Interreg Danube Region

Co-funded by the European Union

NRGCOM

SYNOPSIS REPORT

A.T.1.2 Analysis of the business models and stakeholder management of renewable energy communities

Project NRGCOM:
Creating appropriate operational conditions for renewable energy communities in the Danube Region

This project is supported by the Interreg Danube Region Programme, co-financed by the European Union and the Ministry of Investments, Regional Development and Informatization of the Slovak Republic

Document Content

1. Baseline data on task performance

Organizer and guarantor of task processing:

PP12 NEK – Slovakia

Objective of the activity:

Creation of a database of analytical data on possible and existing models and management and governance of stakeholders in the form of a document of the best operating models of RECs and future guidance and recommendations in energy communities based on the application of renewable energy sources.

Description of the task content:
Involved PP partners:
LP STRIA - Hungary
PP2 IMRO-DDKK
PP3 JAIP – Czech Republic
PP4 FORSCHUNG Burgerland – Austria
PP5 IRENA – Croatia
PP6 KSSENA – Slovenia
PP8 REDASP – Serbia
PP9 OER – Romania
PP11 DIT – Germany
PP12 NEK – Slovakia

The PPs carried out extensive theoretical research and mapping of the development and current situation in their countries and organized their workshops to exchange knowledge. They mainly investigated management methods with a focus on technical details, ownership structures, financing mechanisms, revenue models, production, distribution and division of tasks, energy storage and consumption, equipment and business models designed and applied in current practice. Participating partners and their data serve as case studies for in-depth analysis during in-house research and workshops. In terms of content, PPs are focused on the functioning and building of energy communities based on renewable energy sources. Individual national documents containing experience, recommendations, proposals and possible solutions for the future were processed and already functional best practices for overcoming problems, risks and obstacles related to regulatory frameworks, legislative starting points, possible financial obstacles and acceptance of given EC energy communities in the given country were described.
The fulfillment of the A.T.1.2 task was ensured by experienced domestic experts and experts of the given country and provided their best and most important information for the fulfillment of the task based on their capacities and geographical location as well as related domestic specifics.

Partners defined in the description of the assignment: LP-STRA, PP2-IMRO, PP3-JAIP, PP5-IRENA, PP6 KSSENA, PP11-DITa PP12-NEK, but also voluntarily involved other partners PP4-FORSCHUNG, PP8-REDASP and PP9-OER they processed their documents very responsibly and subsequently added additional details and data as needed within the framework of joint e-mail communication with the guarantor of the task, within the realistically set deadlines and scope.

Methodology of task processing A.T.1.2

The guarantor of activity A.T.1.2 – PP12 NEK chose the following approach for processing the task:

1. Detailed analysis of the starting points, the expected goal and the possibility of unifying the collected data and the opinions of individual partners in the task

2. Prepared a consultation table (Annex to this report) with markings

"Appendix to activity A.T.1.2 Table: Overview of business models and management of EC energy communities - A.T.1.2"

which assigned 10 questions and a final summarization with additional data and recommended information and publication sources to be developed for individual partners.

3. The partners uniformly filled in their fields in the table and answered the defined question for the reasons of ensuring the possible compatibility of the obtained data and expressions for mutual comparison and subsequent evaluation of the task.

4. Realization of domestic national workshops, respectively consultations on the topic with partners.

5. Organization of the 2nd NEK National Workshop with a meeting of Slovak experts and foreign consultants on the topic 25-26 April 2024.

5. Realization of a joint international online workshop on 10/05/2024 under the leadership of NEK with presentations of outputs and results of individual project partners for the task and subsequent summary of other tasks.

6. Elaboration of the Catalog of the best operating models of RECs based on specifying the management and organizational structure recommended for energy communities throughout the scope of the NRGCOM project with recommendations for domestic countries, but also for the entire EC network in the European Union.

Author processing of the report for activity A.T.1.2:

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An inseparable organic part of this analysis of activity A.T.1.2 of business models and management in energy communities based on RES is a separate Catalog of the best operating models of energy communities D1.2.1.

2. Analysis of individual data and inputs from the countries of the project partners

Keywords:

Energy, ecology, energy process management, energy efficiency, energy management, energy mix, environmental studies, renewable energy source – RES

Explanation of terms used in the analysis:

Energy - its use, quality, intensity and efficiency of conversion, is a key factor in human history. Flows and conversion of energy maintain and determine the life of all organisms and macro-organisms – societies and civilizations.

Ecology - Scientific discipline about the mutual relations of living organisms and the environment in which living organisms reproduce. It belongs to the biological sciences, but the subject of its investigation and methods are also connected with other natural and social sciences. Currently, it represents the theoretical basis for many applied disciplines that deal with the human environment and its changes. At the same time, it is also an independent biological discipline, which can also be partially considered a social science discipline.

Energy - Energy is a scientific field that deals with the economic use of all energy sources and reserves, as well as the industry supplying energy. The task of the energy industry is to solve technical, economic and ecological problems accompanying the acquisition of energy from natural sources and its transformation into usable forms, including energy transport and storage.

The energy concept - in terms of the principles of sustainable development, is based on the assessment of energy production and consumption not only on a quantitative, but above all on a qualitative basis, i.e. elimination of the degradation of the energy level of energies and fuels with the aim of maintaining the highest possible level of conversion potential" (58)

Environmental studies – Scientific field dealing with the protection and creation of the environment, as well as the influence of this environment on the formation of personality and the relationship of people to the environment. The concepts of ecology, environmental science and the environment are synergistic, interconnected and inseparable expressions whose understanding and solution are existentially important for people.

Conventional energy source (CZE) - also called non-renewable energy sources are standard (traditional) - natural gas, coal, oil, which are the pillars of primary energy sources. The vast majority of electricity is produced from coal and natural gas. An alternative to traditional non-renewable sources is a nuclear power plant. Nowadays, for example, peat, which was burned in the past, but not on a large scale, is starting to become an alternative source. Similarly, we can think about heat recovery.

A renewable energy source (RES) is a source whose energy potential is constantly renewed by natural processes or human activity and is characterized by a total potential, which is the energy of a renewable source that can be transformed into other forms of energy per year and its capacity is given by the conditions of nature . In essence, it is an immutable factor from a short- and medium-term point of view, it also contains a technical potential, i.e. a part of the total potential that can be used after the introduction of available technology, and then it is also a usable potential that can be explained as a technical potential reduced due to barriers in legislation and undeveloped infrastructure. "If you want to have solar panels, you need a surface to put them on. If you want to grow grain, you again need an area," says the author. and cites renowned expert Jared Diamond from the book Collapse who found that while many factors contributed to the collapse of civilizations, the common denominator of all would be that the population density was too high.

Primary energy consumption (PES) – it is gross consumption without non-energy use, so it includes the total energy need in the country, including consumption of the energy sector itself or losses during distribution.

Processed according to sources:

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- Energieportalweb:energie-portal.sk dostupné na: https://www.startitup.sk/aku-ma-solarna-energia-slovensku-buducnost-nakolko-ju-vlada-podporuje/

2.1 Task respondents - partners on activity A.T.1.2 processed answers and information on the following data in the table

Circuits/Specifications:	**Example/Utility Brief**
1. Legal form of official EC registration and organization in your country Alternatively, in the case of several forms, also indicate the proportional representation in % on the market.	Legal entity, Civic association, Business entity, Non-profit organization, Other (specify what?)
2. Are ECs perceived as non-profit organizations or only as business entities?	2. Are ECs perceived as non-profit organizations or only as business entities?
3. Are the governing bodies of the EC constituted as elected bodies or nominated according to the size and position of participation in the EC?	For example, a share in management regardless of the importance and status of the EC participant - everyone has the same share and voting rights, etc.
4. Describe the known financing mechanisms of EC, the methodology of obtaining income and the way of keeping accounts in your company. Indicate the percentage of the given funding sources.	Subsidies from the state budget, Subsidies from EU funds, Personal income from EC business Regional contributions and subsidies, Other (specify what?) Agenda kept in simple accounting or double accounting?
5. Are ECs obliged as non-profit organizations to submit annual tax returns to the state tax administration? Is it sufficient for the EC to submit only the Annual Report to the relevant register each year?	In particular, state whether there is a separate way of recording and registering tax statements in your country? Also to state whether the book closing is approved by the EC authorities as well as an independent auditor according to the regulations in the country?
6. To what estimated extent do the ECs operating at the same time in your country participate in the domestic energy mix of the country???	Write a justified professional estimate in your country about the share in % and especially with regard to renewable energy sources in the national energy mix. List the official information sources (link...) about the energy mix from binding state documents.
7. Do EK also provide energy distribution, storage and energy production at your place, and in what proportion?	In particular, state whether the EC structure at the given stage of development in your country allows, in addition to energy distribution and customer networking, activities such as storage and the actual production of energy from RES?
8. What internal models of management and distribution of tasks and functions	Write and draw a general model/diagram of a typical EC organizational structure in your country.

within the EC ensures and to what extent the EC management?	Indicate whether, in addition to founding and registration documents, EC also has separate institutes and organizational or operating regulations for functioning?
9. How can you describe the internal business models (diagram or picture) in the functioning of EK at your place in the framework of communication and energy trading with consumers and customers within the given community in the region or relevant area of operation of EK?	Introduce a exemplary model model of business communication and processing of customer requests in EC and subsequently energy supply with an emphasis mainly on the RES base, but also other energy sources in the given area. State how, in your opinion, EL maps and monitors the needs and expectations of community members and its customers/subscribers in the given area? Give an example of how EK corrects its energy supplies depending on changes in consumption by customers?
10. Indicate what basic theoretical information databases are objectively devoted to EC support and development in your country?	Write possible databases for international monitoring and comparison of current data on EC in your country. Submit an overall overview of currently known and registered ECs in your country (names, place of operation and possibly also estimated importance/position) on the relevant energy market in your country.
Conclusion/Summary List any other models, interesting points and peculiarities of the business functioning of the EC management method in your country.	List sample or case studies and information sources) Publications and links...) and similar interesting things. We also recommend adding interesting home-made visual material or tables with relevant and current statistical data)
Other additional documents and information of individual partners	
Sources:	.....

2.2 The analysis and synergy of the information obtained and the summary from the partners

1.	Content of the analysis:
Circuits/ Specifications:	1. Legal form of official EC registration and organization in your country Alternatively, in the case of several forms, also indicate the proportional representation in % on the market.
Example/ Utility Brief	Legal entity, Civic association, Business entity, Non-profit organization, Other (specify what?)
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: ECs are being built as legal forms in all monitored countries, namely: - Non-profit limited liability companies and associations - Interest associations of legal entities - Cooperatives - Other unspecified persons and associations and foundations with legal personality - Private corporations, business companies with a precisely defined system management. Table A.T.1.2 in the appendix contains a detailed specification of the data in which partner country with a description of the characteristics, organizational structure and positives and negatives of individual EC legal forms. The definitions of Energy Communities and Energy Communities are fairly uniformly based on European legislation and are defined as associations mainly dealing with production and distribution. Overall, the partners agreed that, mainly in countries such as Hungary, Slovakia, Croatia, the Czech Republic, or Slovenia, Serbia and Romania, the issue of establishing ECs is only getting started and there are only a small number of ECs at home, so countries such as Austria and Germany are more important in front.

	Here, for example, the legal framework for the organization of the energy community depends on the size and sector of the project to be implemented. A specific feature that is not found in other countries is also known here, namely that the fastest, easiest and cheapest way to implement a citizen's energy project is to establish a so-called civil corporation. This legal form is very popular among citizen-owned solar installations. It does not have legal personality; therefore it does not bear any rights and obligations. Instead, rights and obligations affect individual partners personally; shareholders are fully and legally responsible for their private property. To reduce the risk, it is possible to combine this entity with the establishment of a registered union.
SUMMARY:	The definitions of Energy Communities and Energy Communities are fairly uniformly based on European legislation and are defined as associations dealing mainly with the production and distribution of energy and related issues of redistribution and efficient use of energy resources and preferential application of the economic efficiency of energy based on renewable energy sources, while observing social and climatic environmental requirements and principles. Energy communities in general can take the legal form of associations, cooperatives or other companies. If the community chooses the form of a different legal entity (than an association or a cooperative), its internal conditions must be defined in the founding legal act so that their content and purpose are substantially similar to the internal conditions of an association or a cooperative. The details are fundamentally regulated during registration at the competent authority by a document, either the Statutes or the Charter of the EC. It can be stated that everywhere ECs are registered as legal entities and in many cases also as non-profit entities, but mainly they deal exclusively with energy in local, local and regional conditions in that country.
2.	
Circuits/ Specifications:	2. Are ECs perceived as non-profit organizations or only as business entities?
Example/ Utility Brief	2. Are ECs perceived as non-profit organizations or only as business entities?
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: Energy communities (ECs) are primarily seen as non-profit organizations, emphasizing their main purpose of providing environmental, economic or social benefits to their members or the community in which they operate. The founding legal act of the EC defines its purpose, which focuses on meeting the needs of its members and the community. However, the EC's legal form determines its profit distribution policy. If the EC operates as a cooperative or

	similar commercial company, it can distribute a limited part of the profit (up to 33%) among its members, provided that this does not jeopardize the purpose of the community and create a fund from the profit. On the other hand, if the EC operates as an association or a non-commercial corporation, the distribution of profits among the members is prohibited. This distinction emphasizes that, while ECs may generate income, their main purpose is to serve the interests of their members and the community, rather than to maximize profit. There is no generally recommended company form for EK. Currently, most ECs are established as some form of association, non-profit organization or cooperative. The assessment of whether energy communities are non-profit is generally a matter for the tax authorities and therefore cannot be answered unambiguously. This may include, for example, environmental protection purposes. The corporation must "exclusively and directly" serve to further the purpose. Tax and registration authorities are responsible for assessing whether these requirements are met. The energy community and the RES community are legal entities established for the purpose of producing electricity and related activities and realizing environmental, economic or social benefits, while their primary purpose is not to make a profit, but to achieve sustainable and efficient energy production and consumption, reduce energy costs, improve air quality and reduce dependence on fossil fuels. Therefore, they are perceived as non-profit organizations. At the same time, the regulation applies that if a non-profit organization conducts business and provides supplies and services beyond the scope of its activity, defined in the founding documents during registration, it is obliged to keep separate accounting for this purpose and have a trade license issued by the relevant registration office for the given activity.
SUMMARY:	The following findings can be generalized from the aforementioned survey of individual partners: ECs are perceived as non-profit organizations only to the extent that they produce and distribute energy in a given area of activity for the purpose of economic and environmentally and energetically efficient results, but fundamentally not for the creation of profit, regardless of whether they are cooperatives, trading companies, corporations or foundation. In particular, if we examine the Energy Communities based on the application of renewable energy sources, then in all monitored partner countries it can be said that they are legal entities that are: • based on open and voluntary participation, independent and effectively controlled by partners or members in the vicinity of renewable energy projects owned and developed by this legal entity; • whose partners or members are legal or natural persons other than legal persons performing economic activity and which are not SMEs; • whose primary objective is to provide environmental, economic and social benefits to its partners or members or the local areas in which it operates, rather than financial gain.

	In addition, Article 43 defines that the RES community has the right to produce, consume, store and sell energy from renewable sources, including on the basis of contracts for the purchase of electricity from renewable sources. It has equal access to all relevant energy markets, both directly and through aggregation. Legal entities performing economic activity may be members of the RES community, as long as they do not perform their main economic or professional activity as part of their participation in the community. Thus, the principle applies that: Citizens' Energy Community - its main objective is to provide environmental, economic or social benefits to its members or shareholders or the local areas in which it operates, and not to generate financial profits; • Renewable Energy Community - whose primary objective is to provide economic, social or environmental community benefits to its shareholders or members or the local areas in which it operates, rather than financial return. Somewhere, for example, non-profitability is limited by a legal regulation, namely that no more than 50% of the generated profit should be distributed among EC members according to the specific conditions of their own statutes, otherwise such an activity could be considered a business.
3.	
Circuits/ Specifications	3. Are the governing bodies of the EC constituted as elected bodies or nominated according to the size and position of participation in the EC?
Example/ Utility Brief	For example, a share in management regardless of the importance and status of the EC participant - everyone has the same share and voting rights, etc. For example, the position and weight of the voting right in EC bodies according to the size of the EC participant's share.
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: The governing bodies of energy communities (EC) are elected. Members with voting rights, including natural persons, small businesses, municipalities, regions or voluntary associations, participate in decision-making processes. The highest body of the EC, usually in the form of an association, is the members' meeting, where voting rights are exercised democratically. Each voting member has equal participation, while the scope of influence of one member is limited. Specifically, one member cannot exceed 10% of all votes in the community, ensuring fair representation and preventing undue influence. In addition, autonomy is preserved within the EC, as decisions are taken collectively at members' meetings. The association is responsible for maintaining a list of members with relevant information, thereby ensuring transparency and accountability in management. The governing bodies in the EC are thus democratically elected, which reflects the principles of effective control and autonomy stated in the legislation. For example, in the form of commercial companies, from a legal point of view,

	the highest decision-making body of a limited liability company (or equally of a non-profit limited liability company) is the members' assembly. It must be convened at least once a year to approve the annual report. If key issues arise, additional membership meetings can be called. The system of constituting EC management bodies basically depends on the organizational form; in the case of associations, it is assumed that the general assembly will elect the board of directors. The Energy Communities Platform has proposed model statutes for associations that state: Tasks of the General Assembly: b. Election and dismissal of members of the Executive Board, while election proposals must be demonstrably delivered to the Executive Board no later than __ days before the respective elections; The provisions on the executive board say: The executive board is elected by the general assembly. Owners of shares and members of the energy community of citizens exercise voting rights independently of the ownership share in the energy community of citizens according to the principle of one member - one vote. The partners agreed in their findings that the Energy Community is based on voluntary and open participation and is effectively controlled by members or shareholders who are natural persons, local authorities including municipalities or small businesses; At the same time, such a community for renewable energy - is based on open and voluntary participation, is autonomous and is effectively controlled by shareholders or members located in the vicinity of renewable energy projects owned and developed by this legal entity. The governing bodies depend on the type of legal entity chosen for the EC. For example, in a relatively experienced state in Germany, in the vast majority of German energy cooperatives, the assembly is governed by the principle of "one person - one vote". Although this ensures democratic decision-making on issues that the assembly can deal with (status, purpose of energy policy and customer services and use of annual income), its influence on day-to-day business and decisions about renewable energy facilities is limited and only indirect.
SUMMARY:	How the energy community works in practice depends to a large extent on how the relations between the members are regulated in the relevant founding document, regardless of the scope, and how the goals of the community are chosen. In general, each member of the EC's highest body has the same weight of vote, which is enshrined in the statutes of the concerned EC or EC. The fulfillment of the mission after the establishment and creation of the EC or ES in terms of the internal organizational structure is ensured by the other, lower governing elected bodies of the community. Their internal operation, such as the status and weight of the right to vote or a specific way of functioning, are precisely defined by the internal regulations approved by the above-mentioned highest authority, for example the Statutes of the EC. The following organizational structure, generally applied in various forms, can

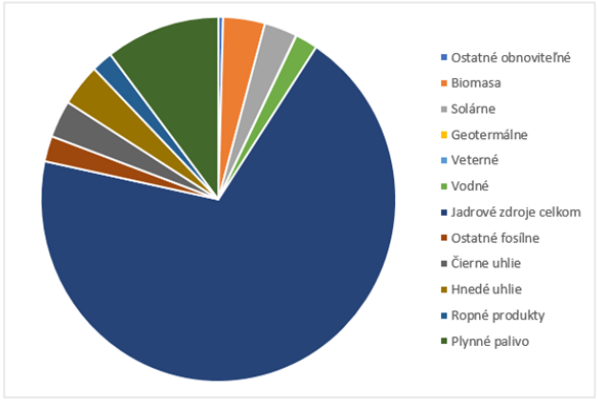
	serve as an example of the organization of EC management (and control) bodies: Community bodies a. The highest body – the General Assembly, b. Executive body – Board of Directors, c. Statutory body – President of the community, d. Supervisory body - Supervisory Board. and others.
4.	
Circuits/ Specifications	4. Describe the known financing mechanisms of EC, the methodology of obtaining income and the way of keeping accounts in your company. Indicate the percentage of the given funding sources.
Example/ Utility Brief	Subsidies from the state budget, Subsidies from EU funds, Personal income from EC business Regional contributions and subsidies, Other (specify what?) Agenda kept in simple accounting or double accounting?
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: Known financing mechanisms for energy communities (EC) include subsidies from the state budget, subsidies from EU funds, personal income from EC business activities, regional contributions and subsidies, and other sources such as private investments or crowdfunding. Currently, a wide range of subsidy programs are being prepared, mainly from the budget of the European Union and the resources of the Inerreg, Horizon and similar programs, but also domestic support state and private funds, which in the near future will enable massive financing, especially for the establishment of energy communities, the purchase of technologies for their operation and education necessary personnel. We can mention, for example, the Modernization Fund, the National Recovery Plan, the Operational Program Environment, the Operational Program Technologies and Applications for Competitiveness, the Operational Program Just Transformation or even the MIT Effect III program. In addition to subsidy programs, returnable financial assistance tools are also offered in the form of preferential loans, bank guarantees or a combination thereof. It is necessary to mention above all the financial instruments of the European Investment Bank (EIB), instruments of repayable financial aid related to energy communities will also be offered by the National Development Bank. As a non-profit company, the methodology of generating income is described in the business plans of each EC. It describes target income and expenses and the methodology for achieving these numbers. The accounting method is the same as for any other limited liability company. The main income will be cost sharing among members. When opportunities arise,

	they also plan to use project funding, including European and national research projects. They also intend to involve researchers and thus use their equipment in the energy community as well. Some partners presented their own financing system, namely: Generally available financing models can be • Financing by building owners - reserves, financing by co-owners. • Funding by participants - invest together • Financing by third parties – energy suppliers or external service providers with the following rules: • The parties involved have established an association (purpose of the association: construction, preservation, maintenance and operation • The roof is rented by the owner or a community of owners • The association is therefore responsible for the system and is the operator • The distribution of financing costs and the tariff is defined in the articles of association • Optional: Association members pay an investment share and in return receive the right to purchase electricity Some countries currently have no relevant and significant access to external finance and subsidies. A significant majority of energy communities, since they are legal entities according to the legislation in the given region, maintain a double system of accounting and must comply with all related laws and regulations on taxes.
SUMMARY:	From the individual descriptions, there is a fairly clear agreement that ECs can obtain subsidies and support funding (according to the possibilities, programs and challenges of individual domestic countries), furthermore, they have the opportunity to use private and European mprojects, and they mostly lead (with regard to the legal status in the legislation) double accounting, and at certain more significant limits of financial turnover, they are also obliged to submit to an accounting audit. Generally available financing models can be • Financing by building owners - reserves, financing by co-owners. • Funding by participants - invest together • Financing by third parties – energy suppliers or external service providers with the following rules. Several partners are only at the beginning of building EC and rpeto do not have the possibility of obtaining financial external support, which is a relatively negative situation. The option is only to draw specific and tied funds (for example, for photovoltaics, building insulation, etc.), which supports production in the given EC, but does not allow the initial professional start-up and stabilization of the given community on the energy market.
5.	

Circuits/ Specifications	5. Are ECs obliged as non-profit organizations to submit annual tax returns to the state tax administration? Is it sufficient for the EC to submit only the Annual Report to the relevant register each year?
Example/ Utility Brief	In particular, state whether there is a separate way of recording and registering tax statements in your country? Also to state whether the book closing is approved by the EC authorities as well as an independent auditor according to the regulations in the country?
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: According to the partial statements of individual partners (in more detail in the table for task A.T.1.2 in the appendix, the following findings apply: Annual tax returns must be submitted by May 31 each year. The annual financial report must be submitted to the relevant register every year. It is the same as any other limited company. The annual membership meeting approves the financial statements. The Energy Community is considered a legal entity that carries out energy activities. Given that energy activity is considered an economic activity, it is necessary to submit a tax return to the state administration for income tax. In most countries, the EC is also obliged to submit an annual financial report to the relevant register every year. At the same time, they are required to draw up an Annual Report on the activities of the non-profit organization by June 30 of the following year at the latest and submit it to the register of annual reports. ES is considered a legal entity that carries out energy activities. Due to the fact that energy activity is considered an economic activity, it is not necessary to submit a tax return to the state administration for income tax. The final financial report must be approved by the assembly of the association. The Law on Profit Tax defines the method of filing a tax return, specifically in the conditions of a given country. An independent auditor is not necessary if the financial turnover limit specified in the given country is not exceeded. For example, cooperatives are required to file an annual tax return and report their income, expenses and tax obligations to the state tax administration. This includes corporate tax returns, business tax returns and any other relevant tax filings based on their activities. As corporations, cooperatives are required to keep accounts under the Corporation Tax Act and the Income Tax Act. Cooperatives are generally subject to corporate income tax unless they provide services exclusively to agricultural businesses owned by their members. The corporate income tax rate for cooperatives is 15 percent. In some countries (for example, Slovenia), the possibility of participation of energy communities or cooperatives in the electricity market is established in domestic regulations, which, among other things, stipulate that energy communities can operate directly on the electricity market.

	Self-supplying end-customers then have the right to act as active customers without being subject to unreasonable or discriminatory market entry requirements, procedures and payments, as well as non-cost-reflective network charges. In addition, so that active customers can act directly on the electricity markets, i.e. j. sell to other system users or buy from other system users on the basis of an open contract and conclude concluded contracts, they must join the balancing system, except in the case of exchanges of electricity between active customers belonging to the same member of the balancing system and in the case of an open contract with the supplier.
SUMMARY:	From the processed findings and statements of the partners of the task, a generalization emerged, namely that energy communities in most cases are obliged not only to file annual tax settlements and annual financial statements, but also in specific cases to submit to a hops donation audit and to save and submit to official registers Annual or evaluation reports. This does not affect the obligation to pay taxes and fees directly related to the production and distribution of energy and the like.
6.	
Circuits/ Specifications	6. To what estimated extent do the ECs operating at the same time in your country participate in the domestic energy mix of the country???
Example/ Utility Brief	Write a justified professional estimate in your country about the share in % and especially with regard to renewable energy sources in the national energy mix. List the official information sources (link...) about the energy mix from binding state documents.
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: In this issue, many specific data appeared, from which we select the statements and comments of the concerned partners on the issue to illustrate the issue: According to the partial statistical report prepared by the Department of Analysis and Data Support of MPO Concepts, in 2022 the share of gross final energy consumption from renewable energy sources (RES) in the Czech Republic, calculated according to the international methodology of EUROSTAT (SHARES), was 18.2%. Within this, electricity consumption from RES accounted for 15.5%, RES accounted for 7.2% of transport consumption and 25.8% of final heat consumption. Based on the information provided and with regard to current challenges, it is estimated that by the end of 2026, ECs operated in the Czech Republic will contribute approximately 9% to the installed capacity of photovoltaic power plants in the national energy mix. This estimate takes into account the growth of ES, focusing mainly on sources connected to the low voltage (LV) level with an output of up to 100 kW. A survey of Austrian grid operators showed that at the end of 2021, five renewable energy communities and one citizen energy community were in

	operation. If we look at the reporting period of 2022, 161 renewable energy communities and four citizen energy communities have already been operational to date. 31 December 2022. Three of the four ECs worked in the distribution network area of Wiener Netze GmbH and one in the network area of Kärnten Netz GmbH. The survey also asked if and how many energy communities were operating in the network area of the respective network operators as of June 30, 2023. This brought the total to more than 600 ECs and Citizens ECs during this period. There are currently more than 1,190 ECs in Austria in 2024, but the estimated % share of ECs with respect to renewable energy sources in the national/regional energy mix is not currently available. Although Austria's renewable energy mix is currently at around 34%. So for the future development of the energy mix according to RED III, where it is necessary to reach 42.5% by 2030, ECs, if the current development continues, will be one of the important parts in achieving this goal. According to Eurostat, gross primary energy consumption in Croatia in 2021 was 9.61 Terrawatt-hours (TWh) and final energy consumption was 8.1 TWh. Renewable energy sources make up 31.33% of Croatia's energy mix, while 53.47% of total electricity production comes from renewable sources, primarily from large hydropower plants. Croatia imports approximately 54.54% of its total energy consumption annually: 74.48% of natural gas, 78.34% of oil and oil products, and 100% of its solid fossil fuel needs. Croatia also co-owns the Krsko nuclear reactor in Slovenia, which is part of its energy mix as imported electricity. In 2022, Slovenia produced 4308 GWh of electricity from RES. It is encouraging to see that the production of electricity from solar power plants has increased in recent years, mainly due to the increase in self-supply. In 2022, production increased by 49% compared to 2021. However, the majority of electricity from RES is still produced in hydropower plants, which are traditionally the main renewable source of electricity in Slovenia. The introduction of the RES and CHP support scheme in 2009, together with the introduction of self-supply of electricity from RES, motivated investors to invest in the production of electricity from other RES, primarily solar power plants, but also including biomass and biogas, which are not directly dependent on weather factors. The development of electricity generation from RES plays a key role in reducing greenhouse gas emissions. Since this is one of the most important activities for achieving the common goals of sustainable development of the energy sector, EU countries can introduce a number of measures and incentives to support the development of this type of production, which are considered state aid. Since 2009, Slovenia has had a state aid scheme, a scheme to support the production of electricity from RES and CHP, which comes in the form of guaranteed prices and premium tariffs. In addition to state aid, funds for the development of RES are also available in the form of investment incentives, mostly within the framework of cohesion policy measures. In 2022, grants were made available to co-finance the purchase and installation of solar energy production equipment. With around 86%, energy communities in Germany are primarily involved in the production of electricity (electricity (photovoltaics, wind) and heat (biomass), but also in energy distribution as well as in investments in renewable energy. Less often, energy communities act as grid operators (bioenergy villages, "Bioenergiedörfer").

