakeholders' experiences and adapting to their needs, you can ensure that the energy community remains responsive, inclusive and sustainable over time.

There are several key actions that can be taken to keep stakeholders motivated and active in an energy community. First and foremost, it is important to maintain open lines of communication. This means transparently sharing project updates, milestones and successes through various channels such as newsletters, emails and community meetings. Keeping stakeholders informed of progress and achievements makes them feel valued and involved in the ongoing development of the energy community.

Recognition and appreciation are also essential components of sustaining stakeholder motivation. Publicly acknowledging and celebrating stakeholders' contributions strengthens their sense of ownership and pride in the project. Whether it's highlighting individual achievements or commemorating collective milestones, recognition creates a positive atmosphere and encourages continued active participation.

It is also essential to provide meaningful opportunities for stakeholders to contribute. Workshops, training sessions and collaborative decision-making forums enable stakeholders to contribute their expertise and shape the direction of the energy community. By involving them in decision-making processes, their voices are heard and they feel a sense of ownership and investment in the project's outcomes.

Setting clear goals and tracking progress also plays an important role in keeping stakeholders motivated. Keeping everyone aligned and focused on common goals by setting clearly defined goals and regularly updating stakeholders on progress towards those goals. Tracking progress allows stakeholders to see the tangible impact of their contributions, which increases their commitment and enthusiasm for the project.

Remaining flexible and adaptable to changing stakeholder needs is another important measure. Listening to their feedback and being prepared to adjust project plans and activities accordingly demonstrates responsiveness and respect for their input. Actively incorporating stakeholder feedback increases their sense of ownership and investment in the project.

Facilitating networking and community-building activities also helps to sustain stakeholder motivation. Creating opportunities for stakeholders to connect, share experiences and build relationships fosters a sense of camaraderie and mutual support within the energy community. Encouraging collaboration and partnership building between stakeholders further strengthens bonds and promotes a common sense of purpose.

Finally, investing in continuous learning and capacity building ensures that stakeholders have the knowledge and skills they need to contribute effectively. Stakeholders can deepen their understanding of renewable energy and community engagement by offering training programmes, workshops and educational resources on relevant topics. Stakeholders feel valued and empowered to make meaningful contributions to the energy community by investing in their personal and professional development.

By implementing these strategies, energy communities can effectively engage stakeholders. This will ensure their participation, motivation and long-term commitment to sustainable energy initiatives.

Goals and expectations of members

When joining an energy community, participants typically have a set of goals and expectations that drive their involvement and commitment. These goals and expectations often reflect a blend of personal, community, environmental, and economic aspirations.

- **Financial Savings:** Reducing energy costs is a key motivation. Many join energy communities with the expectation of reducing their energy bills through shared renewable energy resources and energy efficiency measures. By joining an energy community, members expect to benefit from shared renewable energy resources, bulk purchasing and collective energy efficiency measures that can lead to significant cost savings. Participants often seek greater control over their energy sources and consumption.
- **Environmental Impact:** Participants often want to reduce their carbon footprint and contribute to environmental sustainability by supporting and using renewable energy sources.
- **Energy Security:** Ensuring a stable and reliable supply of energy through local generation and distribution is a key objective for many members. Being part of an energy community provides a sense of autonomy from traditional utility companies.
- **Community Development:** Many join to support local economic development, create jobs and improve the overall quality of life in their community. Energy communities are an excellent collaborative model for the direct involvement of citizens and local communities in renewable energy, and members are guaranteed access to clean and local energy.
- **Social Cohesion:** Joining an energy community provides an opportunity to build stronger relationships with neighbours and other community members through joint efforts. In addition, participation and action within energy communities increases social cohesion by improving interaction and dialogue between members. Energy community members work together and develop a common identity, which helps to build loyalty and trust in the community. Through participatory processes, they also find common solutions to problems that members may not be able to solve individually.
- **Education and Skills Development:** Participants expect to increase their knowledge and skills in energy management, renewable technologies and sustainability practices through educational opportunities, workshops and resources.
- **Policy Influence:** Members can join with the aim of influencing local and regional energy policy. They expect to engage in advocacy, promote progressive energy policies and ensure that their community serves as a model for sustainable practices.
- **Transparent Governance:** Participants expect transparent governance and decision-making processes within the community. They look for accountability, clear communication and trustworthiness in the way projects are managed and funds are used.
- **Long-term Engagement and Impact:** Members seek long-term engagement and impact. They expect the energy community to have a lasting positive influence on their lives, the environment, and the local economy, and to continuously evolve and adapt to new challenges and opportunities.

In general, the benefits of energy communities are numerous, both for the participants and for the energy system. Below is a presentation of the benefits from different stakeholder perspectives.

Residents may join an energy community because it offers them the opportunity to reduce their energy bills through access to affordable and locally generated renewable energy. By participating in shared solar or wind projects, residents can benefit from lower electricity costs and potential income from selling excess energy back to the grid. Joining an energy community also allows residents to help transition to clean energy and reduce their carbon footprint, thereby improving air quality and environmental sustainability in their community. Residents can also take part in community-building activities such as neighbourhood energy events and workshops, fostering social connections and a sense of belonging within the community.

Municipalities might join an energy community to meet their renewable energy targets and improve local energy security. By investing in community-owned renewable energy projects, municipalities can diversify their energy sources, reduce dependence on imported fossil fuels, and create a more resilient energy infrastructure. Moreover, participating in the energy community allows municipalities to stimulate local economic development and job creation, particularly in the renewable energy sector. By leveraging community resources and expertise, municipalities can implement energy efficiency programmes, promote sustainable transportation options, and support innovative clean energy initiatives, improving the quality of life for residents and fostering a vibrant and sustainable local economy.

Local businesses might join an energy community to reduce their operating costs and improve their bottom line. By investing in renewable energy projects or participating in group purchasing agreements for clean energy, businesses can lower their energy expenses and increase their competitiveness in the market. Additionally, aligning with sustainability initiatives can enhance the reputation of businesses, attracting environmentally conscious consumers and investors. Furthermore, participating in the energy community allows businesses to demonstrate their commitment to corporate social responsibility, which can strengthen relationships with customers, employees, and other stakeholders, ultimately contributing to long-term business success and growth.

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