	Energy mix of Slovakia currently (official statistical data for the year 2023) atomic energy/nuclear accounts for up to 60%, fossil energy sources (gas and coal-based) for up to 18%, hydropower from hydropower plants for 15% and follows and finally solar energy worth only 3.0% and energy generated by biomass processing amounting to 4.0%. This is an important figure in which it is clear that concentrated energy from central sources prevails in production, which makes it difficult to build energy communities in the future. Due to only the initial phase of development and establishment of the EC, these contribute only to a small extent to the Slovak domestic energy mix, according to a qualified estimate, approx. 1-1.2%. This is mainly EC in the form of various housing associations, linked to industrial producers in cities and towns in the area of RES.
SUMMARY:	From the individual statements and descriptions of the partners when mapping this issue of the share of currently functioning ECs in the domestic energy mix of the given country, it can be summarized that: Where ECs already exist and are involved in energy production and distribution, although only a minimal (a few percent) can be deduced, their importance and share in the domestic energy mix is already growing, especially when influencing the change in energy ratios based on renewable sources. An example can be the situation and graph at PP12, where Slovakia's current energy mix with a view to 2030 can be simply displayed on a circular graph as:  Color spectrum of narrow fields - RES (biomass, solar, wind, geothermal) Dark blue large field - nuclear energy Light blue field - petroleum products Brown field - coal-based fossil resources Dark green field - gaseous fuel At the same time, at the current level of energy development in the European area, this figure develops very similarly in many countries and these are comparable parameters.
7.	
Circuits/ Specifications	7. Do EK also provide energy distribution, storage and energy production at your place, and in what proportion?
Example/ Utility Brief	In particular, state whether the EC structure at the given stage of development in your country allows, in addition to energy distribution and customer networking,

	activities such as storage and the actual production of energy from RES? Provide, where appropriate, an estimate of the percentage ratio of individual components of the activity.
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: In this issue, regarding question 7, many specific data appeared, from which we select the statements and comments of the concerned partners on the issue to illustrate the issue: The Czech Republic has introduced legislation governing energy communities that distinguishes between energy communities (CEC) and renewable resource communities (REC). The aim of these regulations is to ensure compliance with EU principles and to provide a framework for effective control and proximity requirements adapted to Czech conditions. ECs in the Czech Republic can perform a range of activities, including distribution, storage and production of energy from renewable sources. Community electricity sharing allows individuals to use renewable energy sources, facilitated by community suppliers. Members can reduce their bills by receiving shared electricity, and communities themselves can become licensed suppliers. According to Hungarian legislation, "ECs may, inter alia, engage in renewable generation, supply, consumption, aggregation, energy storage, energy efficiency services or charging services for electric vehicles or the provision of other energy services to their members or shareholders". In Hungary, all ECs are in the setup stage and have not yet started trading in energy. ECs in Austria currently provide the possibility to produce, store, consume and sell energy. However, these activities are subject to specific legal and technical conditions that apply to each individual energy community. Members of energy communities use self-generated energy to cover their own energy needs. The electricity produced is consumed locally, leading to a decentralized energy supply. Discount: Surplus energy that is not consumed by the members of the energy communities can be sold. Currently, it is standard practice for energy communities to return unused energy to their members, who then sell it to third parties such as energy companies (EVU) or the Austrian electricity market (OEMAG). Similarly, in Slovenia, the legislation defines a civil energy community as a legal entity that can deal with production, including production from renewable sources, supply of electricity, its consumption, aggregation, energy storage, energy efficiency services or the provision of electric car charging services or the provision of other services. energy services to its members or associates. The distribution and storage or production of energy in the current state of development in Slovakia is actually only in the beginning, but several integrated business and implementation projects have already been developed and approved, and from July 1, 2024, the range of possible methods for calculating

	sharing will be expanded using the dynamic method of monitoring and co-participation - operated on the functioning of EC. The main problem for many years was ensuring the stable operation of the transmission system and the degree of local involvement of the EC in it. SEPS issued the conditions for the procurement of support services and the rules for EC participation in them and requires that ECs pass the conditions for procurement and involvement in energy network services in Slovakia within the qualification phase of their competence.
SUMMARY:	The result of the findings and statements of partners is to comment on this task that, although in a minimum current proportion, but the already emerging and built energy communities and communities are actively involved mainly in the implementation of renewable energy sources in distribution, storage and starting production itself. Even a still changing and forming legislation in the country allows it. The percentage can be spoken of in national proportion to total energy production only about 1.5 to 2.5 %, but within these values due to the effects of energy communities significantly increase the ratio of Zenergy production itself from renewable sources, unlike large producers based on a basis based on the basis based on the basis based on large sources. conventional energy sources such as gas, coal and atomic energy.
8.	
Circuits/ Specifications:	8. What internal models of management and distribution of tasks and functions within the EC ensures and to what extent the EC management?
Example/ Utility Brief	Write and draw a general model/diagram of a typical typical EC organizational structure in your country. Indicate whether, in addition to founding and registration documents, EC also has separate institutes and organizational or operating regulations for functioning?
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: The choice of organizational form is a central element in the creation of energy communities (EC). In addition to the background of possible organizational forms, this abstract focuses on two organizational forms, association and cooperative, with their respective characteristics. Association, community or cooperation (EC) structures best correspond to the idea of civic participation. Associations have lower financial hurdles in terms of establishment and operating costs, members are not personally liable in case of insolvency, while cooperatives guarantee at least their share. When modeling the activity of energy communities, various methods of energy allocation were considered, including static, static expansion, dynamic and static-dynamic methods. Each method has its advantages and disadvantages, the choice of which depends on factors such as community size, energy demand and investment subsidy support.

	In practice, the support of investment subsidies significantly affects the functioning of energy communities and has an impact on the installed capacity of production equipment. Although subsidies stimulate the development of renewable resources, they can lead to oversizing of production facilities, especially in the case of larger community projects. General model of a typical EC organizational structure The typical organizational structure of EC, for example, in the Czech Republic consists of the following components: • Founders and participants: Persons or entities responsible for initiating and participating in the energy community. • Board of Directors: Board of Directors: oversees the strategic direction and decision-making process of the energy community, including allocation methods and investment strategies. • Technical Team: Responsible for managing the technical aspects of energy generation, distribution and storage within the community. • Finance team: The finance team deals with financial matters, including budgeting, accounting and securing funding or investment subsidies for community projects. • Legal and Compliance Team: Ensures compliance with applicable laws, regulations and administrative procedures governing the operation of energy communities. • Community Officer: Facilitates communication and collaboration with community members, stakeholders and relevant authorities. A layered governance structure may not exist or may not be suitable for civil partnerships (small energy communities). This means that members are responsible for their own property and decisions must be made unanimously. In this way, at least formally, they guarantee broad active participation, while cooperatives only guarantee active participation in the distribution of benefits and the selection of management or supervisory bodies. It is highly probable that the first internal models of management and distribution of tasks and functions within the EC are ensured, and the biggest initiative in creating a community is usually taken by such a more experienced individual, collective, or in the case of members of legal entities, such representatives of groups who in the future and after the elections to management bodies will be individually entrusted with the first difficult tasks and will create their own EC management. From a technical point of view, such EC management often faces the first basic question: how will it be possible to store unused energy, or transfer it to customers outside the community? It is also necessary to find a fair and collectively acceptable own system and a solution, for example, in the case that if a participant has a higher energy consumption, can he also purchase energy from another supplier?
SUMMARY:	To ensure the effective and sustainable development of community energy in the Czech Republic, several key steps are recommended: Financial incentives: Provide adequate financial incentives for ES participants and founders to optimize production facilities and effectively prepare for project operation. Flexibility in connection: Allow flexibility in connecting production plants to reflect the actual required reserve power of the network, avoid oversizing and ensure

	efficient energy distribution. Quality assurance: Emphasize the competence and quality of installation and consulting companies involved in the preparation and establishment of energy communities in order to ensure reliable and efficient operation. The recommended overall procedure for creating an Energy Community (EC) at the local or regional level can be determined as: - Mapping of energy consumption at a defined location. - Mapping of local energy potential. - Start of preparations for the construction of new energy sources in the vicinity of the site in order to cover the consumption of the entire defined area. - Maximum use of subsidy programs for building resources and the necessary infrastructure. - Creating a suitable environment and ensuring capacities for community energy. - Preparation for the creation of an energy community in the given location. - Ensuring significant aid and financing for energy development communities.
9.	
Circuits/ Specifications	9. How can you describe the internal business models (diagram or picture) in the functioning of EK at your place in the framework of communication and energy trading with consumers and customers within the given community in the region or relevant area of operation of EK?
Example/ Utility Brief	Introduce a exemplary model model of business communication and processing of customer requests in EC and subsequently energy supply with an emphasis mainly on the RES base, but also other energy sources in the given area. State how, in your opinion, EL maps and monitors the needs and expectations of community members and its customers/subscribers in the given area? Give an example of how EK corrects its energy supplies depending on changes in consumption by customers?
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: At this point, to describe question 9. It is necessary to highlight the solutions and statements, mainly to the partners: In the Czech Republic, approximately 160 municipalities and towns are actively involved in the support and implementation of various systems for the production of electricity or heat. Among them, the most widespread are rooftop photovoltaic power plants and biomass heating devices. However, municipalities also operate water, biogas or wind power plants, thereby contributing to a diverse energy mix. Their total installed capacity is 24 MWe (electricity) and 116 MWt (heat). KESZ energy community in Hungary: Currently, only founding members (project partners) are members of the energy community. However, as they expand,

	these partners will maintain relationships with members of the energy community: they will operate customer service and deal with complaints. There will be 24/7 customer service and a service guarantee. The "Energy Data Exchange" (EDA) platform facilitates communication and energy trading in Austria within the energy communities. The EDA User Portal serves as a web-based task processing platform for energy service providers and the energy community and provides easy access to energy data exchange. It offers an integrated process environment for direct messaging, receiving and processing. Participation in the user portal is free for energy service providers and energy communities. Community projects in Slovenia, for example, usually have a bottom-up approach, which means that there is a lot of interest in the project within the local community, where people know each other. The problem of solving high electricity prices through community self-supply is crucial for municipalities and their public institutions, such as schools, kindergartens, but also public benefit enterprises that operate water treatment plants, gas stations, etc. schools, where electricity production is high and consumption is low in the summer, during the annual school holidays, it is ideally connected to water pumping stations, water treatment plants, where energy consumption is the highest in the summer. An exemplary model of business communication and the processing of customer requirements of the energy community in management practice, and subsequently also the display of production in the form of an emphasis on the renewable energy base, are the subject of a separate part of this document, namely the output at the end: D1.2.1 Catalog of the best operating models for managing energy communities
SUMMARY:	Summarizing the findings, the rule is to correct energy supplies in practice depending on changes in consumption, while energy communities can adjust their energy supplies by adjusting the participation factor or changing the membership status. The participation factor indicates the percentage of your consumption or production that you contribute to the energy community. It determines the maximum percentage of generated electricity that can be supplied to the energy community, or the maximum percentage of your electricity consumption covered by the energy community. Participation in several energy communities makes it possible to increase the share of excess electricity sold or purchased from energy communities. Adjusting the participation factor within the energy community can help limit high consumption, making dynamic allocation more attractive. Participation in multiple energy communities allows members to better manage electricity supplies and promote the use of renewable energy. The Energy Community in Croatia, as a legal entity established by the role of its members, invests as much as possible in photovoltaic power plants on the property of its members. In addition to the founding roles of its members, the legal entity of the energy community also acquires debt sources of financing in order to balance the capital value of the investment. The legal basis of the investment can be, for example, an agreement on the lease of members' property. This is also an approach where the legal entity of the energy community replaces

	the acquired right to invest in foreign property with compensation (rent) to the real estate owner (member - but the question immediately arises whether the legal entity of the energy community could enter into real estate lease agreements with other citizens who are not members energy community). The legal entity of the energy community from the price of energy sold to its members settles the debt sources of financing and reduces its income and expenditure account to zero, as it keeps business books according to the rules for non-profit organizations. As part of the possibility, the members of the energy community generally optimally obtain their own sources of financing (own and foreign - debt) in order to invest in a photovoltaic power plant on their land. Also, for the purpose of sharing excess energy, they conclude a contract with the legal entity of the energy community, in which they precisely define the rules of energy sharing. In Slovenia, active consumers have the right to act on the market directly or through aggregation, the right to sell electricity from their own production, including on the basis of power purchase agreements, and the right to participate in flexibility and energy efficiency programs. If active customers want to act directly on the electricity markets, i.e. j. sell to other system users or buy from other system users on the basis of an open contract and conclude closed contracts, active customers must be required to join the balancing system, except in the case of exchanges between active customers belonging to the same member of the balancing system and in the case of an open contract with the supplier. In the conditions of the Slovak Republic, flexibility aggregators are a solution to reduce consumers' costs for electricity and carbon footprint at the same time. These can optimize and manage the operation of flexible devices of both consumers and manufacturers in real time. The task of the aggregator will be to aggregate non-necessary electricity from consumers and smaller providers and then provide it to the transmission system. As an example, we can cite municipal heating plants, which, while producing heat, also produce electricity, which is a tremendous opportunity for the establishment of the relevant EC, also with the participation of the local government.
10.	
Circuits/ Specifications	10. Indicate what basic theoretical information databases are objectively devoted to EC support and development in your country?
Example/ Utility Brief	Write possible databases for international monitoring and comparison of current data on EC in your country. Submit an overall overview of currently known and registered ECs in your country (names, place of operation and possibly also estimated importance/position) on the relevant energy market in your country.
Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: For example, the Ministry of the Environment (MŽP) in the Czech Republic announced a call for the establishment of energy communities to support pilot

	projects in the country. 83 registered energy communities applied for the call, which closed on January 31, 2024. The MoE plans to support at least 40 of these communities with a total allocation of 98 million crowns. This initiative, after the adoption of the lex OZE II amendment, means a fundamental step forward for the development of community energy in the Czech Republic. In order to create a model of "energy communities" in Austria, a platform consisting of the coordination office of the Climate and Energy Fund and partners from nine federal states was created. The platform serves as an advocacy group for the model and also runs a home page that provides background information, online company formation guides, contract templates and frequently asked questions. A work program for the period 2025-2027 is currently being planned, which will, among other things, focus on the opportunities offered by the new Electricity Act. The Energy Industry Data Exchange, a joint venture of network operators in Austria, is responsible for the data exchange of the energy communities in Austria. The use of standardized protocols within the EDA infrastructure ensures that market participants do not incur any additional costs for the maintenance of various interfaces. Data is exchanged in a standardized format, which means that data processing remains uniform for all participants. The processes of processing and responding to received messages are also standardized. Data processing is also somewhat standardized so that the effort required to process messages is minimized. The EC Forum in Croatia brings together organizations and initiatives that are actively working to establish their own energy community or otherwise contribute to the development of energy communities in Croatia. The mission of the Forum is to provide citizens with direct ownership and the right to decide on the production of their own energy and active participation in the energy market through energy communities, and thus the implementation of new renewable energy production facilities with a total capacity of at least 1 GW by 2030. In Slovenia, it currently has a RES Info Point specifically dedicated to the integration of renewable energy sources, which provides comprehensive information at the national level and serves to accelerate investments in the field of renewable energy sources. It was established by Borzen Ltd, a Slovenian electricity market operator, which already operates the Center for RES/CHV to support the use of renewable energy sources in accordance with the Regulation on the establishment of the tasks of the contact point for support on the use of renewable energy sources. The aim of the point of contact for the promotion of the use of renewable energy sources is to provide information on the implementation of renewable energy projects in one place, thereby facilitating investments in the field of renewable energy sources. The point of contact guides the investor (public or private) through the procedures for obtaining permits and other actions necessary for the construction, reconstruction, restoration or operation of the production facility and its connection to the network, as well as the procedures for support programs.

	ECs are created in Slovakia only gradually, but in order to ensure organization, management and management, the National Platform of Energy and Environmental Clusters and Associations of Slovakia was created gradually from 2022 under the leadership of the National Energy Cluster NEK as a leader, which covers 8 industrial organizations with national and regional scope. These are aimed at building energy local and regional communities, energy and environmental aspects of project solutions and support for distributors and producers of energy based on RES, mainly from the environment of SMEs, housing associations and municipalities.
SUMMARY:	The content and description of the data from the solution to question 10 of the questionnaire in the table for task A.T.1.2 can be briefly characterized as the existence of a wide range of activities, state and private organizations, funds and associations to support energy communities and the energy policy itself in which partner country b within the project NRGCOm and also information on the overview of research and professional activities, possibly publications and newly created information databases (listed in the next part of this analysis). Despite the fact that the building of energy communities and communities, especially with an emphasis on the implementation of renewable energy sources in their production and distribution to end customers and community members, is generally only in the beginning, it is clear that a high degree of professional organizational activity already prevails for the successful development of this issue.
Conclusion Summary	
Circuits/ Specifications	**Conclusion/Summary** List any other models, interesting points and peculiarities of the business functioning of the EC management method in your country.
Example/ Utility Brief	List sample or case studies and information sources) Publications and links...) and similar interesting things. We also recommend adding interesting home-made visual material or tables with relevant and current statistical data)

Description of findings/ analysis:	The following findings emerged from the description and specifications of the individual partners regarding this problem/question: Models and points of interest addressed in Austria: • Civic energy projects: Civic energy projects are an important part of Austria's energy transformation. They enable citizens to actively participate in the production and use of renewable energies. Energy communities provide a suitable organizational form for such projects because they encourage participation and involvement of members. • Cooperation with local businesses: Many energy communities work closely with local businesses to implement renewable energy projects. These collaborations contribute to the creation of local value and strengthen the regional economy. • Innovative financing models: Many energy communities rely on innovative financing models to implement their projects. These include crowdfunding, cooperative actions or civic participation models. samples: • EEG Lechtal: The Lechtal Energy Community was the first cooperative of its kind in Tyrol. He has already motivated hundreds of people to get involved in civic energy projects. The municipalities in Lechtal plan to integrate drinking water power plants into the energy community to ensure a sustainable regional energy supply. • EEG Grätzl Energie: The energy community Grätzl Energie in Vienna works closely with a metal processing company that operates a photovoltaic system on its roof. Surplus energy is supplied to the energy community and distributed to private consumers. • EEG Wolfsberg: The municipality of Wolfsberg in Carinthia has established an energy community to supply historic buildings with green energy. Since these buildings cannot be equipped with photovoltaic systems, the municipality uses PV systems on its own buildings. In order to facilitate energy communities, subsidies and loans, as provided by Slovenia, are extremely important. The establishment of energy communities here is accelerated by subsidies and calls for co-financing issued by the Ministry of the Environment, Climate and Energy, Borzen and Eko Sklad. In addition, funding can be obtained through international programs such as Horizon2020, Interreg, Life, ELENA and others. The RES information point, specially dedicated to the integration of renewable energy sources, will facilitate and speed up the development of sustainable energy projects. For the installation of renewable electricity generation equipment on private or public land, the consultants will provide expert advice through the necessary permitting procedures and sequence of support schemes. The reference to the case study in Romania is also very stimulating, as the Energy Community in the big city of housing estates. This model sheet has been compiled based on real, demographic and consumption data of Grădina Apusului Block in Sector 6, Bucharest, which is in an advanced stage of development on its way to becoming an energy community. Type of municipality: large urban, block population, average age 45 years, average income 4,000 RON/inhabitant, 60 apartments with an average number of 2 tenants and an average area of 64 m2, grouped into three block staircases of

	20 apartments/block. Block with a height of 4 floors. Average annual electricity consumption is 1,200 kWh/household + 1,104 kWh/year for lighting common areas. Average annual heat consumption 12,660 kWh/household (Source of heat supply - 87% centralized heating, central heating, 13% individual gas consumption). The project itself shows very interesting tendencies and the viability of the solutions as a model for other organizations. A manifestation of the high level of development of the management of energy communities is also the system applied in Germany as Virtual (energy) communities are being developed, implemented by the Bavarian company "regionalwerke". It is based on the idea that several municipalities have established a public agency ("Anstalt des öffenltichen Rechts") that would jointly carry out economic activities in various areas, including, but not limited to, the supply and operation of energy and electricity networks. For each of these areas, the municipalities established a subsidiary company (GmbH & Co. KG) as a joint public agency. Thus, electricity production and energy distribution are organized as subsidiaries. The advantages of this form of energy communities are that all citizens can be involved (regardless of investments). Furthermore, the citizens of the municipalities make local and democratic decisions regarding the supply and distribution of energy in the region. This increases the acceptance of renewable energies and offers the possibility for citizens to benefit financially from the gains of the energy system. At the level of municipalities, they benefit from being able to collaborate, share bureaucratic and administrative burdens and transfer knowledge. It also allows electricity prices to be determined at the municipal level. A manifestation of the high level of development of the management of energy communities is also the system applied in Germany known as virtual (energy) communities, implemented by the Bavarian company "regionalwerke". It is based on the idea that several municipalities have established a public agency that would jointly carry out economic activities in various areas, including but not limited to the supply and operation of energy and electricity networks. For each of these areas, the municipalities have established an operating subsidiary as a joint public agency, and electricity generation and energy distribution are thus organized as subsidiaries. The advantages of this form of energy communities are that all citizens can be involved (regardless of investments). Furthermore, the citizens of the municipalities make local and democratic decisions regarding the supply and distribution of energy in the region. This increases the acceptance of renewable energies and offers the possibility for citizens to benefit financially from the gains of the energy system. At the level of municipalities, they benefit from being able to collaborate, share bureaucratic and administrative burdens and transfer knowledge. It also allows electricity prices to be determined at the municipal level.
SUMMARY:	Without a special evaluation comment.

Circuits/ Specifications:	**Other additional documents and information of individual partners**
Description of findings/ analysis:	In this additional part of the analytical table for task A.T.1.2, the partners PP5 – IRENA and PP12 – NEK specifically described interesting data of a technical, operational and organizational nature for the explanation and description of the domestic issues related to the topic, from which we briefly select the main ones: **PP5 - IRENA** described the specification and categorization of Energy Communities in Croatia, namely: • Categories of energy communities - according to the installed capacity and according to the type of energy consumption, e.g. residential or for an energy carrier, e.g. electricity, heat. According to nominal voltage, category of consumption, nature and type of operation (household, company). In doing so, they detailed the cohesion policy, the methodology for obtaining subsidies, the creation and operation of the national modernization fund in the country for the EC and the fund for environmental protection and energy efficiency, as well as the rules for applying laws and regulations under the responsibility of the Ministry of Economy and Sustainable Development and the challenges and competitions organized by it for the involvement and co-financing of many projects in the field of energy, environmental protection, water supply, waste disposal, digitization, etc. The authors behind PP5 – IRENA also list the implemented European and dfomation regulations and rules on the energy market that apply to the EC, as well as the rules and required documents and fulfilled criteria for establishing such a community in the organization system in Croatia. The analysis and description of the issue PP5 – IRENA also applies to domestic tariffs and payment systems, but also to specifying the main technical and organizational obstacles related to energy communities in the country. In conclusion, the authors' opinion is expressed that the interest of citizens and organizations in establishing energy communities in Croatia exists, but the legislative framework is ready, but it is not enforceable in practice. In addition to an insufficiently high-quality and unenforceable basic legislative framework, other technical documents, regulations and processes that should define in detail all the elements necessary for the creation, development and growth of energy communities in Croatia are missing or insufficiently well prepared. _____ **PP12 – NEK** characterized the following problems under the title: "Six things you should know" with a brief summary: **SIX THINGS YOU SHOULD KNOW** According to the regulation on renewable energy sources, energy communities generally have to follow the same rules for protecting the rights of consumers as traditional energy suppliers. However, since the establishment of energy

	communities may require high financial investments, it is understandable that there may be additional barriers to entry or exit from the community, for example for consumers to become investors if they want to be supplied with such energy, or the length of time until this investment is made available to them. will return when they leave. Energy communities should clearly state these provisions on their websites and in their contracts. In order for consumers to feel comfortable entering energy communities, and for communities to thrive, it is important that they guarantee some basic consumer rights. Consumers should: • have access to clear and complete information before concluding the contract • to be able to compare the offers of different energy communities through independent price comparison tools • have access to effective ADR alternative dispute resolution systems • have the right to change the supplier and guarantee that they will not be disconnected • use a higher standard of customer service • be sure that their data is handled in accordance with the provisions of the GDPR. **In practice, EC mainly requires:** 1. Provide clear pre-contract information and create a standardized template for energy community websites 2. Ensure that the energy community uses price comparators 3. Provide consumers with information on how to file a complaint and resolve disputes 4. Ensure that consumers are informed about changes in the relationship with the supplier and the possibility of disconnection 5. Ensure quality services to customers 6. Ensure compliance with the regulation on the protection of personal data (gdpr) in the area of data processing
SUMMARY:	Both partners agreed on very similar technical and organizational data and a description of the current state of requirements in their own countries for the introduction and building of energy communities and compliance with special efficiency conditions based on renewable energy sources.

3. Conclusion

Brief summary of content	The analysis and presented results of task A.T.1.2 contain an overview of the current development of energy communities with regard to the application of renewable energy sources in their local and regional operations. At the same time, they point to the available organizational structures of the individual partners in the individual countries of the implemented sphere of this NRGCOM project. The analysis includes an analysis of 10 questions created specifically by the guarantor of the task to ensure an overview of the issue, as well as summarizing and opinions of individual partners on the knowledge being addressed. The following was found - a brief summary of the essential findings: 1. EC energy communities and EC communities are relatively uniformly based on valid EU legislation, and national legislation is also adapted to this. 2. ECs usually have the legal form of associations, cooperatives, or other non-business, but also business companies. 3. Everywhere, they are always registered as legal entities with related tax and accounting obligations 4. ECs are perceived as non-profit organizations only to the extent that they produce and distribute energy in a given area of activity for the purpose of an economic and environmentally and energetically efficient result, but fundamentally not for the creation of profit, regardless of whether they are cooperatives, commercial companies, corporations or foundations. 5. Energy communities based on the application of renewable energy sources in all monitored partner countries can be said to be legal entities that are: • based on open and voluntary participation, independent and effectively controlled by partners or members in the vicinity of renewable energy projects owned and developed by this legal entity; • whose partners or members are legal or natural persons other than legal persons performing economic activity and who are not SMEs; • whose primary objective is to provide environmental, economic and social

	benefits to its partners or members or the local areas in which it operates, rather than financial gain. 6. The analysis also provides basic explanations of the technical terms used and a description of the solution methodology according to the task processors. 7. ECs function in practice, depending on how relations between members are regulated in the relevant founding document, regardless of the country of operation, and how the goals of the community are chosen. In general, each member of the EC's highest body has the same weight of vote, which is enshrined in the statutes of the concerned EC or EC. 8. The mission after the establishment and creation of the EC or ES in terms of the internal organizational structure is ensured by other, lower governing elected bodies of the community. Their internal operation, such as the status and weight of the right to vote or a specific way of functioning, are precisely defined by the internal regulations approved by the above-mentioned highest authority, for example the Statutes of the EC. 9. From the analysis, there is a fairly clear consensus that ECs can obtain subsidies and support financing (according to the possibilities, programs and challenges of individual domestic countries), they also have the opportunity to use private and European projects and lead the majority (due to the legal status in the legislation). double-entry bookkeeping and, at certain more significant financial turnover limits, they are also obliged to submit to an accounting audit. 10. The analysis also confirmed the prevailing fact and that. where EK and ES already exist and are involved in energy production and distribution, it is possible to infer only a minimal (a few percent - approx. 1.5 to 2.5%), but already a growing importance and share in the domestic energy mix, especially when influencing the change in energy ratios based on renewable sources. 11. A significant finding from the statements of the project partners is that, although in a minimal current ratio, the emerging and established EC energy communities and EC communities are actively involved mainly in the field of implementation of renewable energy sources in distribution, storage and initial production itself, and the constantly changing and developing legislation in that country gradually makes it possible. 12. From the analysis, the rule can be stated that in practice you can correct your energy supplies depending on changes in consumption, while ES and EC can adjust their energy supplies by adjusting the participation factor or changing the membership status of their association/organization. The participation factor indicates the percentage of a member's consumption or production in the EC that it contributes to the community. It determines the maximum percentage of generated electricity that can be supplied to the energy community, or the maximum percentage of electricity consumption covered by the energy community. Participation in several energy communities makes it possible to increase the share of excess electricity sold or purchased from energy communities. It is a very suitable innovative factor for managing the energy economy not only of the given community but also

	of the managed region or locality. 13. Active consumers in several partner countries have the right to act on the market directly or through aggregation, the right to sell electricity from their own production, including on the basis of power purchase agreements, and the right to participate in flexibility and energy efficiency programs. If active customers want to act directly on the electricity markets, i.e. j. sell to other system users or buy from other system users on the basis of an open contract and conclude closed contracts, active customers must be required to join the balancing system, except in the case of exchanges between active customers belonging to the same member of the balancing system and in the case of an open contract with the supplier. 14. In their documents, the partners presented the information and the fact that the existence of a wide range of activities, state and private organizations, funds and associations to support energy communities and the energy policy itself in that partner country within the NRGCOM project, as well as information on the overview of research and professional activities, possibly publications and newly created information databases. 15. The analysis also mentions the advantages of the open organizational form of functioning of the EC, consisting in the fact that, in addition to the members themselves - business entities, municipalities and institutions, all citizens can be involved (independently of investments). Furthermore, the citizens of the municipalities make local and democratic decisions regarding the supply and distribution of energy in the region. This increases the real-life acceptance of renewable energy sources and offers the possibility for citizens to benefit financially from the gains of the energy system. At the level of municipalities, they benefit from the fact that they can cooperate, share the bureaucratic and administrative burden and transfer knowledge. It also allows electricity prices to be determined at the municipal level.
Evaluation of goal and activity fulfillment A.1.2	Objective of the task, defined in part 1. Baseline data on the fulfillment of the task of this document, namely the creation of a database of analytical data on possible and existing models and management and governance of stakeholders in the form of a document of the best REC operating models and future guidance and recommendations in the energy communities based on the application of renewable energy sources, in the opinion of the processor and the guarantor, the task was fulfilled in its entirety. The solution to task A.T.1.2 was managed by fulfilling partial tasks set by the processor PP12 – NEK, namely: 1. survey of the issue and mapping of the current state of the topic in terms of EU countries and policies. 2. Extensive theoretical research and mapping of the situation in individual countries participating in the project, based on internal information from individual PP partners in the form of an overview table with a questionnaire of 10 questions. 3. Elaboration of the professional output of the task A.T.1.2 and that

	D1.2.1 Catalog of the best operating models for managing energy communities. These sub-tasks were fulfilled in the document. Despite the fact that the building of energy communities and societies, especially with an emphasis on the implementation of renewable energy sources in their production and distribution to the final customers and the community members themselves, is generally only in the beginning, it is clear that a high degree of professional organizational activity already prevails for the successful development of this issue. It is possible to state responsibly that today the energy market and the industry itself are developing in a sophisticated, generalized, global and especially at a dizzying speed and with considerable turbulence. This development brings with it an increase in the complexity of problems and the identification of new effects of the functioning of operational and management systems in which managers and project teams find it increasingly difficult to navigate. However, various management tools come to their aid in the fight against this complexity. Looking at any well-known methodology or management tool, if even the most sophisticated operating model of the organization is analyzed, there are still perceptions and feelings, as if something is missing. The knowledge contained in this analysis not only gives a partial philosophical framework to the previous visions and ideas, but also materializes it into a specific project-oriented and set proposal of a new generation concept of modeling operational organizational systems for energy communities and communities whose key mission is to create an energetically and economically efficient environment of their own activity of members and customers in the given energy community. As the authors of this analytical work within the framework of the processing of task A.T.1.2 of the NRGCOM project, but especially of our long-term professional research, business and consulting activities in connection with our own comprehensive research, we see prospective areas of scope and development of this topic of operational models of energy communities in the future as: 1. Research of models of organizational systems and structures based on the innovative and inventive capacity of enterprises and organizations, mainly from the SME environment, specifically in the field of designing and applying RES to an appropriate degree in the production and the energy economy of energy communities and the production and distribution of energy within their scope. 2. The creation of inspection and management databases and subsequently also expert systems for the identification and quantification of innovative and product qualities in the energy operating system of enterprises in energy communities. According to the findings so far, this is a vast area that is still insufficiently and only relatively weakly researched and verified in theory and practice of system concepts with considerable potential especially for the issue of SMEs

	in connection with RES, in which we see another perspective for research and the design of energetically successful and environmentally friendly solutions and projects for businesses within energy communities.
Recommendations and suggestions	Several partners are only at the beginning of building EC and therefore do not have the possibility of obtaining external financial support, which is a relatively negative situation. It is only possible to draw specific and tied funds (for example, for photovoltaics, building insulation, etc.), which, although it supports production in the given EC, does not allow the initial professional start-up and stabilization of the given community on the energy market. To ensure effective and sustainable development of community energy, the following steps can be defined: Financial incentives: Adequate financial incentives for EC and EC participants and founders to optimize production facilities and effectively prepare for project operation. Flexibility in connection: Connecting production plants in such a way as to reflect the actual required reserve power of the network, to avoid oversizing and to ensure efficient energy distribution. Quality Assurance: Emphasis on the competence and quality of installation and consulting companies involved in the preparation and creation of energy communities in order to ensure reliable and efficient operation. The participation factor indicates the percentage of a member's consumption or production in the EC that it contributes to the community. It determines the maximum percentage of generated electricity that can be supplied to the energy community, or the maximum percentage of electricity consumption covered by the energy community. Participation in several energy communities makes it possible to increase the share of excess electricity sold or purchased from energy communities. It is a very suitable innovative factor for managing the energy economy not only of the given community but also of the managed region or locality. Adjusting the participation factor within the energy community can help limit high consumption, making dynamic allocation more attractive. Participation in multiple energy communities allows members to better manage electricity supplies and promote the use of renewable energy. Flexibility aggregators are a solution to reduce consumers' electricity costs and carbon footprint at the same time. They can optimize and manage the operation of flexible devices of both consumers and manufacturers in real time. The task of the aggregator will be to aggregate non-necessary electricity from consumers and smaller providers and then provide it to the transmission system. As an example, we can cite municipal heating plants, which produce electricity as well, which is a tremendous opportunity for the establishment of the relevant ES or EK and the gradual introduction and

	transition to renewable energy sources in the given local or regional energy mix. A manifestation of the high level of development of the management of energy communities is also the system applied in Germany known as virtual (energy) communities, implemented by the Bavarian company "regionalwerke". It is based on the idea that several municipalities have established a public agency that would jointly carry out economic activities in various areas, including but not limited to the supply and operation of energy and electricity networks. For each of these areas, the municipalities have established an operating subsidiary as a joint public agency, and electricity generation and energy distribution are thus organized as subsidiaries. Recommendation 1: To complete and repeatedly assess the synergy of the results of tasks A.T.1.1, A.T.1.2 and A.T.1.3, because their focus creates synergy for the possibility of professionally accurately describing the current state and development, but especially the future of EC and ES in the European space. Recommendation 2: In more detail, in the next step of the NRGCOM project, analyze the internal methodology for creating organizational structures and EC management and focus on the modern method of process and project management of these ECs in practice. Recommendation 3. Familiarize all project partners LP, PP and ž PP13 in detail with the content of this task and ensure promotion for the professional public by creating a publication on the topic "Analysis of the business models and stakeholder management of renewable energy communities". Suitable form - international conference and promotion on social networks and so on.
Contribution to the sustainability of project results	The recommended overall procedure for the creation of EC and EC at the local or regional level can be determined from the overall documentation of task A.T.1.2 as: - Mapping of energy consumption at a defined location. - Mapping of local energy potential. - Start of preparations for the construction of new energy sources in the vicinity of the site in order to cover the consumption of the entire defined area. - Maximum use of subsidy programs for building resources and the necessary infrastructure. - Creation of a suitable environment and provision of capacities for community energy. - Preparation for the creation of an energy community in the given location. - Ensuring significant aid and financing for energy development communities - Creation of an internal organizational system and sales technique in EC - Methodology for taking care of EK customers and for solving crises and problems - Audit of the internal energy economy of individual ECs in production

and energy distribution based on RES.

A significant contribution to the sustainability of energy systems based on RES under the application of EC and ES activities is the knowledge and summary of model models and the system of management and control of energy communities and the application of relatively universal business models of the management of these communities.
At the same time, it is essential to know that the overall assessment of the quality of the management and the functioning system is also dependent on the synergy of the results of the NRGCOM project within the fulfillment of the tasks A.T.1.1, A.T.1.3, mainly for defining and comparing the connections and differences of the appropriate legal and legislative environment and knowledge of public administration techniques and internal operating models to understand the motivations and expectations of members of the energy community.

In conclusion, it is necessary to recommend for the development of EC operational systems the application of such proposed principles to support energy efficiency to ensure the success of EC.

1.	Additional increase of energy efficiency in industry and industrial processes beyond modeled scenarios
2.	Introducing the circular economy and innovations into industrial processes, e.g. the use of hydrogen as an innovative technology (including the transition to hydrogen-based steel production in case of sufficient hydrogen supplies), including compliance with the Conclusions on BAT (best available techniques)
3.	To innovate energy- and material-intensive operations in the field of industry
4.	Transition to new, cleaner ways of producing energy and products, including through the use of energy sources without greenhouse gas emissions or by introducing the principles of a circular economy
5.	Reducing the use of fossil fuels in industry, on the condition that it is technically and economically efficient and this solution will bring a real saving in emissions
6.	Capturing and utilizing all waste heat from industrial and energy processes in a cost-effective manner
7.	Setting up financial support mechanisms from the EU and the Slovak Republic so that through them it is possible to finance as many decarbonization measures as possible and measures reducing energy intensity, including reducing the administrative burden when submitting projects
8.	Including the implementation of the Paris Agreement among the basic provisions in international trade agreements between the EU and third countries (the so-called "Paris clause")

		9.	The transformation should not jeopardize the competitiveness of the industry. It is therefore necessary to introduce support measures both for importers of products from third countries to the EU, as well as for exporters of products from the EU to third countries. As a support measure for importers of products, the supports the introduction of customs duties for imports depending on the carbon footprint (so-called carbon border adjustment / tax), but at the same time it is necessary to complete measures to preserve the competitiveness of exporters

4. Sources

Sources:	In this part, decisive information sources from individual partners are selected, which, along with the complete related text, can also be found in the descriptions of individual questions for the given partners in the Appendix - table for task A.1.2
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The document did not undergo language or review editing by the processor of activity A.T.1.2.

The document contains 11,137 copyright sheets in the sense of valid EU standards. The Google translator, available at: https://translate.google.sk/?sl=sk&tl=en&text=Dokument%20obsahuje%20...%20autorsk%C3%BDch%20h%C3%A1rokov, was used for text processing and translations %20in%20meaning%20valid%C3%BDch%20standards%20E%C3%9A.%20When%20processed%C3%AD%20and%20translations%20of%20texts%20with%20pou%C5%BE%C3%ADval%20translation%C4% 8D%20Google%20&op=translate

5. Appendix to activity A.1.2

Overview of individual processed inputs from partner countries

Taken verbatim from the submitted texts of individual partners

DESCRIPTION:

Circuits/Specifications:	Example/Utility Brief	
1. Legal form of official EC registration and organization in your country. Alternatively, in the case of several forms, also indicate the proportional representation in % on the market.	Legal entity, Civic association, Business entity, Non-profit organization, Other (specify what?)	

PP2 IMRO-DDKK, STRIA - Hungary

Currently two legal forms are recognised: cooperatives and non-profit limited liability companies. (The only difference between a regular ltd and a non-profit ltd is that the latter one cannot divide the extra income among the members, it must use it for a pre-defined purpose.)

So far there are three registered energy communities in Hungary and all are non-profit ltd. All are in the setup stage, as they were registered very recently (end of 2023, beginning of 2024). Interviews have been conducted with all three to complete this questionnaire. Pannon Energy Community: this is a small energy community established by the University of Pécs (primarily connecting buildings in the university campus.) Bábolna energy community: this is the first functioning energy community, established by the municipality and by the large power consumers of the city. KESZ energy community: established by a coalition of NGOs, the purpose of this energy community is to serve as example for other energy communities and to channel feedback to decision-makers.

The Bábolna and KESZ were set up as part of a national call for funding for energy community pilot projects. The government's initial plan was to fine-tune legislation and operational framework based on the experience of these pilot projects (altogether 20).

PP3 JAIP – Czech Republic

Energy communities can undertake the legal form of **associations, cooperatives** or **other corporations**. If the community chooses to take the form of some other corporation (than association or cooperative), it's internal relations must be defined in the founding legal act in such a way, so that they are substantially similar in content and purpose to the internal relations of an association or cooperative.

PP4 FORSCHUNG Burgerland - Austria

In Austria, there are various legal forms available for the registration and organization of ECs. The most common organizational and legal forms suitable for ECs include associations, cooperatives, as well as other legal entities with legal personality. Here is an overview of the typical organizational and legal forms in Austria:

Legal Form	Description
Associations	

- Verein	Association
Cooperatives	
- Genossenschaft mit beschränkter Haftung (GenmbH)	Cooperative with limited liability
- Genossenschaft mit unbeschränkter Haftung (GenmuH)	Cooperative with unlimited liability
Other Legal Entities	
- Gesellschaft mit beschränkter Haftung (GmbH)	Limited Liability Company
- Aktiengesellschaft (AG)	Joint-Stock Company
- Offene Gesellschaft (OG)	General Partnership
- Kommanditgesellschaft (KG)	Limited Partnership
- GmbH & Co KG	Limited Partnership with a GmbH

The proportional representation of these legal forms in the market is not readily available. However, based on general observations and trends, the distribution of EC registrations in Austria can be assumed to follow the following order:

1. Association (Verein)
2. Cooperative (Genossenschaft)
3. Other legal forms (GmbH, AG, OG, KG, GmbH & Co KG)

Factors for selecting the legal form:

Compliance with legal requirements:
Compliance with energy legal requirements from the Erneuerbaren-Ausbau-Gesetz (EAG) and the Elektrizitätswirtschafts- und -organisationsgesetz (EIWOG)
Possession of legal personality by the chosen organizational form
Main purpose of the activity lies in the promotion of the members and not in financial gain
Compliance of the participants with legal requirements
Costs and administrative effort:
Initial and ongoing costs
Effort required for establishment and operation
Ease of joining or leaving the EC
Requirements regarding profit determination and financial reporting
Necessary organs and participation:
Necessary (management) organs and external representation of the EC
Distribution and weighting of voting rights
Type and size of the EC:
Purpose of the EC and planned size or number of participants
Financial and organizational efforts associated with this
Liability and taxes:
Liability during operation and in case of insolvency
Options to limit liability
Long-term perspective of the EC

Since autumn 2021, it has been possible to establish and operate ECs. Based on initial applications and experiences, as well as new questions arising, knowledge and experiences are being generated. Even though the question of the organizational or legal form has a certain dynamism, as new experiences emerge during the ongoing operation of an EC, some statements can already be made about better and less suitable legal forms for ECs.

Associations and cooperatives have several advantages over other legal forms:

They are well-known in the population and enjoy a high level of trust.

They are already restricted in their ability to make profits by their legal form.

They are able to fulfill the energy legal requirements from the EAG and EIWOG.

They are focused on the promotion of their members.

It is worthwhile to conduct a "Quick-Check" of the criteria for the establishment and operation of an EC in advance and to consider all criteria. In essence, the two legal forms, association and cooperative, cover the relevant criteria, but there are differences in individual points.

Associations and cooperatives are particularly suitable as legal forms for ECs, but each has advantages and disadvantages in application, so the choice between them should be carefully considered. In general, associations are suitable for smaller, neighborhood or private ECs, while cooperatives are suitable for larger, regional ECs with a large, mixed membership and future investment plans. The mandatory audit of the cooperative by the auditing association provides additional security and, together with the equity contributions of the members, can lead to increased creditworthiness.

PP5 IRENA - Croatia

Energy communities in Republic of Croatia can assume following legal forms:
- Cooperatives (zadruge)
- Associations (udruge)
- Other profit and non-profit organizations

In accordance with Article 27, Paragraph 2 of the Law on the Electricity Market ("Official Gazette", No. 111/21 and 83/23), HERA publishes the Register of Citizens' Energy Communities.

First and for now only EC registrated in Croata, has been set up as association. EC named „Moja energetska zajednica MEC" has been set up on 2nd April 2024.

PP6 KSSENA - Slovenia

A review and analysis of the legal basis for electricity self-supply shows that there are currently two laws, adopted in 2021 as a part of the transposition of EU directives into Slovenian legislation and define energy communities in Slovenia. These are the Act on the Promotion of the Use of Renewable Energy Sources - ZSROVE (Zakon o spodbujanju rabe obnovljivih virov energije (Uradni list RS, št. 121/21, 189/21 in 121/22 – ZUOKPOE) and the Electricity Supply Act - ZOEE (Zakon o oskrbi z električno energijo (Uradni list RS, št. 172/21). Similarly, the Decree on the self-supply of electricity from renewable energy sources (Uredba o samooskrbi z električno energijo iz obnovljivih virov energije ((Uradni list RS, št. 43/22)) was renewed in 2022. With the entry into force of ZSROVE, the Energy Act ceases to apply; however, transitional provisions on self-supply and on the expiry and extension of the application of (by)laws remain in force, as set out in Articles 72, 84 and 94 of the Act on the Promotion of the Use of Renewable Energy Sources (hereinafter referred to as: ZSROVE). While ZSROVE and Decree on the self-supply of electricity from renewable energy sources (hereinafter referred to as: Decree) define Renewable Energy Community, the Electrictiy Supply Act (hereinafter: ZOEE) defines the Citizen Energy Community.

In Slovenia, consumers shall participate in a community self-suply on the basis of a contract in accordance with the rules of the law of obligations or by establishing a renewable energy community, which shall be a legal entity, under the conditions set out in Article 43 of ZSROVE. In cases where a legal entity is established, the most common is the establishment of an energy cooperative on the basis of the the Cooperatives Act - ZZad (Zakon o zadrugah (Uradni list RS, št. 97/09 – uradno prečiščeno besedilo in 121/21)).

The legal entity of the Citizen Energy Community within the meaning of the ZOEE is the cooperative. The latter is regulated by the Cooperatives Act, which defines the procedure for establishment of cooperatives, the adoption of the Act of Cooperative Establishment, which must include cooperative rules, the requirements for membership and termination of membership, the required bodies of the cooperative, the management of assets, the cooperative responsibilities, and provisions regarding the distribution of surpluses, etc.

In conclusion, in Slovenia consumers can participate in a community self-suply on the basis of a contract in accordance with the rules of the law of obligations or by establishing a legal entity. In the latter case, the most common form of energy community, RES community or citizen energy community defined as a legal entity, is the cooperative, which is also the simplest and most efficient form of legal form for community self-supply situations. If the project also involves a third party that owns or operates an electricity generating installation within the meaning of Article 40 of the ZSROVE, the final consumers are usually connected to a community self-supply on the basis of a contract.

PP8 REDASP - Serbia

In the Republic of Serbia, and in accordance with the recommendations of the European Commission, the Energy Communities are just preparing to come to life in the planned way. The founders of Energy Communities can be both natural and legal persons, as well as groups of citizens and other organizations, as well as residential ones.

- **For-profit legal entities**:
- Limited Liability Company (SRL);
- Joint Stock Company (SA);
- Cooperative Society (SC);
- **Non-profit legal entities**:
- Association
- Foundation
- Local Action Group (GAL)
- **Social Enterprise**

1. Limited liability company (SRL)

- Minimum 1 and maximum 50 - natural persons (minimum 18 years old), legal persons (companies - SMEs, associations, foundations, local councils) who decide on the company's activity through the general meeting of associates.
- There is no minimum share capital requirement and depending on the amount a shareholder participates in the share capital, he will have a number of shares corresponding to a number of votes and a percentage of the share capital. Also, each shareholder will be liable only up to the limit of the subscribed share capital.
- Management: 1 or more administrators (associate or non-associate), appointed for a limited period of time.
- Functional weaknesses: Any change of associates will have to be approved by the general meeting of associates and registered at the trade register - costs; withdrawal of associates is possible in cases provided by law, so not at any time, but an associate can withdraw by transferring shares to another associate or third party.
- Conditions for being an energy community through this type of entity: The condition of member control must be ensured, which is quite difficult to achieve when there are several associates with different shareholding because power poles could be created. As regards the condition that its purpose should not be profit for the members, this condition can be met if the company becomes a social enterprise.

2. Joint Stock Company (SA)

- Shareholders: Minimum 2 - natural persons (minimum 18 years old), legal persons (companies - SMEs, associations, foundations, local councils) who decide on the company's activity by general meeting of shareholders.
- Share capital: Minimum 90.000 lei (approximately 18.000 Euro) Depending on the amount a shareholder participates in the share capital, he/she has votes and a % share of the share capital. Each shareholder will also be liable only up to the limit of the subscribed share capital.
- Management: 1 or more directors organised in a Board of Directors, initially appointed for 2 years, subsequently for 4-year terms.
- Functional weaknesses: Withdrawal of shareholders is possible in the cases provided for by law, i.e. not at any time, but a shareholder may withdraw by transferring shares to another shareholder or third party, and transfers of shares do not have to be registered in the commercial register but only in the register of shareholders.
- Conditions for being a community of energy through this type of entity: The condition of control of the members must be ensured, which is quite difficult to achieve when there are several shareholders with different shareholdings, as power poles may be created. As regards the condition that its purpose should not be profit for the shareholders, this condition can be met if the company becomes a social enterprise.

3. Cooperative Society (SC)

- Cooperating members: minimum 5 - natural persons (minimum 16 years old), legal persons (companies - SMEs, associations, foundations, local councils) who decide on the activity of the society through the general assembly of cooperating members.
- Share capital: Minimum 500 lei. The law allows that regardless of the amount a cooperative member contributes to the share capital, he will have one vote. One member one vote.
- Management: 1 or more directors organized in a Board of Directors.
- Functional weaknesses: Admission/ withdrawal of cooperative members is possible, but must be approved by the general meeting of cooperative members and must be registered with the commercial register - costly, time-

consuming, and bureaucratic.

- Conditions to be an energy community through this type of entity: All legal requirements are met.

4. Association

- Members: minimum 3 - natural persons (minimum 18 years old), legal persons (companies - SMEs, associations, foundations, local councils) who decide on the activity of the association by general meeting of members.
- Assets: There is no minimum amount required. Regardless of the amount a member contributes to the assets, he or she will only have one vote. One member one vote.
- Management: Board of Directors consisting of at least 3 members - natural or legal persons.
- Functional weaknesses: Membership admission/ withdrawal is possible, but must be approved by the general meeting of members and must be registered with the court - costly, time-consuming, and bureaucratic.

5. Foundation

- Members: Minimum 1 - natural persons (minimum 18 years), legal persons (companies - SMEs, associations, foundations, local councils) deciding only on certain aspects of the activity of the foundation by the general meeting of the founding members.
- Assets: At least 10 times the minimum gross basic salary per country guaranteed in payment, at the date of the foundation's establishment (currently it would be at least 30,000 lei, given that the minimum gross salary as of 01.01.2023 is 3,000 lei).
- Management: Board of Directors consisting of at least 3 members - natural or legal persons, who decide on the activity of the Foundation.
- Functional weaknesses: Control is, in fact, carried out by the Board of Directors, which is the one that manages and decides on the activity of the Foundation, not the founding members.
- Conditions to be community energy in this type of entity: It is difficult to ensure the condition related to the control of members.

6. Local Action Group (GAL)

A community model was created through Local Action Groups which are, in fact, partnerships between representatives of the public and private sectors and civil society to create and develop communities for local development.

In terms of legal form, they have taken the form of associations in practice.

Energy communities, especially renewable energy communities, also have a strong local character. They could therefore take the legal form adopted by the LAGs, perhaps even within the framework of existing LAGs, which would extend or create new structures, i.e. new associations based on this model.

This will ensure the participation of several categories of entities as founding/ additional members in the associations thus created, namely:

- representatives of the public sector, local or county public institutions, including local and county councils, but also educational institutions (schools)
- representatives of the private sector, economic operators - authorised natural persons, family associations, sole proprietorships, SMEs
- representatives of civil society: associations, foundations, including owners' associations, individuals from marginalized communities.

PP11 DIT - Germany

In Germany, the legal framework for the organisation of an energy community depends on the size and the sector of the project to be implemented.

The most common legal frameworks for energy communities are cooperatives ("Genossenschaften"), limited liability companies (GmbH/UG & Co. KG), and private corporations ("Gesellschaft bürgerlichen Rechts").

The fastest, easiest and cheapest option for the realisation of a citizen's energy project is the establishment of a **civil law corporation** (GbR, Gesellschaft bürgerlichen Rechts). This legal form is very popular among solar energy plants owned by

citizens. The GbR has no legal personality, therefore it does not bear any rights and duties itself. Instead, the rights and duties affect the individual partners personally, the shareholders are fully and legally liable with their private assets. In order to reduce the risk, it is possible to combine GbR with the establishment of a registered union (Verein).

Cooperatives are the most frequent organisational form of renewable energy communities (around 55%) and produce 3.5% of the renewable energy of the country (DGRV, 2021). Registered cooperative (eingetragene Genossenschaft, eG) is a legal form is subject to the Cooperatives Act (Genossenschaftsgesetz, GenG). A key feature of energy cooperatives is that they are 100% owned by their members and not by investors like conventional companies. The main objective of a cooperative is to support community work and deliver services to its members.

The **GmbH & Co KG** legal form is a mixed form of limited partnership (Kommanditgesellschaft, KG) and private limited company (Gesellschaft mit beschränkter Haftung, GmbH). It limits the liability of involved parties and on the other hand facilitates the integration of numerous investors. Many citizens can provide capital as limited partners. The liability of the limited partners (Kommanditisten) is restricted to their respective share of the partnership capital. Depending on the success of the project, limited partners get a return. However, there is also a risk of capital loss. The GmbH shareholders are usually the initiators of the project and are responsible for management issue. GmbH & Co. KG legal form requires a significantly high star-up and is related to administrative burdens. Therefore, this legal form is suitable for bigger projects, where a connection of groups with different motivation can be brought together, namely investors and business managers.

Other legal forms for smaller projects:

Limited partnership (KG) is an alternative to GbR when shareholders want to combine different interests: investors and persons who take over the management and are willing to be personally liable. It requires a higher start-up and administrative costs are higher than in GbR form. A company has to be registered in the commercial register and annual financial statements must be elaborated. **Limited liability company** (GmbH) can be also considered for small projects. If a shareholder decides to exit, the shares are sold or inherited. The minimum required capital is 25,000 EUR. **Limited company** (Aktiengesellschaft, AG) is suitable for large investment volumes, as a minimum share capital amounts to 50,000 EUR. **Institution under Public Law** (AöR) is a legal form which can be chosen for projects driven by municipalities.

PP12 NEK - Slovakia

Energy communities and community energy in Slovakia are regulated by Act No. 251/2012 Coll. on energy and amendments as amended. The usual legal form of functioning of the energy community (EC) and energy communities (EC) in Slovakia is an officially registered legal entity, which in most cases is an interest association of legal entities, but they are not excluded and therefore other legal ways of establishing communities are also used, such as roughly in the same proportion, the expanded form of forming cooperatives.

Energy communities are based on three basic principles:

• Owned and controlled by consumers, municipalities or SMEs

• Communities are open to everyone and participation in them is voluntary, all members can participate in the management and control of their activities

• They are oriented towards environmental and social benefits for their members, not financial gains

The energy community is therefore a community of consumers who work together on a project aimed at fulfilling the energy needs of their members. It can be the joint ownership of equipment for the production of renewable energy (e.g. photovoltaic power plant or biomass boilers), its distribution and storage, operation of charging stations and the like.

Building energy communities will contribute to the creation of a decentralized system, based on local solutions, to the faster replacement of fossil fuels with clean and renewable energy sources, at the same time it serves as a tool to stabilize energy price fluctuations and contributes to energy independence.

EC members within these forms of existence can be, for example, only natural persons, or small businesses, or higher territorial units or municipalities in the territorial district of the higher territorial unit in which the EC is based.

An energy community using renewable energy sources (RES) is also considered an energy community in Slovakia. Its specificity is due to the fact that the electricity comes from renewable energy sources or biomethane, while the RES community is also a participant in the gas market.

EC and EC definition from the Act on Energy (§11a):

An energy community is a legal entity that is established for the purpose of producing electricity, supplying electricity, sharing electricity, storing electricity, aggregating activities, distributing electricity, operating a charging station, or performing other activities and providing other services related to ensuring the energy needs of its members or partners (hereinafter referred to as "member") with the aim of realizing environmental, economic or social community benefits,

A community producing energy from RES is a legal entity that is established for the purpose of producing electricity from renewable energy sources or biomethane, and which can simultaneously be established for the purpose of supplying electricity or gas, sharing electricity from renewable energy sources or biomethane, storing electricity from renewable energy sources , activities of aggregation, distribution of electricity, operation of a charging station or the performance of other activities or the provision of other services related to ensuring the energy needs of its members with the aim of realizing environmental, economic or social community benefits.

In terms of scope, we can divide energy communities as follows:

1) Local - an example is photovoltaics on the roof of an apartment building;

2) Local – the basis is the use of RES within the municipality or municipality;

3) Nationwide – enables sharing of energy from a larger RES source despite greater distance.

We further distinguish three approaches to sharing energy between members in an energy community (or community), namely:

1) static, when, for example, unused produced electricity flows back into the distribution system;

2) dynamic, when unused energy is not generated and is distributed proportionally according to consumption (however, this may not be optimal if a large amount of energy is consumed;

3) hybrid, i.e. combining the above two approaches.

The current state of development of management and building EC business models in Slovakia:

1. Compatible (with EU legislation) and relatively comprehensive and extensive legislation in the field of energy, environmental studies and the organization of energy operators (energy networks, distribution lines, producers based on conventional and renewable energy sources)

2. Established practice in cities and towns in the operation and accounting of energy consumption with uniform principles.

3. Establishment of energy communities based on 3 principles:

- they are owned and controlled by consumers - municipalities or SMEs
- they are open to everyone and participation in them is voluntary and everyone participates in management
- they focus on environmental and social benefits for their members and not on profits

ECs are being built in Slovakia as local, local, regional/national

ECs are perceived as non-profit organizations and managed by elected bodies according to the Organization's Statutes and specific conditions.

Circuits/Specifications:	**Example/Utility Brief**	
2. Are ECs perceived as non-profit organizations or only as business entities?	2. Are ECs perceived as non-profit organizations or only as business entities?	

PP2 IMRO - DDKK, STRIA - Hungary

They are perceived as non-profit. Therefore only such legal forms are recognised. The non-profit focus is also recognised by the fact that they are tax exempt (both VAT and income tax).

PP3 JAIP – Czech Republic

Energy communities (ECs) are primarily perceived as non-profit organizations, emphasizing their main purpose of providing environmental, economic, or social benefits to their members or the community they operate in. The founding legal act of an

EC defines its purpose, focusing on fulfilling the needs of its members and the community. However, the legal form of the EC determines its profit distribution policy. If the EC operates as a cooperative or similar business corporation, it may distribute a limited portion of profits (up to 33%) among its members, provided it doesn't compromise the community's purpose and creates a fund from profits. On the other hand, if the EC operates as an association or non-commercial corporation, profit distribution among members is prohibited. This distinction highlights that while ECs may generate revenue, their primary objective is to serve the interests of their members and the community rather than maximizing profits.

PP4 FORSCHUNG Burgerland - Austria

There are different types of company in Austria, each with its own specific characteristics and therefore its advantages and disadvantages. There are differences, for example, in the

- formation regulations
- liability
- tax law
- the entry and exit provisions

In principle, all forms of company with legal capacity are possible for ECs, but not all are automatically equally suitable.

There is no generally recommended company form for ECs. At present, most ECs are founded as associations or co-operatives.

The assessment of whether energy communities are charitable is generally a matter for the tax authorities and therefore cannot be answered conclusively. According to § 35 BAO, charitable status requires the promotion of the general public. This may include, for example, environmental protection purposes. The corporation must "exclusively and directly" serve to promote the purpose. The tax authorities are responsible for assessing whether these requirements are met. The tax office examines such requests in advance and issues a non-binding statement. Whether the tax benefits are actually available is only determined retrospectively for the relevant assessment year. As part of its audit, the tax office can request answers to questionnaires, inspect the articles of association and annual accounts, carry out an audit or tax audit and inspect the corporations.

The following applies with regard to not pursuing a profit motive:

An energy community should be able to operate economically. It is not prevented from making a profit as part of its activities. This includes, for example, selling the energy generated. However, making a profit must not be the main purpose of the community. This must be stipulated in the articles of association if it is not already clear from the form of the company. The profit should not be an end in itself, but should primarily be (re-)invested. However, minor marketing proceeds from surplus quantities, which may also contain profit components, do not contradict the objective of "not primarily financial profit".

Monitoring is carried out within the framework of the available instances and legal remedies in the respective legal relationship - for example, in relation to the grid operator (or supplier), the dispute resolution body of E-Control or the ordinary courts.

At the request of the regulatory authority, the EC must provide comprehensive data (e.g. access to balance sheets, etc.).

PP5 IRENA - Croatia

According to the Law on financial operations and accounting of non-profit organizations (Zakon o financijskom poslovanju i računovodstvu neprofitnih organizacija - Zakon.hr), EC are percievied as non-profit organisations.

PP6 KSSENA - Slovenia

According to the Article 3 of the ZSROVE, renewable energy communities are legal entities:

- based on open and voluntary participation, independent and effectively controlled by partners or members in the vicinity of renewable energy projects owned and developed by that legal entity;
- whose partners or members are legal or natural persons, other than legal persons engaged in an economic activity and which are not SMEs;
- **whose main objective is to provide environmental, economic and social benefits to its partners or members or to the local areas in which it operates, rather than financial gain.**

Furthermore, Article 43 defines that the RES community has the right to produce, consume, store and sell energy from renewable sources, including based on contracts for the purchase of electricity from renewable sources. It has equal access to all relevant energy markets, both directly and through aggregation. Legal persons engaged in an economic activity may be

members of a RES community, unless they do not pursue their main economic or professional activity as part of their participation in the community.

Similarly, ZOEE defines a citizen energy community as legal entity:

- based on voluntary and open participation and effectively controlled by members or partners who are natural persons, local authorities, including municipalities, or small enterprises;
- **whose primary purpose is to secure environmental, economic or social community benefits for its members or associates or for the local areas in which it operates, and not to make financial profits; and**
- which may be engaged in generation, including generation from renewable sources, electricity supply, consumption, aggregation, energy storage, energy efficiency services or the provision of electric car charging services, or the provision of other energy services to its members or associates.

The possibility for the citizen energy community to participate in the electricity market is defined in Article 24 of the ZOEE, which provides, inter alia, that energy communities may act directly on the electricity market. Article 23 of the ZOEE stipulates that final customers with community self-supply shall have the right to act as active customers without being subject to disproportionate or discriminatory market entry requirements, procedures and payments in this respect, as well as network charges that are not cost-reflective. Active consumers shall also have the right to act on the market directly or through aggregation, the right to sell electricity from their own production, including on the basis of power purchase agreements, and the right to participate in flexibility and energy efficiency programmes.

The provisions of the above laws imply that energy communities can operate as a non-profit organisation. Although the main objective of energy communities is not to make profits, they can also sell energy produced from renewable energy sources.

PP8 REDASP - Serbia

Participants and Members of the Energy Communities are currently recognized only as a business model.

PP9 OER - Romania

- Citizens' Energy Community - its main objective is to provide environmental, economic or social benefits to its members or shareholders or to the local areas in which it operates rather than to generate financial profits;
- Renewable Energy Community - whose primary objective is to provide economic, social or environmental community benefits to its shareholders or members or to the local areas in which it operates, rather than financial returns.

Answer – rather not for profit.

PP11 DIT - Germany

In Germany, energy cooperatives can be either non-profit or for-profit entities, but most energy cooperatives are not charitable, they are typically formed to serve the common needs and interests of their members. The distribution of profits isn't based on the level of investment made by each member. Unlike in traditional for-profit businesses where profits are often distributed according to the amount of capital invested by shareholders, cooperatives typically operate on a "one member, one vote" principle, where each member has equal voting rights regardless of their level of investment. Non-profit organisations can be registered as associations, non-profit private limited companies (gemeinnützige GmbH) or foundations, but this legal forms are only interesting if citizens want to implement campaigns in addition to RES (Renewable Energy Sources) production.

PP12 NEK - Slovakia

The energy community and the RES community are legal entities established for the purpose of producing electricity and related activities and realizing environmental, economic or social benefits, while their primary purpose is not to make a profit, but to achieve sustainable and efficient energy production and consumption, reduce energy costs, improve air quality and reduce dependence on fossil fuels. Therefore, they are perceived as non-profit organizations.

The production of electricity in a facility with an installed capacity of up to 1 MW, the storage of electricity in a facility with an installed capacity of up to 1 MW, the aggregation or supply of electricity and the production or supply of biomethane for members of the community is not considered a business, and for its implementation a notification to the Office for the Regulation of Network Industries is sufficient (ÚRSO). Supply of electricity outside the community or the operation of the

distribution system through the energy community is already considered a business.

One of the legal conditions is that no more than 50% of the generated profit be distributed among the members of the EC according to the specific conditions of its own statutes, otherwise such an activity could be considered a business.

The essential fact is that the community has a separate paragraph in the law for the definition of rights and obligations in the wording of § 35a Rights and obligations of the energy community, which we, as the solver and guarantor of task A.T.1.2 of partner PP12 - NEK, have already discussed in more detail in the document Summary report, task A.A. 1.1 Survey of the legal and legislative system of the Slovak Republic and therefore in this part of the task A.T.1.2 Overview of business models and management of EC energy communities with reference to the previous ones, we do not duplicate or return to the mentioned details.

Circuits/Specifications:	**Example/Utility Brief**	
3. Are the governing bodies of the EC constituted as elected bodies or nominated according to the size and position of participation in the EC?	For example, a share in management regardless of the importance and status of the EC participant - everyone has the same share and voting rights, etc. For example, the position and weight of the voting right in EC bodies according to the size of the EC participant's share	

PP2 IMRO-DDKK, STRIA - Hungary

They are perceived as non-profit. Therefore only such legal forms are recognised. The non-profit focus is also recognised by the fact that they are tax exempt (both VAT and income tax).

From a legal point of view, the supreme decision-making body of a limited liability company (or the same way, a non-profit limited liability company) is the members' assembly. It must be convened at least once a year to approve the annual report. If key issues arise, additional members' assembly meetings can be called.

Based on the interviews with the three existing energy communities:

Pannon energy community: the governance methodology is being setup now, so no details can be given at this point. However, the plan is that each member will have equal vote in decision-making. The actual working method will be worked out during the summer of 2024.

Bábolna energy community: the main owner is the municipality. They want to keep it like that, so they will always have more than 50% stake in the company. When they start operating in the autumn, then members will join the company and purchase stakes. Governance and voting procedures will be worked out during the summer. However, as there are very different size players (e.g. the municipality and one partner that consumes that much electricity as the whole rest of the city, vs. private individuals), the voting rights will most probably reflect members' size.

KESZ energy community: there are four founding members – they all take part in the members' committee meetings. They have equal voting rights (i.e. not proportional with their stakes in the company). This is so that they reinforce their way of working as a cooperative (even if the legal form is a non-profit ltd). This will way they make decisions, such as how they spend the accumulated reserve funds. Since they were registered just a few months ago, so far they decided on administrative issues only, e.g. contracting issues, installing new PV producers, or endorsing the financial report of year 2023.

Although decisions will be made by the energy community members in the members' committee meetings, from a legal point of view the main decision-maker of a limited liability company is the executive director. So he signs the decisions of the members' committee members.

PP3 JAIP –Czech Republic

The governing bodies of Energy Communities (ECs) are constituted as elected bodies. Members who have voting rights, including natural persons, small businesses, municipalities, regions, or voluntary associations, participate in decision-making processes. The highest body of the EC, typically in the form of an association, is the members' meeting, where voting rights

are exercised democratically. Each member with voting rights has equal participation, with limitations on the extent of influence one member can exert. Specifically, a member cannot exceed 10% of all votes in the community, ensuring fair representation and preventing disproportionate influence. Additionally, autonomy is maintained within the EC, as decisions are made collectively by the members' meeting. The association is responsible for maintaining a list of members with pertinent information, ensuring transparency and accountability in governance. Therefore, governing bodies in ECs are elected democratically, reflecting the principles of effective control and autonomy outlined in the legislation.

The selected obligations to protect community members include limiting voting rights to no more than 10% at membership meetings, allowing monthly "trial" memberships for individual consumers, setting a maximum notice period of 3 months for membership changes like ownership or usage rights, with a shorter 1-month notice for member relocation, and granting members the right to withdraw without new obligations if there's a change in membership terms, such as increased deposits, provided they notify within 1 month.

PP4 FORSCHUNG Burgerland - Austria

This essentially depends on the organizational form; in the case of associations, it is intended that the general meeting elects the board.

The Energy Communities Platform has drafted model statutes for associations, which state:

Tasks of the general meeting:

b.Election and dismissal of the members of the Executive Board, whereby election proposals must be verifiably received by the Executive Board no later than __ days before the respective election;

The provisions on the Executive Board state:

The Executive Board shall be elected by the General Meeting.

- If an elected member resigns, the Executive Board has the right to co-opt another eligible member in his/her place, for which subsequent approval must be obtained at the next General Meeting.
- Until such time as the General Meeting refuses to confirm the co-optation, the actions of such Board members are valid. The co-opted member completes the term of office of the resigned member.
- If the Executive Board ceases to exist at all or for an unforeseeably long period of time without self-appointment by co-optation, each auditor is obliged to immediately convene an extraordinary general meeting for the purpose of electing a new Executive Board.
- If the auditors are also unable to act, any ordinary member who recognizes the emergency situation must immediately apply to the competent court for the appointment of a trustee, who must immediately convene an extraordinary general meeting.

PP5 IRENA - Croatia

Law on the electricity market, NN 111/2021-1940, Article 26. Paragraph 3.

Share owners and members of the citizens' energy community exercise voting rights independently of the ownership share in the citizens' energy community, according to the principle of one member - one vote.

PP6 KSSENA - Slovenia

The basic definition of a renewable energy community from ZSROVE describes renewable energy communities as legal entities that are based on open and voluntary participation, independent and effectively controlled by partners or members in the vicinity of renewable energy projects owned and developed by this legal entity. Furthermore, its partners or members are legal or natural persons who are not legal persons engaged in an economic activity and which are not SMEs.

Basic definition of citizen energy community from ZOEE defines it as a legal entity based on voluntary and open participation and effectively controlled by members or partners who are natural persons, local authorities, including municipalities, or small enterprises. In both cases, renewable or citizen energy commnity.

As mentioned above, final consumers join a self-supply community on the basis of a contract under the rules of the law of obligations, by which they agree on their mutual relations, or by establishing a legal entity either on the basis of Article 43 of the ZSROVE (renwable energy community) or on the basis of Article 24 of the ZOEE (citizen energy community).

If customers participate in the community self-supply on the basis of a contract based on the rules of the law of obligations,

the contract shall specify in particular the mutual relations, the regime for determining the production sharing key, the production sharing key, the rights and obligations of the third party and the customer with regard to the management of the installation. Where the owner or operator of the self-supply system is a third party, the third party shall be a party to the contract. Obligations under this contract shall not be subject to joint and several liability.

In cases where a legal entity is established, the most common form of energy community (renewable or citizen) is the cooperative established based on the Cooperatives Act.

The establishment of a cooperative requires at least three founding members, the deed of foundation and the cooperative rules (Statute) adopted at the first general meeting of the cooperative. A cooperative is formed when the founding members sign and certify the deed of foundation before a notary. They then open a business account into which the members pay their compulsory shares. The articles of association are then filed with the court (commercial register) and the rest of the members are admitted. All members of the cooperative form a general assembly, which usually meets once a year and elects a board of directors and a president to run the cooperative. The general assembly also appoints the supervisory board and other cooperative bodies and adopts the cooperative's rules (Statute).

In the operation of a cooperative, the production-sharing key, which gives members the right to receive a share of production, is also the basis for determining members' obligations to the cooperative. When the cooperative takes out a loan to make an investment, and when the cooperative receives a request from the bank for payment of the annuity, it pre-invoices the members according to the production-sharing key, and does the same for other operating, maintenance, insurance, etc. costs.

The members of the cooperative may therefore have different levels of compulsory and voluntary contributions and, consequently, different numbers of votes in the General Assembly, which is made up of all the members of the cooperative and must meet at least once a year. The General Assembly elects the Board of Directors and the President, who is in charge of the cooperative.

PP8 REDASP - Serbia

In Republic of Serbia, the law does not limit or obligate the application of a certain way of constituting the Energy Community. During the formation of the community, the Participants temporarily regulate their rights and obligations and nominate a responsible person who undertakes further actions on their behalf and for their account, all in accordance with the Law on Energy and by-laws, as well as the Law on the Use of Renewable Energy Sources.

PP9 OER - Romania

- Citizens' Energy Community - it is based on voluntary and open participation and **is effectively controlled by members or shareholders** who are natural persons, local authorities, including municipalities, or small enterprises;
- Renewable Energy Community - is based on open and voluntary participation, is autonomous and is **effectively controlled by shareholders or members** located in the vicinity of renewable energy projects owned and developed by that legal entity.

The governing bodies depend on the type of legal entity chosen for the EC. Due to the small numbers of EC in Romania, we have limited examples, one being:

Cooperativa de Energie/ Energy Cooperative is a Romanian legal person under Romanian law, with the legal form of a company

European cooperative with limited liability. Each member has a voting right regardless of the number of shares held, being accepted, during the economic activity of the Company, the possibility of amending the constitutive act for a weighted vote, reflecting the contribution of each member under the law applicable at the time of amendment.

PP11 DIT - Germany

The German legislation on cooperatives prescribes a basic institutional structure with an Assembly of Members (Mitgliederversammlung), a Board of Directors (Vorstand), and, unless the cooperative has fewer than 20 members, a Supervisory Board (Aufsichtsrat), a mix of mandatory and default rules on the decision-making powers of these bodies, some basic procedural rules, and more detailed rules on accounting and monitoring.

In the overwhelming majority of German energy cooperatives, the Assembly follows the principle of 'one-person-one-vote'. While this ensures democratic decisionmaking 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 %).

PP12 NEK - Slovakia

How the energy community works in practice depends to a large extent on how the relations between members are regulated in the relevant founding document and how the goals of the community are chosen. In general, each member of the EC's highest body has the same weight of vote, which is enshrined in the statutes of the concerned EC or EC.

The fulfillment of the mission after the establishment and creation of the EC or ES in terms of the internal organizational structure is ensured by the other, lower governing elected bodies of the community. Their internal operation, such as the status and weight of the right to vote or a specific way of functioning, are precisely defined by the internal regulations approved by the above-mentioned highest authority, for example the Statutes of the EC.

The following organizational structure can serve as an example of the organization of EC management (and control) bodies:

Community bodies

a. The highest body – the General Assembly,
b. Executive body – Board of Directors,
c. Statutory body – President of the community,
d. Supervisory body - Supervisory Board.

Circuits/Specifications:	Example/Utility Brief	
4. Describe the known financing mechanisms of EC, the methodology of obtaining income and the way of keeping accounts in your company. Indicate the percentage of the given funding sources.	Subsidies from the state budget, Subsidies from EU funds, Personal income from EC business Regional contributions and subsidies, Other (specify what?) Agenda kept in simple accounting or double accounting?	

PP2 IMRO-DDKK, STRIA - Hungary

As nonprofit ltd's, the methodology of obtaining income is described in the business plans of each EC. This describes the targeted income and expenditures, and the methodology to achieve these figures. The way of keeping accounts is the same as for any other limited liability company.

Pannon energy community: the main income will be the cost sharing among the members. As opportunities arise, they plan to exploit project funding also, including European and national research projects. They also intend to involve researchers and so use their equipment in the energy community also.

Bábolna energy community: it is currently fully financed by the municipality (as they are one of the 20 nationally funded pilot projects). So the city provides the seed money through project funding, and if needed, will provide additional capital. Currently they are working on setting up the accounting system and the pricing scheme. This is one of the most important tasks. Proper energy pricing should enable a meaningful income, while the system should be financially be attractive for the members. They will work out the power buying/selling rates during the summer. Income should cover operational costs (e.g. staff costs), running the energy management and reporting software. Finances are managed in double accounting.

Once new project opportunities arise, they are interested in that, too. Their intention is to invest in further infrastructure development, most importantly in developing their own power network, so that they can be fully independent from the E.ON network.

KESZ energy community:

They work in a similar way as an ESCO, i.e. currently they install PV systems on buildings and then share the power among the residents. (The legal framework currently does not allow power sharing on regional/city level, so currently they focus on buildings.) Buildings include e.g. community centre, condominium, NGO centres etc. They prefer buildings where there is

power consumption during the day (i.e. public buildings)

Although they install the PV systems, the energy community members are in contractual relationship with the power distributor company (e.g. E.ON). However, due to extreme low power purchase prices, currently it is not worth to sell the electricity to the power provider.

KESZ started their work with project funding. So they cover ca. 50% costs of installing the PV systems from the project, while the rest is paid by the building's users (e.g. NGOs or public institutions) or their target audiences (e.g. parents), who are willing to pay some amount for sustainable energy.

PP3 JAIP – Czech Republic

The known financing mechanisms of Energy Communities (ECs) include subsidies from the state budget, subsidies from EU funds, personal income from EC business activities, regional contributions and subsidies, and other sources such as private investments or crowdfunding.

Financial framework (described in 1.1 International comparisons of national legal systems 1.1. – chapter 3)

At the moment, a wide range of subsidy programmes are being prepared, which will make it possible in the near future to massively finance, in particular, the establishment of energy communities, the purchase of technologies for their operation and the training of the necessary personnel. We can mention, for example, the Modernization Fund, the National Renewal Plan, the Operational Programme Environment, the Operational Programme Technology and Applications for Competitiveness, the Operational Programme Just Transformation and the MIT Effect III programme. In addition to subsidy programmes, returnable financial assistance tools are also offered in the form of preferential loans, bank guarantees, or a combination thereof. It is necessary to mention above all the financial instruments of the European Investment Bank (EIB), instruments of repayable financial assistance related to energy communities will also be offered by the National Development Bank.

In conclusion, while investment subsidy support has been instrumental in driving the development of energy communities and increasing renewable energy generation, oversizing of production plant capacities presents challenges that need to be addressed. By promoting optimization strategies and encouraging flexible connection practices, ECs can continue to play a vital role in advancing community-driven renewable energy initiatives while ensuring the efficient operation of the broader energy system.

PP4 FORSCHUNG Burgerland - Austria

Generally, there are only promotions for renewable energy investments such as PV, wind turbines, hydrogen, battery storage technologies and biomass/-gas in Austria, for ECs in particular, there are none.
However, a membership contribution fee can be included in the terms of an EC and in contrast to general associations, the EC is assigned a promotional mandate. This can already be described individually in the articles of association, although usually only the legal text is included in these.
Profit is excluded, but economic benefits may arise for the members (e.g. through a reduction in costs, benefits in kind). If a profit is made from the sale of surplus energy, this may not be paid out directly to members, but can be used to cover running costs or to build up reserves.

General available financing models can be

- Financing by building owners - reserves, financing by participating owners.
- Financing by participants - invest together
- Financing by third parties - energy supplier or external service provider

with the following rules:

- Participating parties found an association (purpose of the association: construction, preservation, maintenance and operation
- Roof is leased by the owner or community of owners
- The association is therefore responsible for the system and is the operator
- Allocation of financing costs and tariff is defined in the association's statutes
- Optional: Association members pay an investment share and in return receive the right to purchase electricity.

Two appointed audits of every EC have to check the accounts and report to the supervisory body.

PP5 IRENA - Croatia

No subsidies available.

Law on financial operations and accounting of non-profit organizations, Article 9.

(1) A non-profit organization keeps bookkeeping according to the principle of double-entry bookkeeping, and according to the

schedule of accounts from the accounting plan for non-profit organizations.

(2) Exceptionally, the legal representative of a non-profit organization can make a Decision on keeping simple bookkeeping and applying the monetary accounting principle if:

- the value of the non-profit organization's assets at the end of each of the previous three consecutive years is less than EUR 30,526.25 and

- the annual income of the non-profit organization in each of the previous three consecutive years is less than EUR 30,526.25 per year.

(3) The decision referred to in paragraph 2 of this article is made within the time limit set for the submission of annual financial statements for the previous business year and is valid as long as the non-profit organization meets the conditions referred to in paragraph 2 of this article, i.e. until revoked.

(4) A non-profit organization that meets the conditions from paragraph 2 of this article, and decides to keep double-entry bookkeeping, is obliged to apply the provisions of this Act exclusively in the part of compiling financial statements from article 29, paragraph 1 of this Act and submitting them to the Ministry of Finance, that is, another institution authorized by the Ministry of Finance to receive and process financial statements.

(5) A non-profit organization is obliged to keep double-entry bookkeeping for the first three years after its establishment.

PP6 KSSENA - Slovenia

In line with Slovenia's ambitious targets for renewable energy, as set out in the renewed National Energy and Climate Plan, a range of incentives and support for RES is being developed, where community self-supply is being particularly promoted with higher cofinancing projects.

In Slovenia, the subsidies related to RES are primarily offered through Borzen Ltd, Eko sklad (Slovenian Environmental Public Fund - Eco Fund) and the Ministry of the Environment and Spatial Planning.

Currently, Slovenia has a RES Info Point specifically dedicated to the integration of renewable energy sources, which provides comprehensive information on a national level and serves to accelerate investments in the field of renewable energy. The centralised approach aims to facilitate and accelerate the development of sustainable energy projects. The aim of the contact point is to provide information on renewable energy sources in order to accelerate investments in renewable energy sources. The RES Info Point has been established within Borzen Ltd, the Slovenian electricity market operator, which already operates the Centre for RES/CHP. The core activity of Borzen is to provide the public service of electricity market operator and a compulsory national public service of the Centre for Support.

At the time of writing, Borzen has the following open calls for proposals:

- Allocation of direct grants to promote the production of electricity and heat from renewable sources and the storage of electricity and heat (available to legal persons, cooperatives, natural persons engaged in economic activities and self-governing local authorities registered with the Slovenian Agency for Public Legal Records and Related Services (AJPES): https://ove.borzen.si/. Applications for direct grants may be submitted in accordance with the public call for proposals (Official Gazzete of the Republic of Slovenia No 109/2023 of 27.10.2023):

  https://www.uradni-list.si/glasilo-uradni-list-rs/vsebina/2023010900019/javni-poziv-jp-ove-01-za-dodeljevanje-pomoci-v-obliki-neposrednih-nepovratnih-sredstev-za-investicije-v-nove-proizvodne-naprave-iz-obnovljivih-virov-energije-za-proizvodnjo-elektricne-energije-in-toplote-ter-za-hranilnike-elektricne-energije-in-toplote-v-kombinaciji-s-proizvodnjo-energije-st--izhod-491-1146-ob-327623.

An amendment to the tender was published on 8.12.2023. The main changes relate to the increase in the total amount of funds available for the investments concerned from the previous €80 million to €105 million, while Part 1, which covers investments in production plants for the generation of electricity from photovoltaic or other solar energy (i.e. photovoltaic power plants, community photovoltaic power plants, photovoltaic power plants with a cultural protection permit and photovoltaic power plants covering outdoor uncovered parking areas) is closed, i.e. applications can no longer be submitted.

- As of Monday, 15 April 2024, the Support Centre has launched a support mechanism to subsidise self-supply solar power plant projects for natural persons that will be connected on an annual billing basis (netmetering - according to the Regulation on self-supply of electricity from renewable energy sources (Official Journal of the Republic of Slovenia, No 17/19, 197/20 and 121/21 - ZSROVE)).The subsidy mechanism is available to natural persons who will be connected on an annual billing basis. The non-repayable financial incentives are intended for investments in the purchase and installation of installations for individual and community self-supply of electricity to household consumers, which generate electricity by using solar energy and its storage, in accordance with the call for proposals JP SO-01, published in the Official Gazette of the Republic of Slovenia No 30/2024 of 5.4.2024. The total amount of funding under this call for proposals is EUR 14 million. The amount of investment aid is:

- 500,00 € per 1 kW of installed rated electrical capacity of an electricity self-supply installation with battery electricity storage, up to a maximum of 25 % of the eligible costs of the investment,
- 50,00 € for 1 kW of the installed rated electrical capacity of an electricity self-supply installation without a battery energy storage device, up to a maximum of 25 % of the eligible costs of the investment,

up to a maximum of 80 % of the sum of the connection capacities of the consumption points.

This is a support mechanism that has so far been implemented by the Eco Fund (Slovenian Environmental Public Fund), whose main purpose is the promotion of development in the field of environmental protection by providing financial incentives such as soft loans and grants for various environmental investment projects. As of 2024, all solar incentives are being transferred to Borzen, where the entire process will be digitised, so applications will be processed much faster. In the past, Eco Fund has offered incentives to citizens, small business customers and municipalities. The last call of the Eco Fund was closed with its publication in the Official Gazette of the RS No 118 of 24. 11. 2023. All applications submitted to the Eco Fund by this date will be processed by the Eco Fund. The previous call of the Eco Fund for subsidies for PV power plants amounted to EUR 3 million. In contrast to "Micro PV", "Small solar, wind and hydro plants" as well as "Coproduction of heat and electricity", are not eligible for subsidies, but Eco Fund offers competitive loans. Eligibility: loans are available to various legal entities in a number of sectors.

Grants can also be obtained through calls for proposals issued by the Ministry of the Environment, Climate and Energy. On 1 March 2024, the Ministry of the Environment, Climate and Energy launched a call for proposals for the co-financing of the construction of new solar electricity generation systems on public buildings and car parks for the period 2024-2026, with a budget of EUR 20 million, financed under the Recovery and Resilience Plan (Načrt za okrevanje in odpornost - NOO). The purpose of the call for proposals is to award grants to co-finance the construction of new self-supply installations on public buildings, on associated simple or non-complex structures located adjacent to a public building and/or on paved areas of car parks on municipal and/or state building land, including the purchase and installation of such self-supply installations, where the total installed capacity of the photovoltaic panels installed per application is at least one megawatt, in combination with or without battery storage. The call can be accessed via the following link:

https://www.energetika-portal.si/javne-objave/arhiv-energetika/javni-razpisi/r/javni-razpis-za-sofinanciranje-izgradnje-novih-naprav-za-proizvodnjo-elektricne-energije-iz-soncne-energije-na-javnih-stavbah-in-parkiriscih-za-obdobje-2024-do-2026-noo-se-ove-2024-1355/

In addition, funds can be accessed through international programmes such as Horizon2020, Interreg, Life, ELENA and others.

PP8 REDASP - Serbia

Investing in Energy Communities as well as their financing models are not narrowly limited. Investments can be from private capital, they can be a loan from the founder, they can be additionally financed by commercial banks, but can also be additionally financed through public calls from the Ministry of Mining and Energy, the Ministry of Environmental Protection, the Ministry of Construction, Development Agencies and local and regional as well as periodic calls from Local Self-Governments aimed in improvement of Energy Efficiency.

PP9 OER - Romania

In Romania, State subsidies are provided for photovoltaic panels through two programmes. One is the Environmental Fund Administration's Green House (Casa Verde). The second is from the Ministry of European Investment and Projects (but it is not for prosumers, only for personal use). The budget for Green House Photovoltaics is in 2024 of 2 billion lei for individuals. Beneficiaries can receive up to 20.000 lei for a minimum of 3 kW of installed power. The budget is enough for 100.000 households.

For example, at Cooperativa de Energie/ Energy Cooperative, the initial share capital at incorporation, subscribed and paid in full, in cash, in lei, by the founding members was 170.000 lei, equivalent to 35.906,64 Euro, at the BNR rate of 4.7345 lei/1 Euro valid on 18.07.2019, as of the date of signing the deed of incorporation of the company, and was divided into 1.700 registered, equal and indivisible shares, numbered from 1 to 1.700, each with a nominal value of 100 lei.

Usually, in Romania, the accounting system is double accounting.

PP11 DIT - Germany

The amended EEG outlines a new supporting framework for citizen energy societies. **A feed-in-tariff system** has been updated specifically to apply towards solar photovoltaic installations:

- Solar free-standing installations and on other buildings up to 1MW = 7 ct/kWh
- Solar roof systems in self-supply/excess feed in:
    - Up to 10 kW = 8.6 ct/kWh
    - Up to 40 kW = 7.5 ct/kWh
    - Up to 1 MW = 6.2 ct/kWh

  Solar roof systems in full feed-in:
    - Up to 10 kW = 13.4 ct/kWh
    - Up to 100 kW = 11.3 ct/kWh
    - Up to 400 kW = 9.4 ct/kWh
    - Up to 1 MW = 8.1 ct/kWh

In addition, a **citizen energy funding programme** has been put in place that provides up to 70% of the costs for the planning and approval of onshore wind energy projects can be subsidised up to a maximum of 200,000 euros. Eligible measures include all measures in the preliminary planning of a project (such as feasibility studies feasibility studies, site analyses, economic feasibility studies) and other necessary expert opinions that contribute to the realisation of the wind turbines. This subsidy is made repayable if and subsidy, stipulated in the EEG, has been registered or if an award has been made in an EEG tendering procedure.

In addition, there was a **''citizen energy companies'' investment fund** launched in 2023, which provides support in the planning and approval of projects up to a total size of 25 MW per applicant for generating electricity from wind energy on land. If the project is successful, the money has to be paid back. With regards to eligibility to this fund, all eligible costs listed below that are incurred by the Federal Network Agency up to the time a bid is submitted in the competitive tendering process in accordance with the applicable EEG provisions or up to the registration of the project in the market master data register are eligible, provided that there is evidence of this and verifiable documents have been submitted.

Applications can be submitted to the Federal Office of Economics and Export Control from 1 January 2023 and they must specify the measures eligible for funding, both in terms of costs and content. Only measures that have not yet started before the application for funding is submitted are eligible for funding. Moreover, applications for funding must be submitted before the start of the project. The start of the project is considered to be the conclusion of a delivery or service contract to be assigned to the execution. Non-binding offers or draft contracts do not count as premature start of measures.
The federal and state development bank KFW offers a broad portfolio of funding for the expansion of renewable energies and for climate protection projects, some of which can also be used by energy municipalities to finance energy projects.

Germany has support schemes in place for **collective self-consumption**. For example, the "Mieterstrommodell" allows the electricity producer to sell locally produced energy to other households in close proximity. If it is a multi-apartment building, the electricity producer receives self-consumption support from the distributional system operator (DSO) of 2.1-3.7 Cent/kWh.
The maximum capacity for collective selfconsumption is 100 kW and will receive support if they sell to either tenants in the building or owners of apartments in the building. Operators also receive a feed-in tariff/premium for the surplus electricity fed into the grid. Although, collective self-consumers, as opposed to individual self-consumers, have to pay the "EEG surcharge", which contributes to the establishment retail electricity prices and the financing of EEG renewable support schemes. The amendment of the EEG in 2021 specifies that the self-consumption support and capacity limits will be increased to between 3.79 Cent/kWh (up to 10kW) and 2.73 Cent/kWh up to a size of 500 kW.

REC projects are **exempt from the tendering process**. This includes wind turbines on land owned by 'citizen energy companies' (defined in the EEG in line with the REC definition from the Renewables Directive) with an installed capacity of up to and including 18 megawatts. All solar systems with an installed capacity of up to and including 1 megawatt are exempt, and solar systems owned by citizen energy companies with an installed capacity of up to and including 6 megawatts are exempt from tenders. These thresholds make the most of what is allowed under the new State aid guidelines on climate, energy and environmental protection (CEEAG).
There are a couple of important elements that have been integrated into the tendering exemption for RECs, mainly to prevent corporate capture and abuse, as this was a big problem in previous schemes to allow RECs to participate in auctions. First is the definition. It has been significantly narrowed, in particular to require a high level of citizen involvement and control. There is also a limit to how often a REC can use this tendering exemption. Specifically, only companies who have not commissioned any plants of the same technology and the same segment (segment = either ground mounted or roof top above 1 MW) in the previous three years have the right to be exempted for the particular project of the same technology and the same segment.
These above limitations should help prevent abuse, while also providing RECs with a bike lane to access renewables support, without having to compete against larger more professional project developers.
Form of support for community production projects

- Feed-in tariffs are available for installations under 100 kW.
- Guaranteed market premium are available for installations under 1 MW

Above 1 MW, citizen energy companies receive a price according to the winning bids from the tenders under the normal competitive bidding process (i.e. tender). In this sense, they do not need to worry about submitting a bid for their project.

Possibilities for citizen´s investments:

- Bearer bonds (Inhaberschuldverschreibungen)
- Refurbishment projects - energy efficient buildings
- Subordinated loans (Nachrangdarlehen)
- Crowdfunding investments
- Profit participation rights (Genussrechte)
- Savings bonds (Sparbriefe)

PP12 NEK - Slovakia

Slovakia in the field of EC is at the beginning of the journey, even though from 2022 the conditions for the functioning of energy communities are already enshrined in national legislation.
Based on the many years of experience of European states, where energy communities and communities have been operating for the second decade, we can expect a similar development in Slovakia as well - the adoption of legislative conditions is only the beginning of a process that means gradual refinement and improvement of the system.
In order to start the community energy industry, European resources are to help significantly, as tens of millions of euros are allocated to support the energy efficiency of businesses and the installation of renewable energy within the framework of the Slovakia Program as well as the Recovery Plan.

What is new in 2024 is that subsidies can be obtained by businesses in all sectors. In the past, RES support was primarily focused on the industrial sector.
Funding support, in addition to the creation of own resources from the provision of internal energy distribution and production services within the EC, has recently also been provided by EU resources within the Slovakia Program and the Recovery Plan (consequences of the Covid pandemic), the SIEA scheme "Green by business" and vouchers for EC members for financing photovoltaics, solar collectors, etc.
ECs in Slovakia, as non-profit economic units, are obliged to submit annual financial statements after the end of the accounting period and submit annual reports to the national register of annual reports and, if they also have income from business, tax returns
The Slovak Innovation and Energy Agency (SIEA) will support the installation of equipment for the use of renewable energy sources through the "Green business" scheme. Micro, small and medium-sized enterprises (SMEs) and of course also energy communities and communities can finance the installation of photovoltaics, solar collectors, heat pumps or wind turbines thanks to a subsidy in the form of a voucher. Energy audits are also financed from the call, and the maximum value of the voucher is 70,000 euros. This is definitely not an insignificant amount for a small business, such as every EC or EC.
A key condition is that the projects are implemented on the basis of an energy audit. This is either part of the future performance in the application or the entrepreneur may have already prepared it and attach it to the application. The energy audit will reveal which devices are suitable for a specific type of consumption and with what installed capacity. Thanks to the audits, the applicants will have at their disposal proposals for appropriate energy efficiency measures and the professionally determined potential for the use of renewable resources. In addition to the installation of specific equipment, subsidies can also be used for energy storage.

Vouchers can cover 35% of the total eligible project expenses with the possibility of a bonus of 5%, if the energy audit confirms that at least 90% of the energy produced in each of the supported facilities will be consumed in SMEs, while the EC and the European Commission, in accordance with other legislation, have shifted this limit up to 100%. The advantage is that an additional 5% bonus can be obtained for devices with minimal air pollution.
EK are included in the Slovakia Program among possible eligible applicants in the case of two measures. Measure 2.2.1 will be used to support the use of RES in companies based on active consumers of electricity, self-consumers and communities producing energy from RES. Measure 2.3.1 should provide additional options, through which it is possible to allocate investment funds for the transmission system, distribution networks, but also for building local distribution networks and energy storage facilities.

According to national regulations and measures issued by the Ministry of Finance of the Slovak Republic, all EC and EC as legal entities must account in the double-entry bookkeeping system. This is a significant help for the effective control of the use of European subsidy resources.

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Circuits/Specifications:	Example/Utility Brief	
5. Are ECs obliged as non-profit organizations to submit annual tax returns to the state tax administration? Is it sufficient for the EC to submit only the Annual Report to the relevant register each year?	In particular, state whether there is a separate way of recording and registering tax statements in your country? Also to state whether the book closing is approved by the EC authorities as well as an independent auditor according to the regulations in the country?	

PP2 IMRO – DDKK, STRIA - Hungary

Yes, they have to submit annual tax returns by May 31 each year. It is obligatory to submit an Annual Financial Report to the relevant register each year. This is the same as for any other limited company. The book closing is approved by the annual members' assembly. An energy community is considered as a legal subject which performs energy activities. Given that energy activity is considered an economic activity, it needs to submit income tax declaration to the state adminstration.

PP3 JAIP –Czech Republic

Tax aspects in the Czech Republic

INCOME TAX	ASSOCIATION	COOPERATIVE
Public benefit Taxpayer	**YES** (§17a "a taxpayer who, in accordance with his founding legal proceedings, by statute, by-laws, by law or by decision of a public authority such as its main activity is the activity, which is not a business)	**NO** (is a business corporation, §17a paragraph 2 on income taxes)
Tax base	Narrow tax base in particular, the following are not the subject of tax income: a) income from business activities, where expenses incurred for these activities income exceeds or is subject to tax are not income from losses non-business activities. b) income from subsidies, contributions or others fulfillment of public budgets	All income except exempt from income tax
Tax exemption	a) Membership fees as specified in the articles of association, statute, approval directive, etc. b) Income from capital gains, up to CZK 100,000, in the case of interest-free lending or borrowing. c) Non-bribery income from public collections. d) Gratuitous income, if it is or will be used for purposes defined in tax law as public benefit purposes. e) Revenue from renting apartments or non-apartment spaces and payments for services provided using space owned by the association under a lease agreement with its members.	Member contributions are exempt from income tax income from a rental cooperative apartment or cooperative non-residential space and from payment for performance provided with the use of space on based on the lease agreement by the member

PP4 Forschung Burgerland - Austria

Corporation tax

The tax office does not currently regard the Egs as a non-profit organization, but no one has yet fought a legal battle in this

regard. Consequence: A tax on profits is due. This also influences the sensible choice of legal form, e.g. GMBHs are subject to a minimum tax in an amount that generally makes the business model impossible. Associations also pay tax on profits, but only at x% per euro of profit without a minimum limit.

This is a tax on the income (profit) of certain legal entities, e.g. associations, co-operatives, etc. There is no minimum annual corporation tax for associations and co-operatives, while corporations are subject to a minimum annual corporation tax.

Associations have different record-keeping obligations depending on their size, while cooperatives must prepare annual financial statements or other financial statements.

Income tax

This is a tax on the income of a natural person. Income of natural persons from the feed-in of up to 12,500 kWh of electrical energy from photovoltaic systems is exempt from income tax if the bottleneck output does not exceed 35 kWp and the connected load does not exceed 25 kWp. This also applies to income from the "feed-in" to the energy community.

Electricity tax

The supply of electrical energy in the tax territory, the consumption of electrical energy by electricity companies and the consumption of self-produced electrical energy or electrical energy brought into the tax territory are subject to the electricity tax. Electricity that is traded or consumed within the energy community is exempt from this tax

Exemption from the electricity tax must be applied for by the EC at the tax Office.

PP5 IRENA - Croatia

EC is obligatory to submit Annual Financial Report to the relevant register each year.
EC is considered as a legal subject which performs energy activities. Given that energy activity is considered an economic activity, it nneds to submitt income tax declaration to the state adminstration.
Final financial report needs by to addopted by the Association Assembly.
Law on profit tax, Article 35. defines the method of submitting the tax report.
Independent auditor is not needed.

PP6 KSSENA - Slovenia

The possibility for energy communities or cooperatives to participate in the electricity market is provided for in Article 24 of the ZOEE, which stipulates, inter alia, that energy communities may act directly on the electricity market. According to the Article 23 of the ZOEE, self-supplying final customers have the right to act as active customers without being subject to disproportionate or discriminatory market entry requirements, procedures and payments, as well as network charges that are not cost-reflective. In addition, in order to operate directly on the electricity markets, i.e. to sell to other system users or to buy from other system users under an open contract and to enter into closed contracts, active customers must join a balancing system, except in the case of exchanges of electricity between active customers belonging to the same member of the balancing system and in the case of an open contract with a supplier.

For energy communities, non-discriminatory, fair, proportionate and transparent procedures and payment of network fees and access to the organised electricity market shall be laid down in by-laws and general laws. The Agency shall, by means of the general act referred to in Article 109 of ZOEE, determine the manner in which the network charge for the members of the energy community is determined in such a way as to ensure that they make a sufficient and balanced contribution to the distribution of the common costs of the system. Where energy communities operate directly on the electricity market, they shall be included in the balancing scheme and shall be treated as active customers in respect of electricity generated by them.

Article 39 of ZSROVE, which deals with the calculation of network charges, contributions and other levies, stipulates that self-supplying final customers shall pay a non-exclusive network charge that reflects the costs and benefits of self-supply, as well as other public charges levied on the amount of electricity taken from the public network. The amount of network use shall be taken into account in determining the amount of the network charge for a final customer in community self-supply.

In general, the the final amount for supplied electricity to consumer consists of:

- market price of electricity,
- price for the use of the network,
- contributions,
- the excise duties on electricity,
- the value-added tax.

The self-supplying final consumer shall not pay network charges and other public charges for electricity supplied to the network as well as for self-generated electricity from renewable sources, which may also be stored and remain in his building (network charge or other public charge).

As the most common organisational form of an energy community is a cooperative, the provisions of the Cooperative Act regarding accounts and the annual reports are also briefly analysed below. Cooperatives must keep accounts and prepare an annual report. The accounts must be kept on a double-entry basis. Unless otherwise provided for in this or another act, the provisions of the law governing companies relating to the accounts and the annual report shall apply to the keeping of accounts, the preparation of the annual report, the obligation to audit, the publication of the annual report and the submission of the information contained in the annual report to the state statistics service. More detailed rules concerning the keeping of accounts and the preparation of the annual report of cooperatives shall be laid down in a special Slovenian accounting standard, which shall be adopted by the Slovenian institute of auditors (Slovenski inštitut za revizijo) in agreement with the Minister of Agriculture and the Minister of Finance, after a prior opinion has been given by the Cooperative Union of Slovenia (Zadružna zveza Slovenije).

The cooperative shall submit its annual report to the Agency of the Republic of Slovenia for Public Legal Records and Related Services (Agencija Republike Slovenije za javnopravne evidence in storitve - AJPES) within eight months after of the end of the financial year. The annual report must be drawn up in such a way that the members can see the assets and results of the cooperative. The annual report must be examined by the supervisory committee.

PP8 REDASP - Serbia

Due to the implementation of the Law on Energy, where it is clearly defined that calculations are made on a monthly basis, and also due to the VAT law of the Republic of Serbia, orderly bookkeeping, then a separate balance sheet for an entity engaged in the production of energy and a final account drawn up by a registered and licensed bookkeepers at the end of each year are mandatory.

PP9 OER - Romania

Currently, we do not possess any relevant information on this fact.

PP11 DIT - Germany

Cooperatives are required to file annual tax returns to report their income, expenses, and tax liabilities to the state tax administration. This includes corporate income tax returns, trade tax returns, and any other relevant tax filings based on their activities. As corporations, cooperatives are obliged to keep books according to corporation tax law and income tax law.

- Corporate Income Tax (Körperschaftsteuer): Cooperatives are generally subject to corporate income tax, unless they exclusively provide services for agricultural businesses owned by their members. The corporate income tax rate is 15 percent for cooperatives.
- Trade Tax (Gewerbesteuer): Cooperatives are also subject to trade tax, with rates ranging from 13 to 15 percent depending on the municipality where they operate.
- Value Added Tax (Umsatzsteuer): Cooperatives are subject to value-added tax on their taxable supplies of goods or services.

In German cooperative law, there are two basic rules regarding audit:

1. A new cooperative society must be audited before registration (§ 11 (2) No. 3 GenG) as a requirement for registration.
2. Every registered cooperative society must be affiliated to a cooperative auditing federation and must be audited every year or (in case of small cooperatives) in every second year (§ 53 GenG).

The audits cover various aspects including facilities, financial position, management, and membership records. They are comprehensive, extending beyond typical financial audit areas to assess operational organization, performance factors, and member relationships. Despite aiming to assess the fulfillment of the board's duty to support members, difficulties arise due to challenges in measuring benefits and the legal scope of the audit. These audits are conducted by auditing associations, with cooperatives being compulsory members of regional cooperative associations responsible for the audits.
For a **GmbH & Co. KG** (a limited partnership with a GmbH as the general partner), the tax treatment is different from that of cooperatives.

- Income Tax (Einkommensteuer): The GmbH & Co. KG itself is not subject to income tax. Instead, the profits or losses are attributed to the individual partners (Gesellschafter) according to their respective ownership shares. These partners are then personally responsible for reporting their share of the profits or losses on their individual tax returns and paying income tax accordingly.
- Trade Tax (Gewerbesteuer): The GmbH & Co. KG is subject to trade tax as it engages in commercial activities. The partnership itself is liable for paying trade tax.
- Corporate Income Tax (Körperschaftsteuer): The GmbH, acting as the general partner, is subject to corporate

income tax. The corporate income tax rate is currently 15 percent.

Given the complex tax structure of a GmbH & Co. KG, including the separate taxation of the GmbH and the pass-through taxation for the limited partners, annual tax returns are necessary. The GmbH must file its own corporate income tax return, while the individual partners must report their share of profits or losses on their personal income tax returns. Additionally, the partnership itself must submit trade tax returns.

PP12 NEK - Slovakia

After the end of the accounting period, EC and EC are obliged to draw up financial statements and submit proper tax returns, which are subsequently publicly accessible online in the "Register of Financial Statements", which is maintained by the Ministry of Finance of the Slovak Republic.

At the same time, they are required to draw up an Annual Report on the activities of the non-profit organization by June 30 of the following year at the latest and submit it to the register of annual reports maintained by the competent office of the Slovak Republic. Non-profit organizations are required to conduct an audit only if they have an income of more than €200,000.00 from business activity (that is, one that does not directly relate to the activities and services provided between members of the non-profit organization and for their benefit.

Circuits/Specifications:	Example/Utility Brief	
6. To what estimated extent do the ECs operating at the same time in your country participate in the domestic energy mix of the country???	Write a justified professional estimate in your country about the share in % and especially with regard to renewable energy sources in the national energy mix. List the official information sources (link...) about the energy mix from binding state documents.	

PP2 IMRO-DDKK, STRIA - Hungary

Zero.

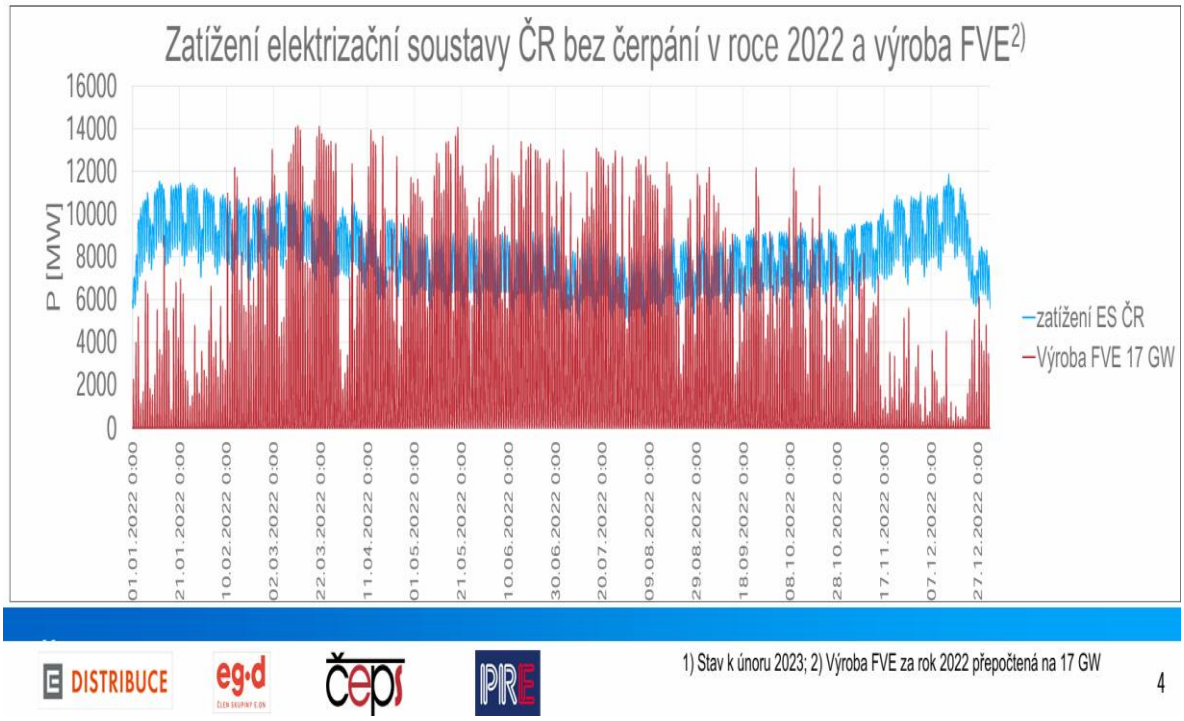
The first operational energy community was registered just a few months ago and therefore energy communities don't have any influence on the energy mix yet.

PP3 JAIP –Czech Republic

Current State of Renewable Energy Integration

According to the partial statistical report prepared by the Department of Analysis and Data Support of Concepts of the Ministry of Industry and Trade (MPO), in 2022, the share of gross final energy consumption from renewable energy sources (RES) in the Czech Republic, calculated using the international EUROSTAT methodology (SHARES), was 18.2%. Within this, electricity consumption from RES accounted for 15.5%, while RES contributed 7.2% to transport consumption and 25.8% to final heating consumption.

As of December 31, 2022, the installed PV power capacity stood at 2106.7 MW, with projections suggesting a significant increase to 8,000-10,000 MW by 2029. However, actual applications for new PV plants indicate an even higher potential capacity, ranging between 17-19 GW.



Challenges and Opportunities for EC Development

The integration of renewable resources, particularly unpredictable production modules, into ECs poses significant challenges that require substantial investments and regulatory frameworks. These challenges include dispatch management, communication infrastructure, and funding for support services aimed at mitigating active power fluctuations.

Legislative adjustments are essential to delineate the role of RES in the Czech Republic's energy mix and create an enabling environment for ECs. Addressing issues such as metering standards, smart grid implementation, and tariff structures are crucial steps towards unlocking the full potential of community energy initiatives.

Estimation of EC Participation in the Energy Mix

Based on the provided information and considering the current challenges, it is estimated that by the end of 2026, ECs operating in the Czech Republic will contribute approximately 9% to the installed PV power capacity in the national energy mix. This estimate takes into account the growth of ECs, particularly focusing on sources connected to the low-voltage (LV) level with a power capacity of up to 100 kW.

Conclusion and Recommendations

Despite facing challenges, ECs hold significant potential to contribute to the renewable energy transition in the Czech Republic. To realize this potential, it is essential to address legislative barriers, invest in technological innovations, and upgrade infrastructure to support the growth of community energy initiatives. By doing so, the Czech Republic can accelerate its transition towards a sustainable and resilient energy future while maximizing the benefits of renewable energy integration.

Souce: Analýza rozvoje energetických zdrojů do roku 2040 včetně dopadů na bezpečnost a

spolehlivost ES ČR [online]

https://www.mpo.cz/assets/cz/energetika/strategicke-a-koncepcni-dokumenty/narodni-akcni-plan-pro-chytre-site/2021/10/1_Zdrojova_zakladna.pdf

PP4 FORSCHUNG Burgerland - Austria

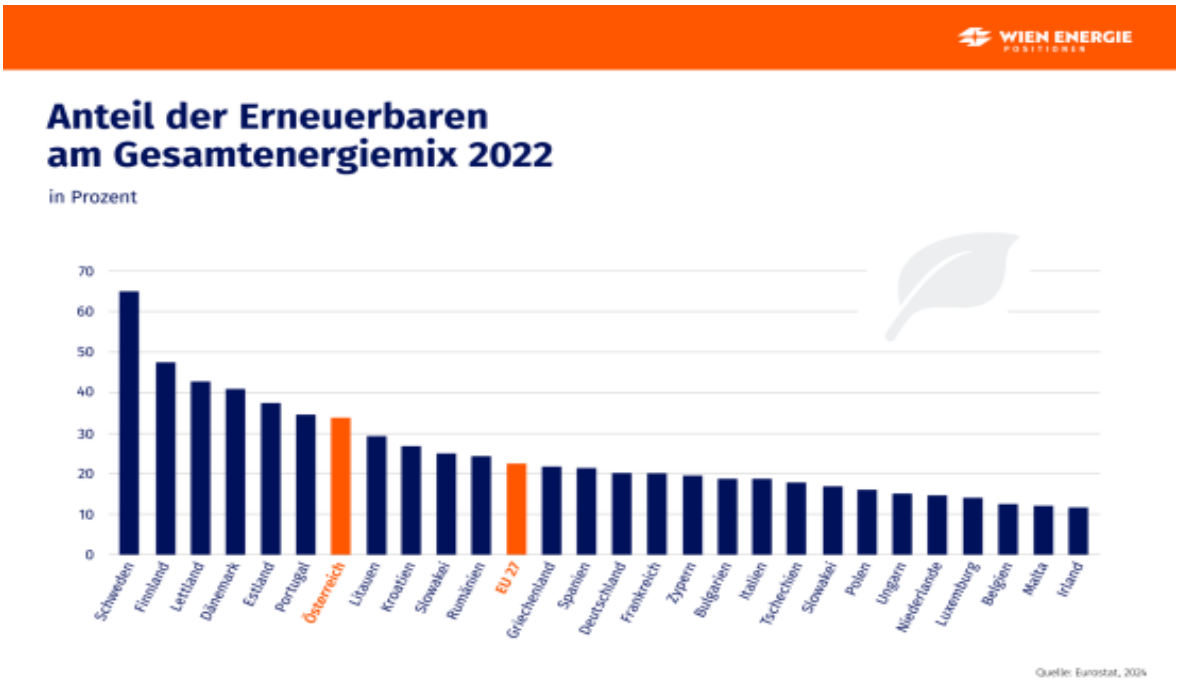
A built-in intelligent meter (smart meter) and the measurement and storage of quarter-hourly values (opt-in) are the prerequisites for being able to carry out billing within the energy community.

A survey of Austrian grid operators revealed that five renewable energy communities and one citizens' energy community were in operation at the end of 2021. Looking at the 2022 reporting period, 161 renewable energy communities and four citizens'

energy communities were already in operation as of December 31, 2022. Three of the four ECs were operating in the grid area of Wiener Netze GmbH and one in the grid area of Kärnten Netz GmbH.

At the same time, the survey also asked whether and how many energy communities were operating in the grid area of the respective grid operators by 30 June 2023. This resulted in an increase to in sum over 600 ECs and Citizens ECs during this period.

Currently in 2024 there are over 1190 ECs in Austria but an estimated share in % of ECs with regard to renewable energy sources in the national/regional energy mix is not available at the moment. Although the Austrian renewable energy mix is currently at around 34 %.



So for the future development of the energy mix according to RED III, where 42,5% have to be achieved till 2030, ECs, if the current development continues, will be one of the important parts in achieving this goal.

Link: www.e-control.at

Monitoring report 2023:

https://www.e-control.at/documents/1785851/1811582/E-Control-EAG-Monitoringbericht-2023.pdf/2104d8ca-4a61-d1da-3fde-d90ff7628b35?t=1696968629725

PP5 IRENA - Croatia

According to Eurostat, gross primary energy consumption in Croatia in 2021 was 9.61 Terrawatt hours (TWh) and final energy consumption was 8.1 TWh. Renewable energies account for 31.33 % of Croatia's energy mix, with 53.47% of total electricity production coming from renewables, primarily large hydropower plants. Croatia imports about 54.54% of the total energy consumed annually: 74.48% of natural gas, 78.34% of oil and petroleum products, and 100% of its solid fossil fuel needs. Croatia also co-owns the Krsko nuclear reactor in Slovenia, which is included in its energy mix as imported electricity.

In order to become energy-independent and sustainable, Croatia counts on its abundant renewable energy resources. In February 2020, the Croatian government adopted a new Energy Strategy for the period until 2030, with an outlook through 2050. The Strategy includes a wide range of energy policy initiatives that will improve energy security, increase energy efficiency, lower dependence on fossil fuels, increase local production and increase renewable resources. The Strategy predicts that renewable energy resources as a share of total energy consumption will grow to 36.4% in 2030, and to 65.6% in 2050. The government intends to spend about $1.4 billion on grid modernization, with a goal of increasing renewable energy source connections by at least 800 MW by 2026 and 2,500 MW by 2030.

Currently registrated EC is not participating in the energy mix (registered in 4/2024).

PP6 KSSENA - Slovenia

The Republic of Slovenia follows the objectives of the European Union in the field of renewable energy and energy efficiency through the National Energy and Climate Plan (hereinafter referred to as: NEPN). NEPN is a strategic document laying down the objectives, policies and measures for Slovenia on the five dimensions of the Energy Union for the period up to 2030 (with a view to 2040):

- decarbonisation (greenhouse gas emissions (GHG) and renewable energy sources (RES)),
- energy efficiency,
- energy security,
- the internal energy market and
- research, and innovation and competitiveness.

The key objectives for the 2030 identified in the NEPN (NECP) are:

- reducing the total greenhouse gas emissions by 36%,
- at least a 35% improvement in energy efficiency,
- **at least a 27% share of renewable energy sources in final consumption; due to the relevant domestic circumstances, Slovenia had to agree to a lower target than that of the EU (32%), but will strive to increase this ambition in the next NEPN update (2023/24),**
- and last but not least, 3% of GDP to be spent on R&D, of which 1% of GDP will be public funds.

Due to the complexity of achieving the overall RES target, Slovenia has set **other objectives** in addition to the sectoral targets for the share of RES in gross final energy consumption, **including the establishment of incentive legislative frameworks to accelerate the development of community-based renewable energy (community power plants) and the targeting of RES investments to areas that do not require significant additional investments in the grid**. With the adoption of the ZSROVE, the ZOEE and the Decree, this objective has been partially achieved, but there is still room for progress in the development of energy communities.

It should be recalled that Slovenia is lagging behind the targets and is at the tail end of the EU in terms of meeting its RES targets, for which it has to make a statistical purchase of the missing RES share each year if it wants to continue receiving EU funds for these purposes. Under the Directive on the promotion of the use of energy from renewable sources committed Slovenia to achieving a 25% share of energy from renewable sources in gross final energy consumption by 2022. In order to reach the target, the country had to ensure the missing share through a mechanism of statistical transfer of this type of energy from another EU Member State. The share achieved was 22.94%, so Slovenia carried out a statistical transfer of 1,193 GWh of renewable energy on the basis of an agreement with Croatia.

In 2022, Slovenia produced 4308 GWh of electricity from RES. It is encouraging to see that the production of electricity from solar power plants has increased in recent years, mainly due to the increase in self-supply. In 2022, the production increased by 49% compared to 2021. However, the majority of electricity from RES is still prduced in hydropower plants, which have traditionally been the main renewable electricity source in Slovenia. The introduction of the RES and CHP support scheme in 2009, along with the introduction of the self-supply of electricity from RES, provided an incentive for investors to invest in electricity generation from other RES, primarily solar power plants, but also including biomass and biogas, which are not directly dependent on weather factors.

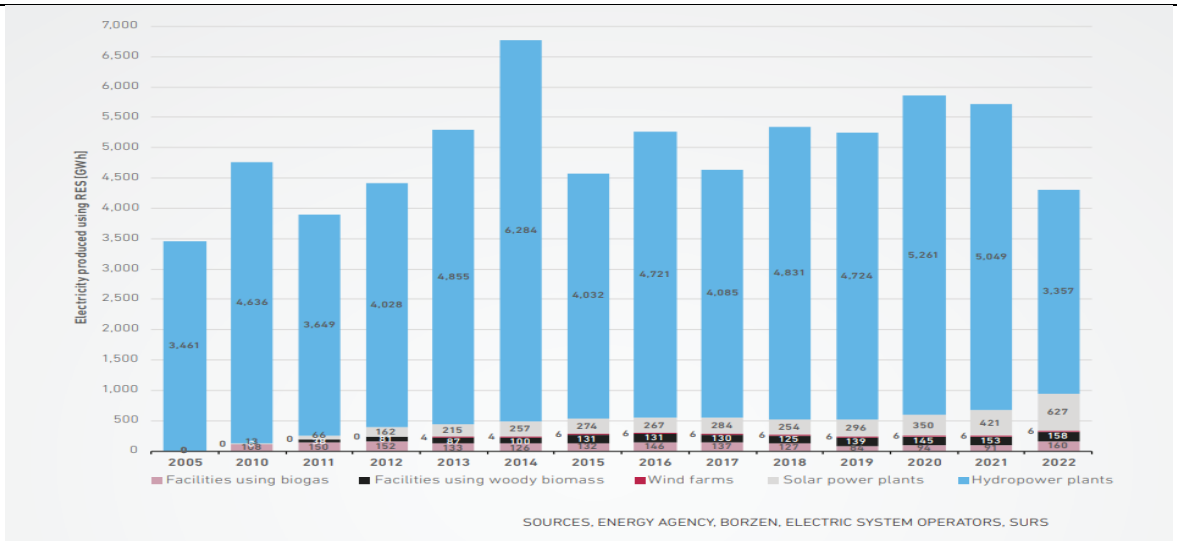


Figure 1: Electricity production using res in the 2005 base year and in the 2012–2022 period
Source: Report on the energy situation in slovenia, Agencija za energijo, 2022.
https://www.agen-rs.si/documents/54870/68629/Report-on-the-energy-situation-in-Slovenia-2022/d72a2865-931f-441d-b8a3-0346eac0e59a

The development of electricity production from RES plays a key role in reducing greenhouse gas emissions. Since this is one of the most important activities for achieving the common objectives of sustainable development of the energy sector, EU countries can introduce a number of measures and incentives to encourage the development of this type of production that count as state aid. Since 2009, Slovenia has had a state aid scheme, a support scheme for electricity production using RES and CHP, which comes in the form of guaranteed prices and premium tariffs. In addition to state aid, funds for RES development are also available in the form of investment incentives, mostly as part of cohesion policy measures. In 2022, grants for co-financing the purchase and installation of solar power production devices were made available.

The self-supply of final consumers has also had an important impact on the development of RES in recent years. This is implemented on the basis of the Decree on the Self-Supply of Electricity from Renewable Energy Sources and is aimed at household and small business consumers who connect production facilities for the generation of electricity from renewable energy sources to the internal wiring of the buildings in which they are installed. On the basis of the ZSROVE, a new Decree on the Self-Supply of Electricity from Renewable Energy Sources was enacted in April 2022. A major change compared to the current regime is the revised calculation of network charges and levies for all production facilities entering the self-supply system after 2024.

In 2016, when the connection of self-supply installations in Slovenia started, only 135 self-supply installations with a total connection capacity of 1.1 MW were connected. In 2022, by contrast, 12,140 new installations were connected, with a total capacity of nearly 154 MW. In 2022, a total of 27,382 self-supply devices with a total installed capacity of 349 MW and an average installed capacity of 12.7 kW were thus in operation. As the number of self-supplying consumers have been increasing, so has been the average power of self-supplying devices, mainly due to the increasing use of electricity to heat buildings with heat pumps and the growing interest in using self-supply devices to charge electric vehicles at home. Based on data from the last seven years, the Energy Agency made an estimate of the increase in the number (using a second-degree polynomial) and total power of self-supply devices until 2023 (based on the average power of devices connected in 2022). Under such dynamics, almost 36,000 customers are expected to be self-sufficient in electricity, with the total power of the self-supply devices amounting to almost 465 MW by the end of 2023.

According to the legislation, a self-supply device may produce electricity using solar, wind, hydro or geothermal energy, or it may be a CHP unit that uses RES as the primary source. In practice, solar power plants are overwhelmingly predominant (27,345 devices), while there are only 34 devices using hydropower and only three installations using wind power.

Together with the development of self-supply, the number of production facilities for community self-sufficiency is expected to increase over the next few years. The first facility for community self-supply, with a rated power of 14 kW, was connected in 2019. In 2020, four such installations with a total connected capacity of 86 kW were connected. In 2021, 25 installations with a total connected capacity of 1100 kW were connected, while in 2022, another 29 installations with a total connected capacity of 2000 kW were connected. By the end of 2022, there were already 59 community self-supply facilities in operation, totalling 3200 kW.

Due to the measuring method and the annual netting of electricity produced and consumed, the annual production of electricity in self-supply devices connected behind the final consumer delivery point can only be estimated. This estimate depends on the type of production facility, the installed capacity and the reference monthly operating hours. As many as 99.8% of all self-supply devices are solar power plants, which means that the estimated electricity production depends heavily on the time of year and geographical and weather factors. In 2016, the estimated amount of electricity produced by self-supply devices was only 0.6 GWh, while in 2022 it was already at 288.3 GWh.

PP8 REDASP - Serbia

"Official Gazette of RS", No. 8/2024

PP9 OER - Romania

Currently, we do not possess any relevant information on this fact.

PP11 DIT - Germany

Energy communities in Germany engage with around 86 % primarily in electricity energy production (electricity (photovoltaics, wind) and heat (biomass)), but also in energy distribution, as well as investments in renewable energy. Less often energy communities act as grid operators (bioenergy villages, "Bioenergiedörfer").

According to the „Energy Cooperatives in Germany State of the Sector 2023 Report" of DGRV, energy communities have 3 % share of the total renewable electricity generation in Germany. In 2022, energy cooperatives generated around 8 terawatt hours of clean electricity. This avoided around 3 million tonnes of CO2 equivalents in the electricity sector.

The predominant business field of energy communities in Germany is electricity energy production (86%). Also, around 100 communities operate their own grid (e.g., bioenergy villages (Bioenergiedörfer) and around 150 operate grids and distribute heat and electricity but do not produce electricity. A minority of the energy communities distribute electricity or heat without operating their own grid.

PP12 NEK - Slovakia

The current problem is how to make EKs attractive in the situation of the current world energy crisis and the particularities of the Slovak energy mix.

Interest in energy communities/communities has been growing rapidly in Slovakia recently, and it is clear why. They can be an excellent way to ensure self-sufficiency based on renewable energy sources (hereinafter referred to as "RES"), to build and develop communities and to actively participate in the energy transition.

The rights and obligations of RES communities are defined by Act no. 363/2020 Z .z. on the promotion of renewable energy sources, which states that "end customers, especially households, are entitled to participate in the community's RES activities, while retaining their rights or obligations as end customers".

The concept of community energy as building self-sufficiency, reducing energy consumption and greater involvement of renewable energy sources in the energy mix originated in the European Union (EU). Key legislative acts aimed at anchoring community energy were mainly the Renewable Energy Directive (RED) and the Electricity Market Directive (EM

The October 2023 revision of the RED III renewables directive confirms that projects such as energy communities contribute to reducing fossil fuels, increasing the share of RES in the energy mix and building resilience. For example, according to a study by EGÚ Brno (2021), it is possible to cover 80% of the energy needs of households in the entire territory of the Czech Republic by using the energy produced in this way, but due to the same market conditions from the time of the former Czechoslovakia, the same applies to Slovakia as well. Energy communities are typically founded on the basis of RES, they contribute to sustainable and local energy production, which is recognized, for example, by the International Energy Agency (International Energy Agency, 2023).

According to the major amendment to the Act on Energy of the Ministry of Economy of the Slovak Republic (MH SR), from 2022, the rules of the electricity market in Slovakia already form the basis for the development of the activities of new participants in the electricity market, such as energy communities or communities, operators of electricity storage facilities, active customers , etc.

Aggregation has become one of the new concepts in Slovak energy legislation, in addition to accumulation or energy communities.

The essence of the given legislative change is that aggregators can enter the market. They will make it possible to provide supporting services for the system even to smaller players, for example companies with their own resources for electricity

production or with devices that, on the contrary, consume electricity. The details were adjusted by the long-awaited market rules from the workshop of the Office for the Regulation of Network Industries (ÚRSO).

A practical prerequisite for the functioning of flexibility aggregation in Slovakia was the construction of the Energy Data Center (EDC). This subsequently became operational from 1/10/2023, when electricity is shared through this newly created data hub, which is operated by the state short-term electricity market organizer, OKTE. The EDC project was launched at the end of January 2023 and entered the production phase from October 1, 2023 after the market rules were updated. One of the provided functionalities is the sharing of electricity.

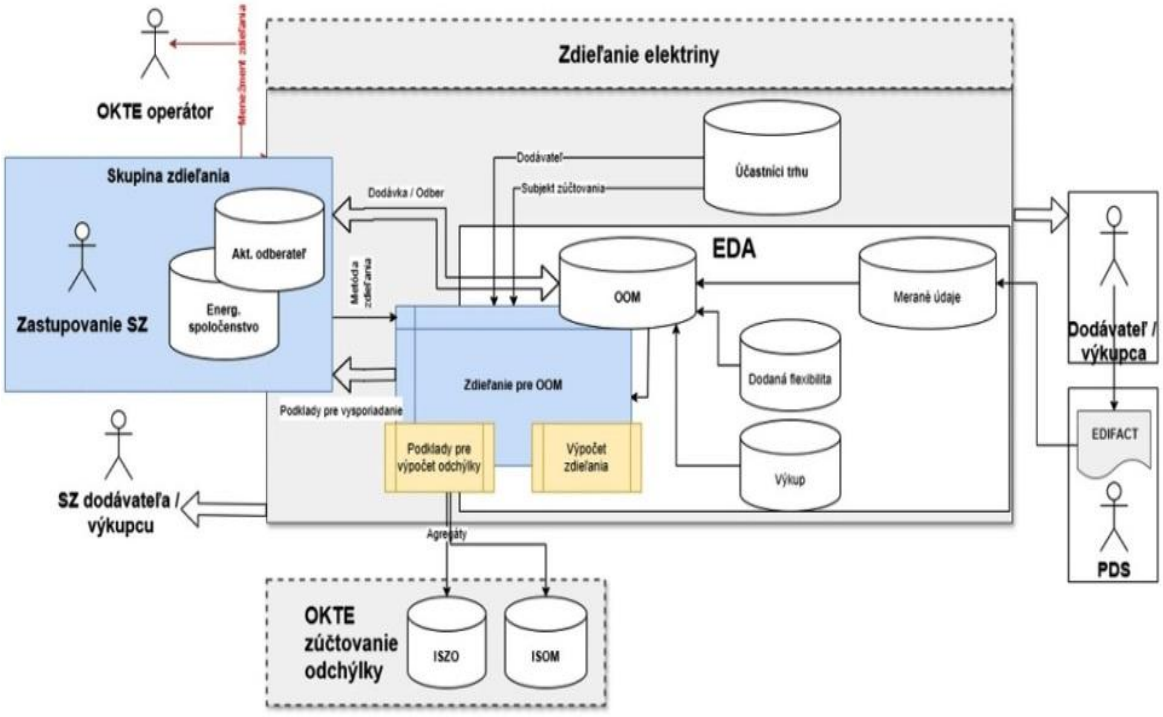
Flexibility aggregators are a solution to reduce consumers' costs for electricity and, at the same time, their carbon footprint. They can optimize and manage the operation of flexible devices of both consumers and manufacturers in real time. The task of the aggregator will be to aggregate non-necessary electricity from consumers and smaller providers and then provide it to the transmission system. As an example, we can cite municipal heating plants, which, while producing heat, also produce electricity, which is a tremendous opportunity for the establishment of the relevant EC, also with the participation of the local government.

According to SEPS, the flexibility aggregator adjusts the operation of this heating plant based on its instructions in order to regulate the electrical system, i.e., for example, it increases the output of the heating plant in the event of a lack of electricity in the system. Of course, this view of the state company may not always be compatible with the specific conditions that the relevant EC would define and enforce.

The operation of sharing electricity through the OKTE Energy Data Center, in verbal terms, is shown in the following picture:

Podstatou danej legislatívnej zmeny je, že na trh môžu vstupovať agregátori. Tí umožnia poskytovať podporné služby pre sústavu aj menším hráčom, napríklad firmám s vlastnými zdrojmi na výrobu elektriny alebo so zariadeniami, ktoré elektrinu, naopak, spotrebúvajú.

Podrobnosti upravili dlho očakávané pravidlá trhu z dielne Úradu pre reguláciu sieťových odvetví (ÚRSO).



Source: Presentation by R. Gaňo at the eFocus conference, 2023
https://www.energie-portal.sk/files/Priloha2/zdielanie_elektriny_EDC_OKTE.jpg

Some electricity suppliers also provide their own services under the same name, but the principle on which electricity sharing via EDC is based is based on European legislation and works differently. OKTE makes it possible to share electricity regardless of who is the supplier of electricity at individual collection and delivery points. It applies here that sharing electricity via OKTE EDC is not subject to any fees.

The launch of EDC and the functioning of flexibility aggregation in the future will probably significantly help some ECs or ECs.

The main contribution of EDC lies in ensuring new market functionalities for active customers and activities related to aggregation, electricity sharing and operation of electricity storage facilities. The system will also allow new and small market participants to operate and make data available to end customers.

The launch of EDC in Slovakia is divided into several phases. In the first, registration of new market participants was possible from 1.7.2023, and from 1.10.2023, the actual operation of the EDC information system was launched, which enabled aggregators, operators of electricity storage facilities and electricity sharing groups.

In the second phase, OKTE's task will be to expand the base of basic functionality mainly by changing the balance group, by expanding the methods of calculating electricity sharing, by applying flexibility aggregation to technology and enabling the creation of aggregation blocks for flexibility aggregation. This will ensure greater comfort and strengthen the functionality of EDC so that the entire implementation will be completed by July 1, 2024 at the latest.

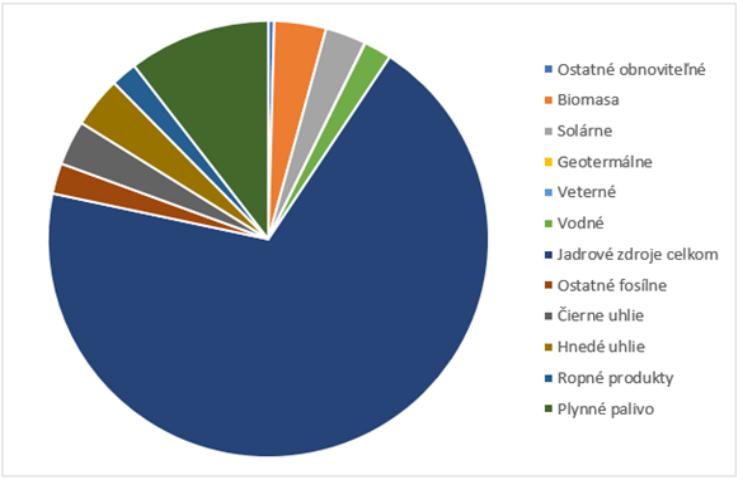
If we take into account the fact that, in accordance with the terms of the new legislation, the first representative of community energy, after a formal check of the requisites of registration at the ÚRSO, received a certificate of establishment only on 24 July 2023, we logically estimate that the real rate of all, even since then, ECs on the domestic energy mix of the country is still negligible. However, the success and confirmation of the use of the potential of the energy communities will also depend on the fulfillment of the technical prerequisites for sharing electricity, which is mainly made possible by the use of EDC.

Energy mix of Slovakia

currently (official statistical data for the year 2023) atomic energy/nuclear accounts for up to 60%, fossil energy sources (gas and coal-based) for up to 18%, hydropower from hydropower plants for 15% and follows and finally solar energy worth only 3.0% and energy generated by biomass processing amounting to 4.0%. This is a significant figure in which it is clear that concentrated energy from central sources prevails in production, which makes it difficult to build energy communities in the future.

Due to only the initial phase of development and establishment of the EC, these contribute only to a small extent to the Slovak domestic energy mix, according to a qualified estimate, approx. 1-1.2%. This is mainly EC in the form of various housing associations, linked to industrial producers in cities and towns in the area of RES.

The current energy mix with a view to 2030 can be simply displayed on a pie chart as:



Color spectrum of narrow fields - RES (biomass, solar, wind, geothermal)

Dark blue large field - nuclear energy

Light blue field - petroleum products

Brown field - coal-based fossil resources

Dark green field - gaseous fuel

Circuits/Specifications:	Example/Utility Brief
7. Do EK also provide energy distribution, storage and energy production at your place, and in what proportion?	In particular, state whether the EC structure at the given stage of development in your country allows, in addition to energy distribution and customer networking, activities such as storage and the actual production of energy from

	RES? Provide, where appropriate, an estimate of the percentage ratio of individual components of the activity.

PP2 IMRO-DDKK, STRIA - Hungary

No.

According to the legislation „ECs can engage in production, among others from renewable sources, supply, consumption, aggregation, energy storage, energy efficiency services or charging services for electric vehicles or in the provision of other energy service to its members or shareholders".

In Hungary all ECs are in the setup stage and they have not yet started power trading.

PP3 JAIP – Czech Republic

Legislative Framework for ECs

In January 2024, the Czech Republic introduced legislation to regulate energy communities, distinguishing between energy communities (CECs) and communities for renewable sources (RECs). These regulations aim to ensure coherence with EU principles and provide a framework for effective control and proximity requirements tailored to the Czech context.

Until June 30, 2026, sharing groups within communities are limited to a maximum of 1,000 registration numbers, with subsequent sharing activities restricted to active customers. Furthermore, no discounts are provided on distribution fees, renewables support fees, or electricity taxes, although anticipated changes to energy sharing legislation are expected in the summer of 2024.

Activities Permitted for ECs

ECs in the Czech Republic are permitted to engage in a range of activities, including energy distribution, storage, and production from renewable sources. Sharing electricity within communities allows individuals to benefit from renewable energy sources, facilitated by community suppliers. Members can reduce their bills by receiving shared electricity, and communities themselves can become suppliers with appropriate licensing.

Energy communities have specific rights, including the ability to draw and generate electricity for self-consumption, as well as to supply electricity produced by community-operated plants to electricity traders. Additionally, communities for renewable sources have rights pertaining to electricity production from RES, including the production of electricity outside their territory.

Energy Distribution: ECs have the right to draw and generate electricity for self-consumption, as well as to supply electricity produced by community-operated plants to electricity traders.

Energy Storage: While not explicitly outlined in the legislation, ECs possess the potential to engage in energy storage activities, contributing to grid stability and resilience. Data suggests a growing interest in storage technologies such as batteries and pumped hydro storage among community stakeholders.

Renewable Energy Production: ECs, particularly communities for renewable sources (RECs), are empowered to produce electricity from renewable sources both within and outside their territory. Projections indicate a substantial increase in installed photovoltaic (PV) power capacity by 2029, underscoring the importance of REC involvement in renewable energy generation.

Despite the opportunities presented by ECs, challenges remain. The "**first come first served**" rule for capacity allocation poses concerns about the exhaustion of capacity in villages and communities. Additionally, limitations on the size of production plants and the connection process may hinder the growth of ECs. Addressing these challenges requires collaboration between stakeholders and regulatory adjustments to ensure the sustainable development of ECs.

Capacity Exhaustion: The "**first come first served**" rule for capacity allocation poses a challenge, as a single applicant can utilize the entire municipality's capacity, limiting opportunities for others.

The exhaustion of capacity in villages and community energy is a concern due to the "**first come first served**" rule, where a **single applicant can utilize the entire municipality's capacity**. Subsequently, other applicants are connected **without overflow to networks**, utilizing the micro-resource in simplified connection methods. However, this approach may limit future involvement in the energy sector for **active customers** in terms of flexibility, aggregation, and community participation. To address this issue and accommodate a larger number of customers within municipalities, establishing **reasonable guaranteed reserved power** (2-3 kW of flow to the network) would enable a significantly broader range of

applicants to engage as active customers in the future. Additionally, the accelerated renewal and development of networks in cities and municipalities are essential for further RES development, necessitating close collaboration with municipalities and state administration through **public and property law hearings**.

Reserved Power Limitations: Current regulations impose limitations on reserved power for newly connected plants, hindering the expansion of ECs and their ability to accommodate a larger number of active customers.

Infrastructure Constraints: Accelerated network renewal and development are essential to accommodate the growing demand for renewable energy production and distribution. Collaboration between municipalities and state administration is crucial to overcome infrastructure constraints and foster the growth of ECs.

The reasonable size of factories for households is often capped at a maximum subsidy for a 10 kWp factory, which is typically oversized for most households. A 10 kWp production plant can generate over 60 kWh of electricity per day during the summer, while the average household consumes around 8 kWh. It's unrealistic to accumulate excess energy or consume it at the collection point. Excess flows to the network strain its capacity and limit the connection of future interested parties to the factory. Comparing the daily consumption of an average household to the production from a 10 kWp system, setting the maximum permitted power flow into the distribution system (reserved power) to a defined value compared to the installed value would significantly increase the number of satisfied applicants. Under current conditions, the number of satisfied applicants would be considerably lower.

50 kWp výrobna vyčerpala kapacitu pro desítky dalších odběratelů v obci

Energy communities in the Czech Republic play a crucial role in driving the transition towards a sustainable and resilient energy future. By engaging in energy distribution, storage, and production activities, ECs contribute to renewable energy adoption, grid stability, and community empowerment. However, to realize their full potential, it is imperative to address regulatory barriers, infrastructure constraints, and capacity limitations. By implementing the recommendations outlined in this report and fostering collaboration among stakeholders, the Czech Republic can unlock the transformative power of energy communities and accelerate its transition towards a cleaner, more sustainable energy system.

PP4 FORSCHUNG Burgerland - Austria

Yes, ECs in Austria currently provide the opportunity to produce, store, consume, and sell energy. However, these activities are subject to specific legal and technical conditions that apply to each individual energy community.

Production:

Energy communities generate energy from renewable sources such as solar, wind, water, or biomass. Members of energy communities collectively operate photovoltaic systems, wind turbines, small hydroelectric power plants, or biogas plants.

Storage:

The storage of surplus energy is an important aspect for energy communities. Currently, storage solutions such as battery storage or power-to-gas plants are being tested in pilot projects. However, energy storage faces various challenges, including data security, network fees, costs, and technical complexity.

Consumption:

Members of energy communities use the self-generated energy to cover their own energy needs. The produced electricity is consumed locally, leading to a decentralized energy supply.

Sale:

Surplus energy that is not consumed by the members of the energy communities can be sold. Currently, the standard practice is that energy communities return the unused energy to their members, who then sell the energy to third parties such as energy supply companies (EVUs) or the Austrian electricity market (OEMAG).

It is important to note that there are restrictions for energy communities known as the "proximity criterion" (Naheberichkriterium). According to current regulations, energy produced within an energy community but not consumed can be subsidized by market premiums up to a maximum of 50% of the total generated electricity.

PP5 IRENA - Croatia

According to the Law on the electricity market, EC is a legal entity that is based on voluntary and open participation and is under the actual control of its members or share owners who are natural persons, local self-government units or small businesses, and whose primary purpose is to provide environmental, economic or social benefits to its members or owners of shares or local areas in which it operates and does not generate financial profits and which can participate in production, among others from renewable sources, supply, consumption, aggregation, energy storage, energy efficiency services or charging services for electric vehicles or the provision of other energy service to its members or shareholders.Proportions are not set by the Law.

PP6 KSSENA - Slovenia

A renewable energy community as defined in ZSROVE has the right to produce, consume, store and sell energy from renewable sources, including on the basis of contracts for the purchase of electricity from renewable sources. It has equal access to all relevant energy markets, both directly and through aggregation. Legal persons engaged in an economic activity may be members of a RES community, unless they do not carry out their main economic or professional activity as part of their participation in the community. The right to produce energy from renewable sources for their own consumption, to store it and to sell their excess electricity produced and fed into the distribution system, including on the basis of contracts for the purchase of electricity from renewable sources, through electricity suppliers and according to the rules of reciprocal exchange, applies in general to all self-supplying customers, irrespective of the type of self-supply.

Similarly ZOEE defines a citizen energy community as legal entity that may be engaged in generation, including generation from renewable sources, electricity supply, consumption, aggregation, energy storage, energy efficiency services or the provision of electric car charging services, or the provision of other energy services to its members or associates.

In addition, participants in the electricity market can act as follows:

- Producer: sells on its own behalf under an open contract;
- final customer: purchases on its own behalf under an open contract;
- supplier: sells to final customers or buys from producers under an open contract;
- independent aggregator: carries out aggregation activities and is not a supplier of a customer or a producer;
- trader: buys and sells electricity under a closed contract.

An individual legal or natural person may, subject to compliance with the legal conditions, simultaneously carry out more activities from the listing above.

This includes aggregators, active customers with or without storage facilities, energy communities and renewable energy communities.

PP8 REDASP - Serbia

The Republic of Serbia, by amending the Law on Energy according to the recommendation of the European Commission, clearly defined and predicted the possibilities for the production of Electricity from Renewable Sources, ways of connecting to the grid, distribution of Energy in the system, use of Energy in a closed distribution system, battery plants, methods of calculation.

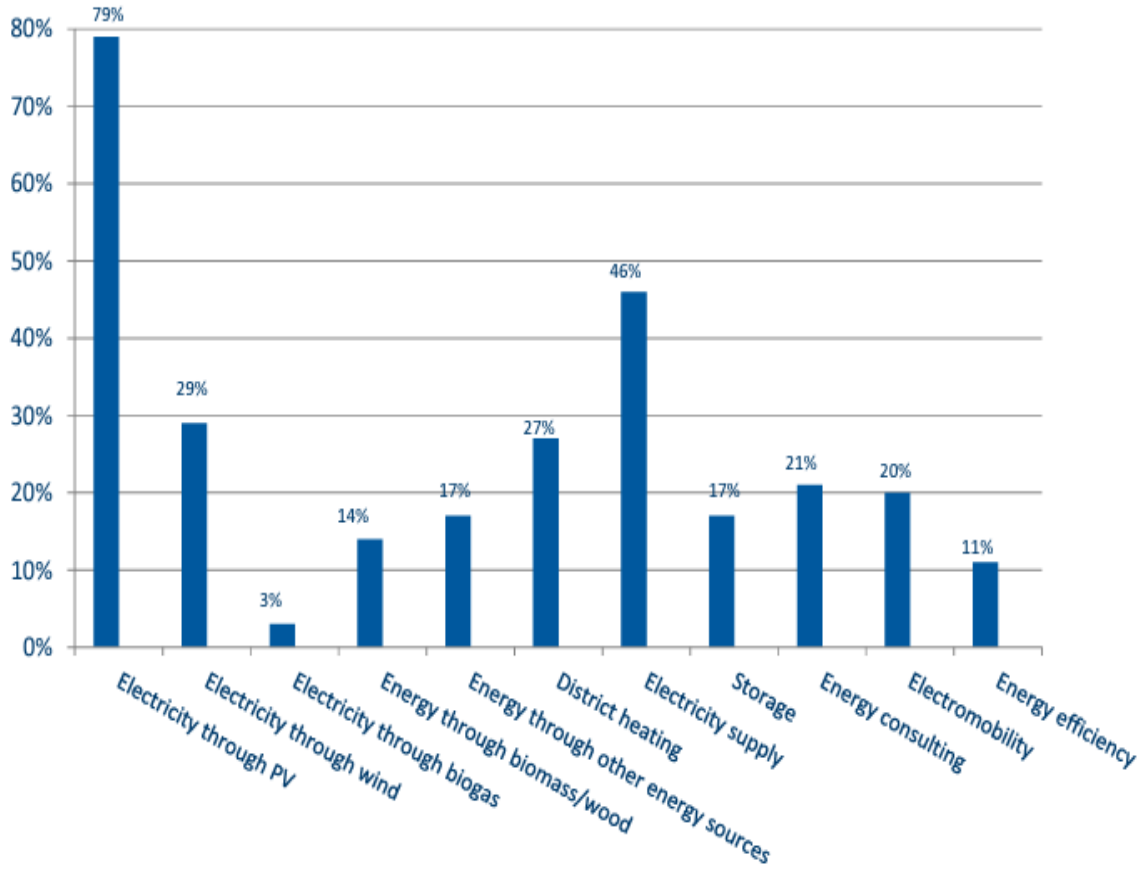
PP9 OER - Romania

Currently, we do not possess any relevant information on this fact.

PP11 DIT - Germany

Energy communities in Germany are active in energy distribution, storage and energy production.

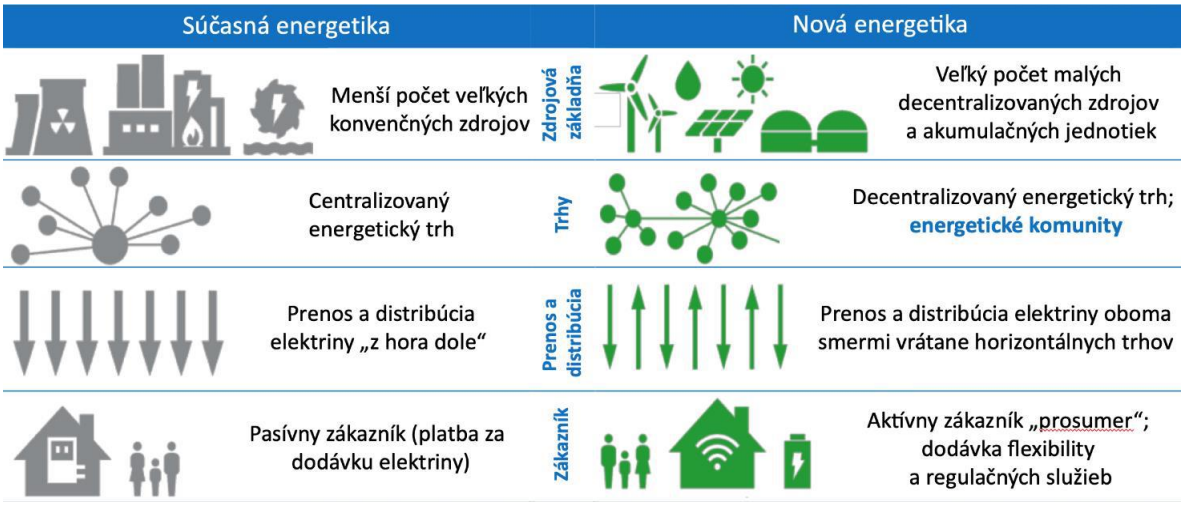
Overview of areas (2022)



Source:https://www.dgrv.de/wp-content/uploads/2023/07/DGRV_Survey_EnergyCooperatives_2023.pdf

PP12 NEK - Slovakia

It can be said that the energy sector is currently undergoing a complex change. This change can also be represented graphically, which we present in the following image:



Source: Presentation by R. Modrák-EK-2024-theory-vs-practice (REC4EU, SIEA)

In addition to expanding the range of possible methods for calculating sharing from July 1, 2024, new features will also be available. For example, it will be possible to say that only a certain percentage of the generated electricity can be shared using the dynamic method.

According to the Slovak Electricity System (SEPS), the main benefit should be more participants, with the ambition that the aggregator can better organize a certain group of entities that have different consumption or production curves.

In Slovakia, it is SEPS that is responsible for the stable operation of the transmission system, and one of the key tools for ensuring it is the support services that this state company purchases from their providers in a public tender.

SEPS published the conditions for the procurement of support services (PpS) and the rules of participation for entities interested in participating in the purchase of support services for the period from 1.1.2024 to 31.12.2024 last year so that they submitted their applications within the qualification phase by 29.9.2023 together with documentation within the scope of procurement conditions.

While the provision of PpS has not been a relevant option for small companies that operate, for example, a biogas station or a diesel generator, the new possibilities change the paradigm. In the aggregated whole, ECs can also be involved in the provision of services for SEPS.

For businesses, including EK, this can be one of the options for optimizing energy costs, transforming own energy management from a cost item into a new source of income, or in the case of EC for balanced management.

The distribution and storage or production of energy in the current state of development in Slovakia is actually only in the beginning, but several integrated business and implementation projects have already been developed and approved, and from July 1, 2024, the range of possible methods for calculating sharing will be expanded using the dynamic method of monitoring and co-participation - operated on the functioning of EC. The main problem for many years was ensuring the stable operation of the transmission system and the degree of local involvement of the EC in it.

SEPS issued the conditions for the procurement of support services and the rules for EC participation in them and requires that ECs pass the conditions for procurement and involvement in energy network services in Slovakia within the qualification phase of their competence.

Today, it is not possible to talk about a typical Slovak model of management and distribution within EC management, so only well-known and adapted models for process management of management in SMEs and industrial energy cluster groupings are applied.

According to the major amendment to the Act on Energy of the Ministry of Economy of the Slovak Republic (MH SR), from 2022, the rules of the electricity market in Slovakia already form the basis for the development of the activities of new

participants in the electricity market, such as energy communities or communities, operators of electricity storage facilities, active customers , etc.

A special contribution in the framework of building information, technical and theoretical databases and EC is the creation of the National Platform of Energy and Environmental Clusters and Associations in 2022, in which 8 significant regional and national organizations have joined today in Slovakia.

Circuits/Specifications:	**Example/Utility Brief:**	
8. What internal models of management and distribution of tasks and functions within the EC ensures and to what extent the EC management?	Write and draw a general model/diagram of a typical typical EC organizational structure in your country. Indicate whether, in addition to founding and registration documents, EC also has separate institutes and organizational or operating regulations for functioning	

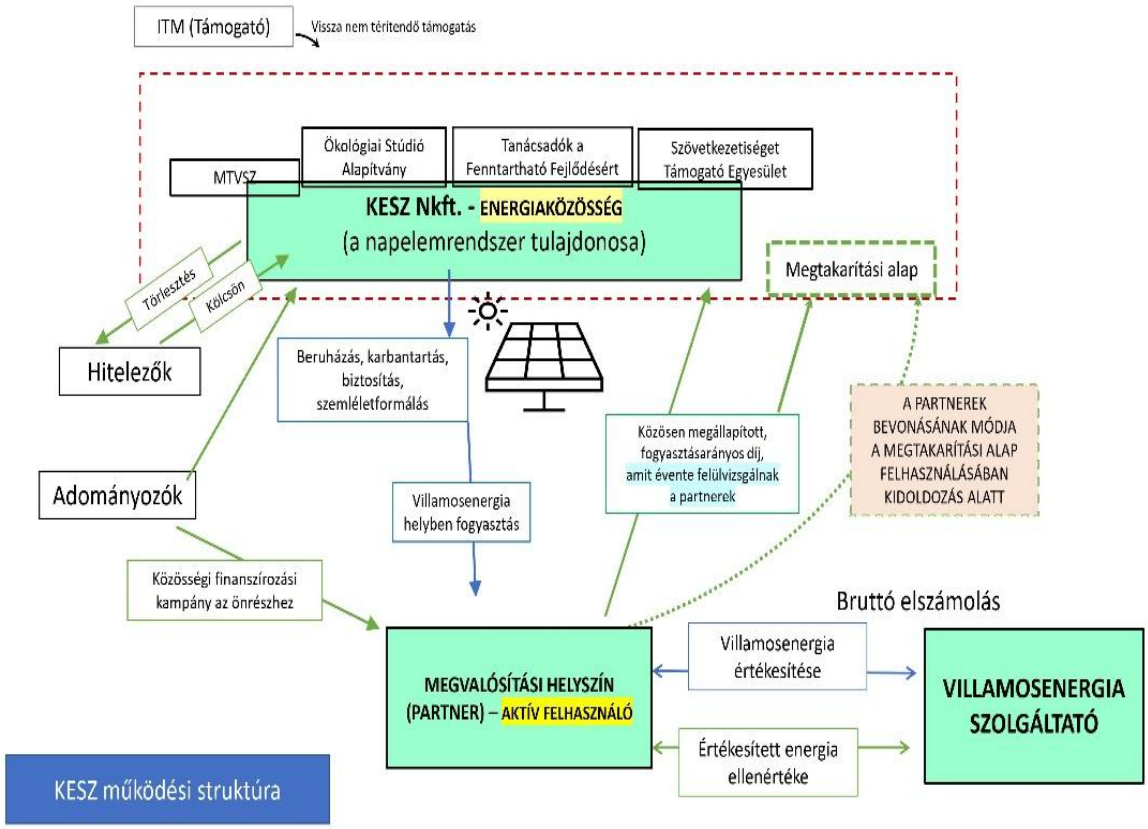
PP2 IMRO-DDKK, STRIA - Hungary

Pannon Energy community: the internal modes of management are currently in phase of development, so no details can be said at this moment. They plan to set up these tasks and functions by the end of the summer, so that they can enter operational mode by the autumn of 2024. What they can say at this point is that the actual organisational structure will also depend on the used technical solutions. These are currently in the planning and procurement phase (e.g. energy management, reporting, accounting software etc.)

Bábolna energy community: They will work out the organisational structure during the summer of 2024. It will also depend on what rights and responsibilities members will have. The plan is to employ one full time energy expert and part time energy experts (which will be subcontracted from energy community member companies – they have many such staff members). The executive director will be a part-time person. The financial management will be outsourced. The main contact person of the energy community will be the energy expert. (Currently it is the municipal clerk, with whom this interview was made.)

KESZ energy community: Currently there is only the founding document. (The written operational rules are not yet in place.) Currently only an executive director is employed. The decisions will be prepared (and essentially taken) by the energy community members in the ltd members' committee meeting. Legally, these decisions will be signed by the executive director. Examples for decisions may include to review production data to approve adding new sites, how to use the produced energy, reviewing pro-contra arguments etc. As KESZ intends to become a member of RESCOOP, they want to follow the basic principles of cooperatives. (They decided to become a non-profit ltd due to administrative issues during setup.)

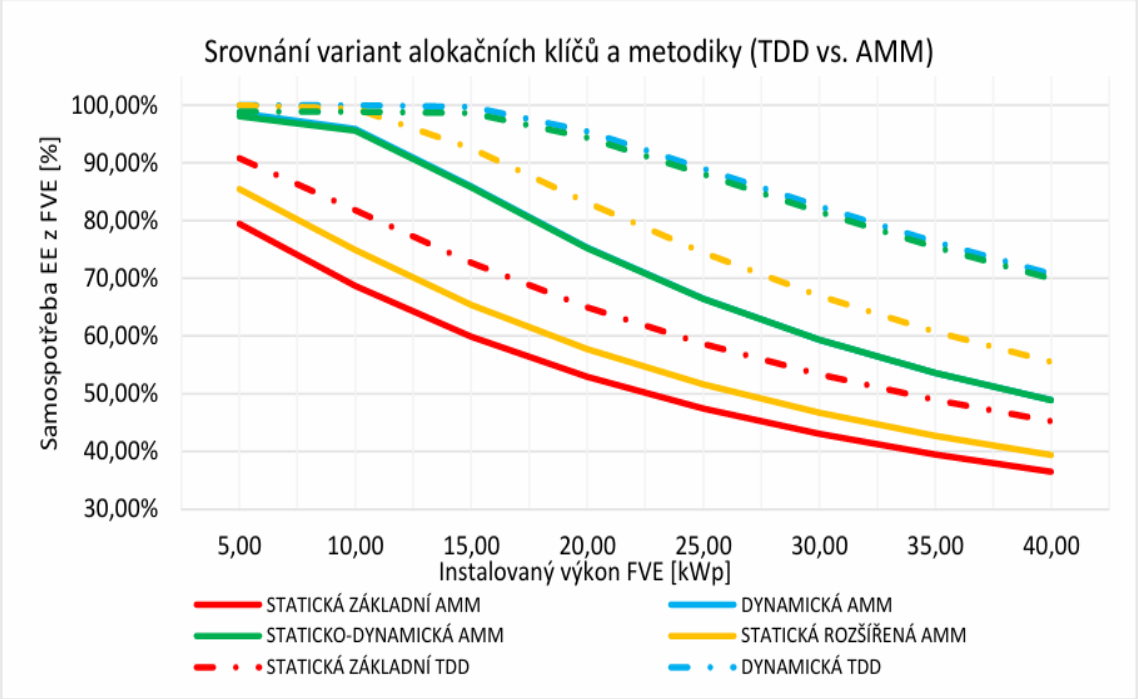
A lawyer's office helped KESZ working out their organigram, as pro-bono contribution. This image shows this structure (translation below):



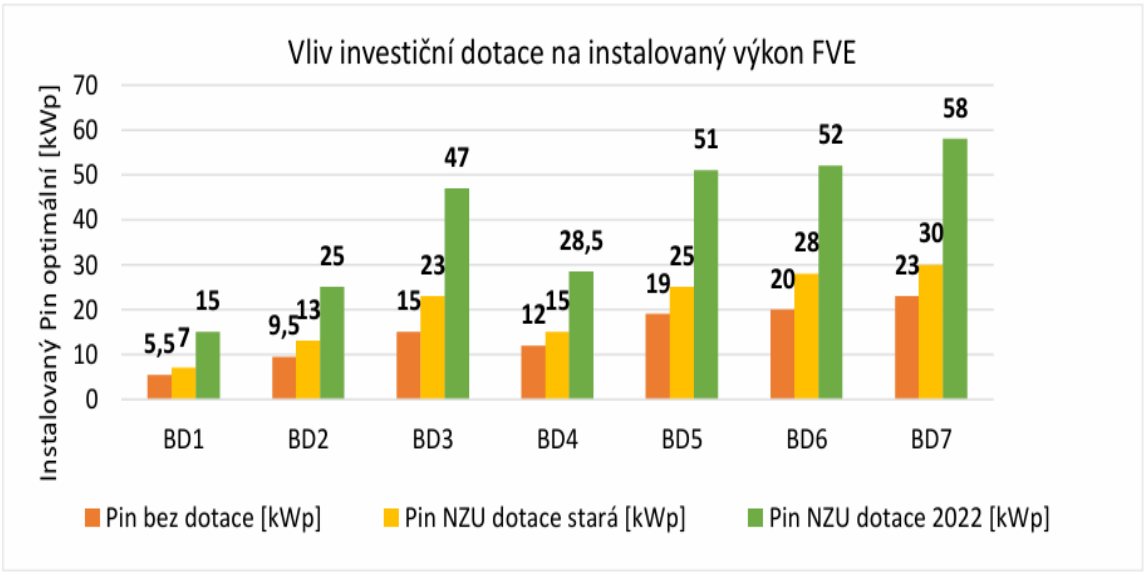
In the middle, green: KESZ nLtd, energy community, owner of the PV systems
To the right: reserve fund
Above: the founders
Left: the creditors
Middle: investment, maintenance, insurance, awareness raising, as well as local power consumption
Below green: the implementation site (partner), as prosumer
Green below right: selling energy to the power distributor (and receiving money in return)
Middle left: donors. Community funding campaign for co-financing.

PP3 JAIP –Czech Republic

In modelling the operations of energy communities, various allocation methods for energy distribution have been considered, including Static, Static Expansion, Dynamic, and Static-Dynamic methods. Each method has its advantages and disadvantages, with their selection dependent on factors such as community size, energy demand, and investment subsidy support.



Investment subsidy support significantly impacts the operation of energy communities, influencing the installed capacity of production plants. While subsidies incentivize the development of renewable resources, they can lead to oversizing of production plants, especially in larger-scale community projects.



Source: Postup přípravy založení energetických společenství v obcích a městech ČR, MŽP, 2022

To ensure the effective and sustainable development of community energy in the Czech Republic, several key steps are recommended:

Financial Incentives: Provide appropriate financial incentives for EC participants and founders to optimize production facilities and prepare for project operations effectively.

Flexibility in Connection: Enable flexibility in connecting factories to reflect the real necessary reserved power of the network,

avoiding oversizing and ensuring efficient energy distribution.

Quality Assurance: Emphasize the competence and quality of installation and consulting companies involved in the preparation and emergence of energy communities to ensure reliable and efficient operations.

General Model of a Typical EC Organizational Structure

A typical EC organizational structure in the Czech Republic comprises the following components:

- Founders and Participants: Individuals or entities responsible for initiating and participating in the energy community.
- Management Board: Oversees the strategic direction and decision-making process of the energy community, including allocation methods and investment strategies.
- Technical Team: Responsible for managing the technical aspects of energy production, distribution, and storage within the community.
- Financial Team: Handles financial matters, including budgeting, accounting, and securing funding or investment subsidies for community projects.
- Legal and Regulatory Compliance Team: Ensures compliance with relevant laws, regulations, and administrative procedures governing energy community operations.
- Community Officer: Facilitates communication and engagement with community members, stakeholders, and relevant authorities.

Recommended Overall Process to Set Up an Energy Community (EC) in the Municipality

- Mapping energy consumption in a defined location.
- Mapping local energy potential.
- Initiating preparations for the construction of new energy sources in the city's vicinity to cover the consumption of the entire defined area.
- Maximizing the use of subsidy programs to build resources and necessary infrastructure.
- Creating a suitable environment and securing capacities for community energy.
- Preparing for the establishment of an energy community in the given locality.
- Ensuring substantial aid and financing for the development of the energy community.

PP4 FORSCHUNG Burgerland - Austria

The choice of organizational form is a central component in the establishment of energy communities (ECs). In addition to a background on possible organizational forms, this abstract focuses on the two organizational forms, association and cooperative, with their respective characteristics.

The structures of an association, community or a cooperation (ECs) are best suited to the idea of citizen participation. Associations have lower financial hurdles when it comes to founding and running costs, members are not personally liable in the event of insolvency, while co-operative members are at least liable for their share.

Cooperatives have more economic leeway, e.g. in terms of financing arrangements, but also more administrative work.Associations appear (generally speaking) to be the legal form of choice for smaller ECs. Cooperatives appear to be well suited for ECs above a certain basic size.

The internal structure of an EC can be discussed and finalized at the general meeting of the EC. It is made up of the members/cooperative members and is the cooperative's supreme body decides annually on the report of the Executive Board for the past financial year on the appropriation of profits and the discharge of the Executive Board (and the Supervisory Board) According to the association actc, to be convened at least every five years - shorter intervals (e.g. annually) can, however, be regulated in the specific statutes (and recommended on the basis of the purpose of the association). One tenth of the members can request the management body / association board to convene an extraordinary general meeting. The management body / board is obliged to provide information on the activities and financial management of the association at the general meeting; auditors must be involved. If at least one tenth of the members request this, stating reasons, the management body must also provide the members concerned with such information within four weeks.

Duties and responsibilities:

Executive Board: Managing body represents the cooperative externally within the scope of its powers as resolved by the General Meeting conducts the business of the cooperative in compliance with legal and statutory requirements and provisions Supervisory Board: controlling body is mandatory for 40 or more employees is composed of at least 3 members monitors the activities of the Executive Board.

Participants general meeting:

Also known as the General Assembly or General Annual Meeting - must be convened regularly, at least every five years, serves to form a common will, consists of all members of the association, each of whom has one vote.

Management body (executive board or presidium) It must consist of at least two people. The management body manages the association's business. So-called organisational representatives are authorised to sign externally.

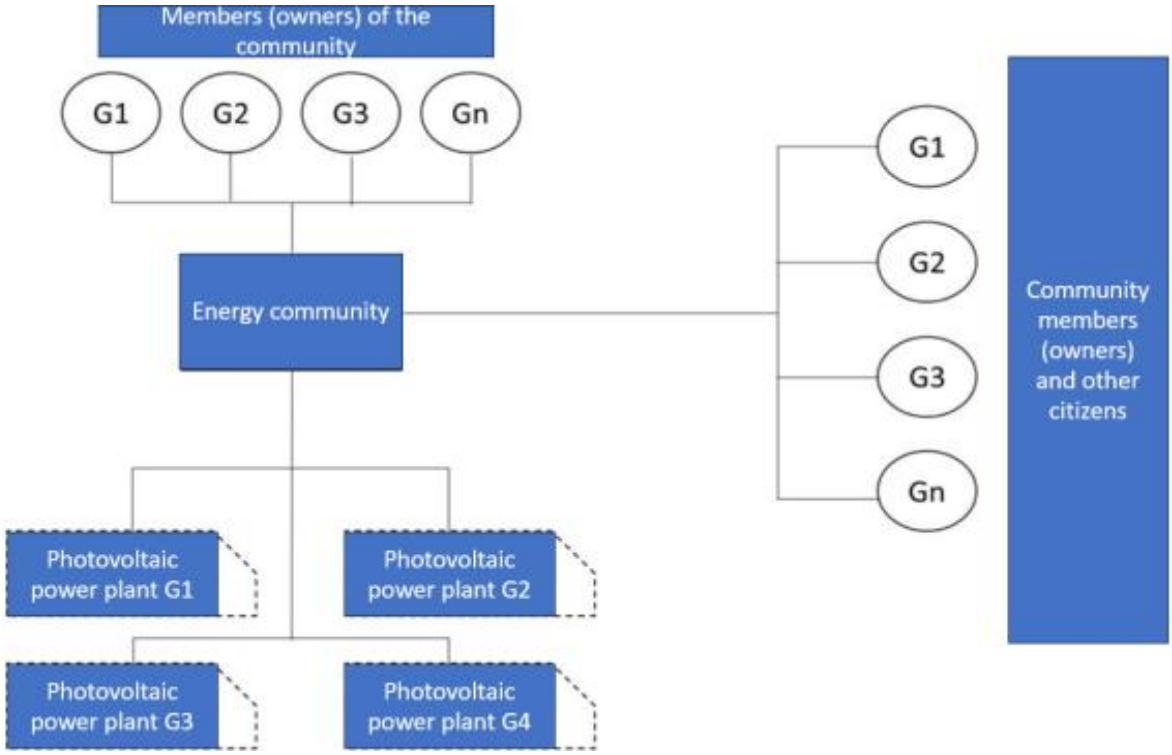
A supervisory body consisting of at least three natural persons can be appointed. The appointment is made by the general meeting.

There also have to be two auditors appointed by the general meeting of an EC as association - maximum term of office timeframe are 5 years.

They have to check the accounts and report to the supervisory body if necessary and they must not be members of the association and must not belong to any body (other than the general meeting) whose activities are the subject of the audit.

PP5 IRENA - Croatia

The general organization of relations between subjects inside and outside the energy community within one substation:



Source: *https://energija.bezgranica.hr/tag/ekonomija/*

Statute is an obligatory document for the EC registration. Separate instituties and other operational regulations are not prescribed.

PP6 KSSENA - Slovenia

The Slovenian legal system provides for final consumers to be connected to the public grid on the basis of a contract based on the rules of the law of obligations or by establishing a legal entity in accordance with Article 43 of ZSROVE.

It is common for this type of energy community to be established by the municipality only with its public institutions, public enterprises, but not with citizens and private companies. There may also be a third party investor if the investor is not the

municipality or a municipal public enterprise.

In particular, if a project also involves a third party that owns or operates an electricity generating plant within the meaning of Article 40 of ZSROVE, final consumers are usually connected to the public grid on the basis of a contract. In such cases, larger cities, where there is also a larger number of production facilities, carry out a public-private partnership (hereinafter: PPP) procedure on the basis of Act No. 25 on Public-Private Partnership (ZJZP) (Official Gazette of the RS, No. 127/06). It is important to note that this is a service concession and not a construction concession, otherwise the investment would become a municipal debt. The service concession is a service for the provision of electricity cost savings and power plant management services, where most of the risks have to be assumed by the private partner, including the risks of achieving savings and the investment risks. Thus, the private partner has to invest more than half (the incentive must therefore be less than 50%) and keep the investment on its books, which it gradually unbundles over the contract period by charging for the energy service of the electricity cost savings contract.

The advantage of community self-supply on the basis of a contract is that it does not create a new legal entity which would require costs for its operation, such as the cost of preparing and filling annual accounts, the fee or other remuneration for the work of the chairman or director (even if there are no employees), the cost of e.g. external accountancy, etc.

If a legal entity is established, the most common form is an energy cooperative on the basis of the Cooperative Act. In the latter case, the municipality can also be a (co)founder and member of the cooperative on the basis of Article 24 of the Electricity Supply Act. The operation of cooperatives has been described in more detail above.

The establishment of a cooperative requires at least three founding members, the deed of foundation and the cooperative rules (Statute) adopted at the first general meeting of the cooperative. A cooperative is formed when the founding members sign and certify the deeds of incorporation before a notary. They then open a business account to which the members pay their compulsory shares.

The articles of association are then filed with the court (commercial register) and the rest of the members are admitted.

A cooperative has a general assembly and a president, as well as a supervisory board or at least one auditor. A cooperative with ten or more members must also have a board of directors. A cooperative whose securities are traded on a regulated market shall have a supervisory board and an audit committee. If the cooperative's articles of association so provide, a cooperative may also have a director and other bodies. The highest body of the cooperative is the general assembly of the members of the cooperative. The general assembly decides on:

- the adoption of the cooperative rules,
- the adoption of the annual report, the use of surplus and the settlement of losses,
- the election and recall of the president of the cooperative, the members of the board of directors and supervisory boards or the examiner and the director, unless the cooperative rules provide that the director of the cooperative is to be elected or recalled by the management board,
- the issue of securities,
- on the conversion and dissolution of the cooperative,
- on other matters provided for in the cooperative rules and on matters not falling within the competence of the other bodies of the cooperative.

The Chairman of the Board of Directors is the ex-officio President of the Cooperative. Natural persons may be elected as president of the cooperative or as members of the administrative and supervisory boards and may be elected as a representative at the general meeting in accordance with this Law. The president of the cooperative shall represent and act for the cooperative and shall be responsible for the legality of its business, unless these powers are delegated to the director.
The Board of directors and Supervisory Board shall meet at meetings convened by the Chairman of the Board on his/her own initiative, at the request of any other board member or at the request of the Director. Each member of the Board of directors or Supervisory Board shall have one vote in the decision-making process.

The Supervisory Board monitors the overall work and performance of the President, the Board of Directors, the Director and the employees with special powers and responsibilities, and ensures that the annual report is submitted to the General Assembly on time.

No person may be elected to the Supervisory Board who is the President of the Cooperative, a member of the Board of Directors, a Director of the Cooperative or another employee with special powers.

In the operation of a cooperative, the production-sharing key, which gives members the right to receive a share of production, is also the basis for determining members' obligations to the cooperative. When the cooperative takes out a loan to make an investment, and when the cooperative receives a request from the bank for payment of the annuity, it pre-invoices the members according to the production-sharing key, and does the same for other operating, maintenance, insurance, etc. costs.

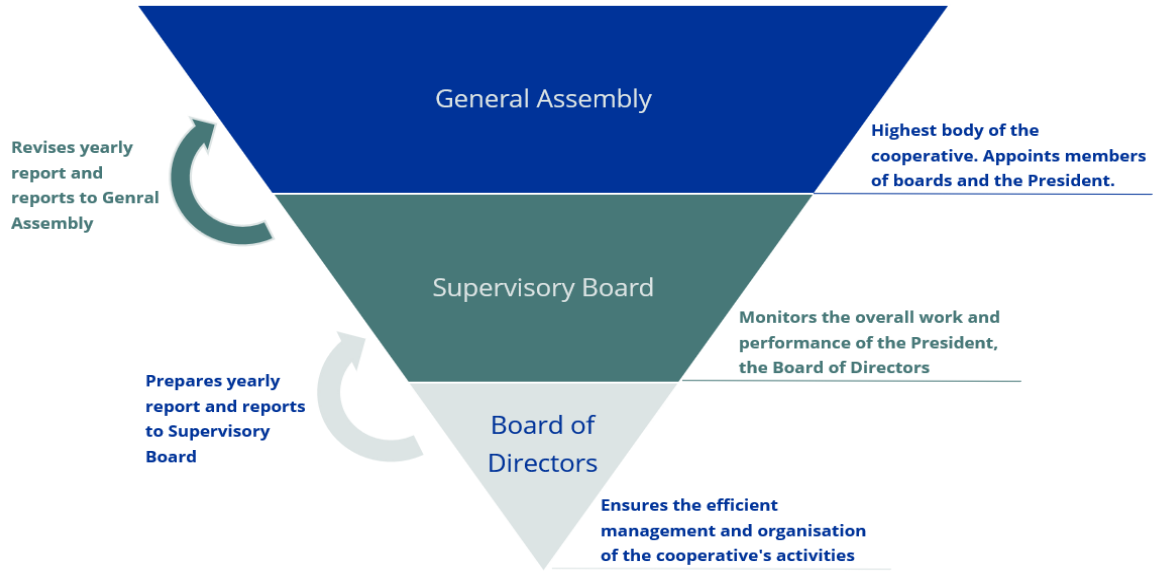


Figure 2: Cooperative internal management

The members of the cooperative may therefore have different levels of compulsory and voluntary contributions and, consequently, different numbers of votes in the General Assembly, which is made up of all the members of the cooperative and must meet at least once a year. The General Assembly elects the Board of Directors and the President, who is in charge of the Cooperative.

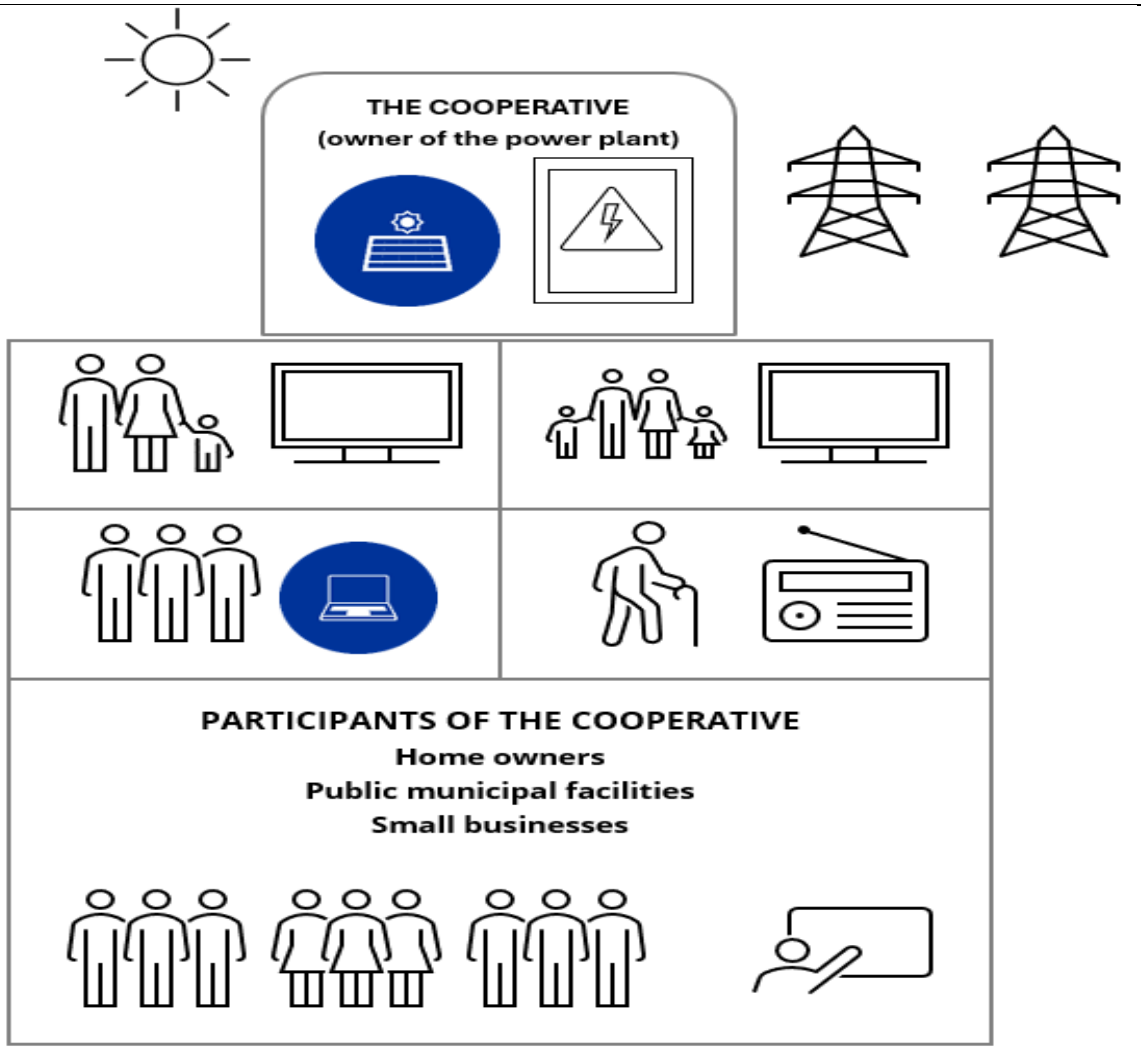


Figure 3: Solar cooperative model

Taken from: Primeri dobrih praks za energetsko skupnost, ki je pravna oseba, Goriška lokalna energetska agencija – GOLEA, December 2023

PP8 REDASP - Serbia

Based on the experiences of the European Union and Great Britain through the organization of workshops and education, the foundations of the model of the organization of Energy Communities are formed. The Law on the Use of RES, as well as the Law on Energy, define the framework for the functioning of all market participants.

PP9 OER - Romania

Greenpeace Romania proposes a series of techno-economic templates for energy communities in Romania. For example: An energy community in a block of flats in a big city; an Energy community in a new residential neighbourhood; an Energy community in a village; Energy community in a small town. Strating page 68

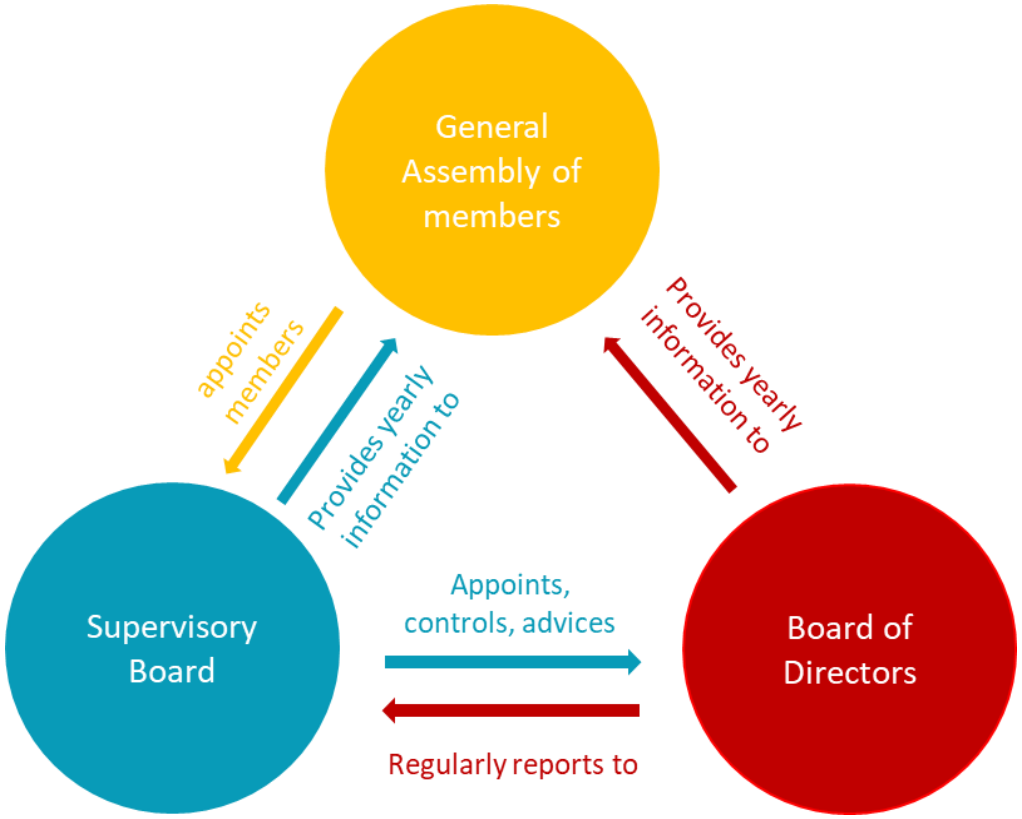
https://www.greenpeace.org/static/planet4-romania-stateless/2024/03/21d2dcb5-comunitatile-de-energie-in-romania-de-la-aspiratie-la-realitate.pdf

These templates were inspired by actual examples of EC initiatives/ projects.

The analysed initiatives/ projects are not yet legally registered entities/ EC but are at an advanced stage of development on the road to becoming an energy community.

PP11 DIT - Germany

Internal management model of energy cooperatives



The general rule for the internal structure of cooperative societies is the Dualist Model: Board of Directors and Supervisory Council plus general assembly or in large cooperatives: meeting of delegates (§ 43a (1) - (7) GenG). The meeting of delegates was introduced in 1973 to allow large cooperative societies (having more than 1,500 members) to hold their meeting of members despite the rule prohibiting voting by proxy (Beuthien 2018, GenG, § 43a RZ 1).

The general assembly of members or meeting of delegates is the supreme authority in the cooperative society. Delegates are not the agents of those who elected them but have a position in their own right (§ 43a (4) - (6) GenG). Even if a meeting of delegates is stipulated, some basic rights of the general meeting of members remain guaranteed, e. g. to vote on removing the meeting of delegates (Beuthien 2018, GenG, § 43a RZ 2), for which, since 1973, there are very detailed regulations (§ 43a (1) - (7) GenG).

The general assembly of members / meeting of delegates decides all important matters concerning the working and existence of the cooperative society: amendment of by-laws (§ 16 (1) GenG), election of members of the supervisory committee (§ 36 (1) GenG), decisions on annual return and allocation of annual surplus (§ 48 (1) GenG), merger (§ 13, (1) UmwG); conversion (§ 193 (1) UmwG) and dissolution (§ 78 (1) GenG).

The General Assembly of Members appoint the Supervisory Board of the cooperative. The analysis of statutes shows that it is the Supervisory Board who appoints the Boardof Directors in 465 out of 570cases (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.

According to § 9 (2) GenG, Members of the Board of Directors and of the Supervisory Council shall be members of the cooperative and natural persons. Should legal persons or business partnerships have joined a cooperative society, persons

authorised to represent them shall also qualify for membership at the Board of Directors or the Supervisory Council.

In 2006, special rules for small cooperatives with up to 20 members introduced the Monistic Model: Small cooperatives can opt for a simplified structure, working only with a board of directors, even as a one-person board and without a supervisory council (§ 9 (1) GenG).

The layered governance structure may not exist in, or may not be suitable for civil partnerships (small energy communities). This entails that members are liable with their own assets and decisions must be taken unanimously. In this way, they at least formally safeguard broad-based active participation, while cooperatives only guarantee active participation in the distribution of benefits and the choice of management bodies or supervisory bodies.

Cooperatives in Germany have to become members of an association of cooperatives or another recognized body, which audits the cooperative, provides model statutes,and gives advice on legal and accounting matters. The analysis shows that the overwhelming majority adopts the model statute to a great extent. A large number of cooperatives only deviate from residence requirements, notice periods for cancellations, decision-making powers with respect to the acquisition of land, and the power to dismiss the Board of Directors. Other deviations only occur in less than 5 % of the examined statutes.

PP12 NEK - Slovakia

In several EU countries, it is possible to identify good results in the field of community energy, which in Slovakia we consider to be models and examples of good practice in this area. For example in the Netherlands, where the distributor Energie Vanons in the city of Groningen buys electricity from 100 energy communities and returns a share of the profit to the communities, or the case of a community biomass boiler in France, which is the result of a partnership between local associations, the private sector and the municipality.

As we mentioned in the previous article, ECs in Slovakia are still only at the initial stage of their development.

It is also undoubtedly true that, just as it was in the case of the developed EU states, after the creation and launch of the first ECs or EKs, their formation and change will take place even after the start of activities.

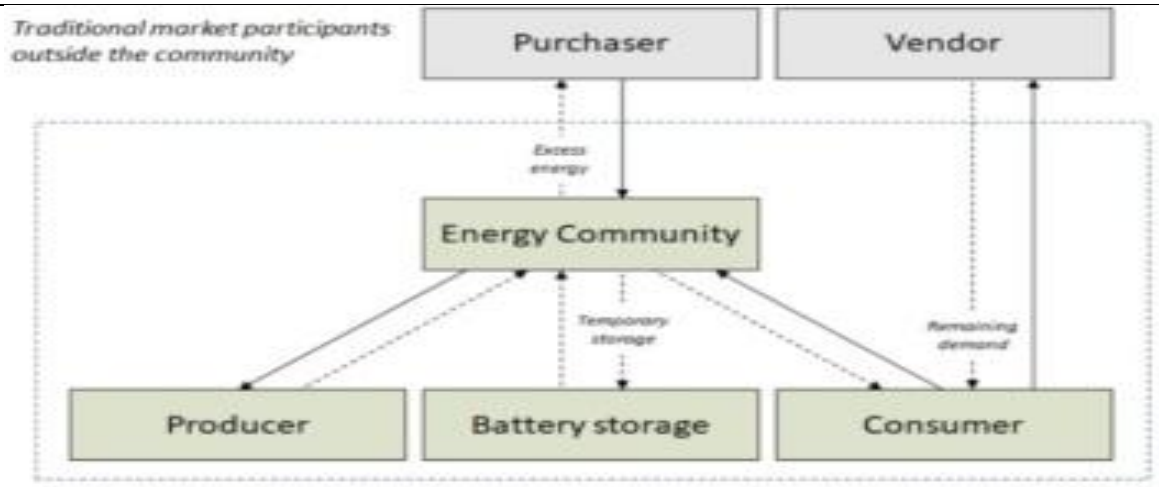
The legislation itself always only creates marginal conditions for possible new activities, but the specific procedures for the creation, creation of functioning models, or the management scheme or organizational structure of the EC itself must be set by the participants of these processes themselves.

It is highly probable that the first internal models of management and distribution of tasks and functions within the EC are ensured, and the biggest initiative in creating a community is usually taken by such a more experienced individual, collective, or in the case of members of legal entities, such representatives of groups who in the future and after the elections to management bodies will be individually entrusted with the first difficult tasks and will create their own EC management.

From a technical point of view, such EC management often faces the first basic question: how will it be possible to store unused energy, or pass it on to customers outside the community? It is also necessary to find a fair and collectively acceptable own system and a solution for, for example, the case that if a participant has a higher energy consumption, can he also purchase energy from another supplier?

Even in this case, it is therefore true that there is no need to look for often unnecessary and complicated new or custom schemes at all costs, but rather to proceed as simply as possible, because "time is money". In practice, this can also be achieved by studying the environment and functional solutions, or, for example, by adopting already publicly known best practices in the past or in another similar environment.

Since at the moment it is definitely not possible to talk about any typical Slovak model, nor a solution for functioning, or management of the EC in Slovakia, for a joint discussion with our partners of the NRGCOM project, we present one very simple, but nevertheless possible dynamic of the energy community in the context of the electricity market, illustrating an image:



Source: S. Cejka & K. Kitzmüller, Rechtsfragen zur Gründung und Utsetzung von Energiegemeinschaften, Internationale Energiewirtschaftstagung TU Wien (2021), p. 2.

(https://www.energie-portal.sk/Dokument/komunitna-energetika-alebo-krok-k-ciastocnej-decentralizacii-trhu-s-elektrinou-pravny-pohlad-110092.aspx)

We do not forget that, despite many characteristic features and common denominators, the development of community energy in EU countries is largely shaped by their specific legal, economic and social context.

In addition to environmental and social benefits, community energy has the potential, under certain conditions, to significantly contribute to the economic recovery of regions. This point of view should be adopted, even if realistically, not by all, but at least by the majority of EC participants.

Therefore, an immodest goal should also apply when choosing suitable management personalities, that the motivation of every good EC management (as a whole) cannot always be only potential savings or the possible possibility of drawing financial support. For future success, in the conditions of the Slovak energy market, we expect cooperation and the ability to act from central institutions.

A condition for the success of community energy in practice will be the achievement of symbiosis and an adequately functional partnership between the state administration, local government, civil society and, last but not least, the private sector.

The picture schematically shows a simple working model of the implementation and management of RES in the conditions of a model industrial company from the segment of Slovak SMEs within the EC being built to address the introduction of specific RES proposals into its energy economy. The diagram shows the company as a system (containing the activities of management, personnel and production processes) into which energy E enters, which is a combination of renewable energy sources with conventional energy sources (KZE) according to the company's energy mix created in this way. System links in the scheme: 1, 2, 3, 4, show the process of implementing interventions for the introduction of RES, and link 5 is feedback from products and services and their impact on other information and EC management.

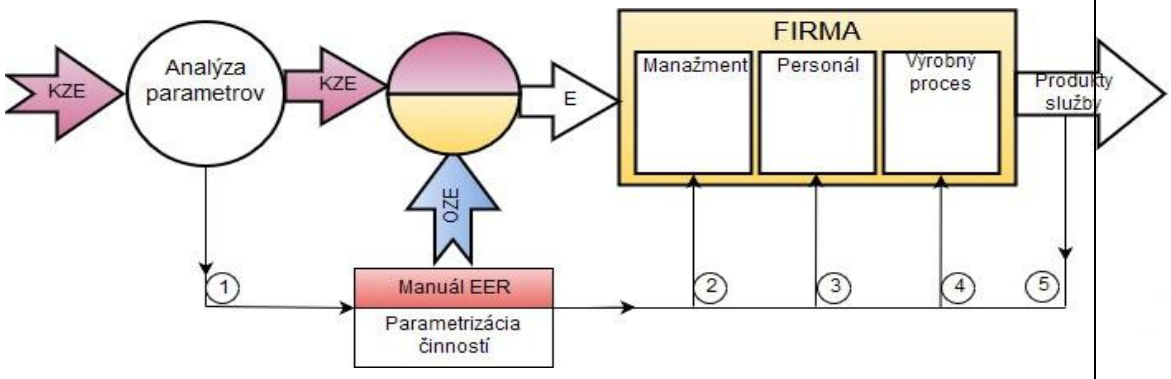


Image: Model of RES implementation in an industrial company within the EC

Circuits/Specifications:	Example/Utility Brief:
9. How can you describe the internal business models (diagram or picture) in the functioning of EK at your place in the framework of communication and energy trading with consumers and customers within the given community in the region or relevant area of operation of EK?	Introduce a exemplary model model of business communication and processing of customer requests in EC and subsequently energy supply with an emphasis mainly on the RES base, but also other energy sources in the given area. State how, in your opinion, EL maps and monitors the needs and expectations of community members and its customers/subscribers in the given area? Give an example of how EK corrects its energy supplies depending on changes in consumption by customers?

PP2 IMRO-DDKK, STRIA – Hungary

Pannon Energy community: It is too early to give an answer, as they are currently working out the internal business models now. In terms of communication, they plan both in-person and on-line solutions to interact with their members.

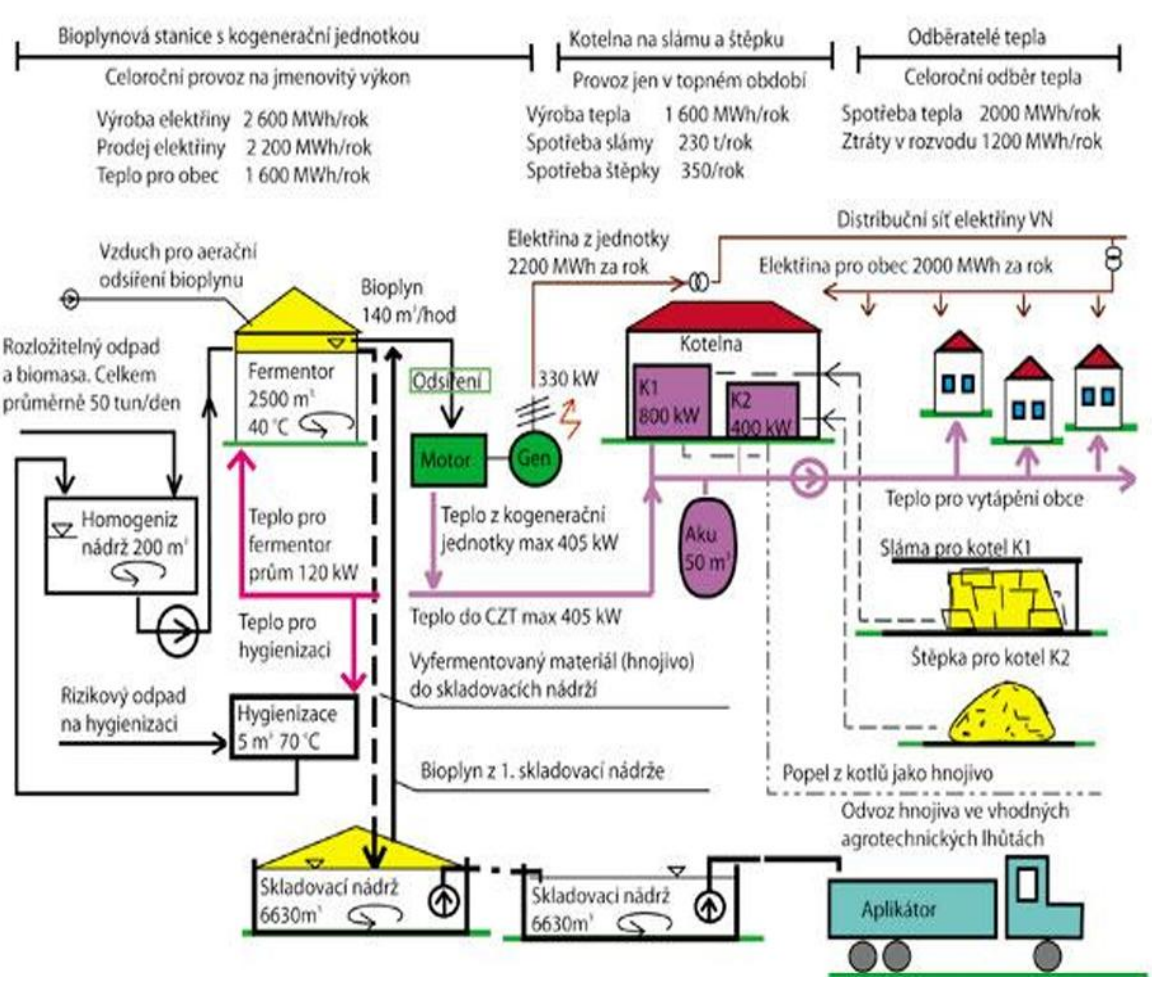
Bábolna energy community: currently there are only two members in the energy community (the municipality and a large power consumer company). Once the energy management and reporting software will be in place (during the autumn of 2024) they plan to extend membership. With them the main means of communication will be e-mail. There will be also a technical team, which will keep in touch with the technicians of the larger power consumers. So the main day-to-day communication will be carried out by the technicians. Strategic decisions will be taken in the annual members' assembly meetings.

KESZ energy community: Currently only the founding members (project partners) are members in the energy community. However, as they expand, these partners will maintain relations with energy community members: they will operate a customer service and will handle complaints. There will be continuous non-stop customer service, and guarantee-on-service. At external partners the contact person will be the technical manager of the given building, on KESZ side there is one dedicated person for partner relations. She keeps frequent (exemplary!) contact with partners: in addition to the annual members' assembly meetings, she calls each partner at least 2-3x per year. With this they want to show example. (As KESZ was established by NGOs, its main mission is giving example, experimenting and awareness raising.)

PP3 JAIP –Czech Republic

In the Czech Republic, approximately 160 municipalities and cities are actively involved in supporting and implementing various systems for electricity or heat production. Among these, rooftop photovoltaic power plants and biomass heaters are the most prevalent. However, municipalities also operate water, biogas, or wind power plants, contributing to the diverse energy mix. Collectively, their installed capacity amounts to 24 MWe (electricity) and 116 MWt (heat).

The Czech municipality of Kněžice stands out as a notable example of an energy self-sufficient village, demonstrating innovative practices in renewable energy production and waste management. Through the operation of a biomass heating plant and a biogas station utilizing various biological waste sources, Kněžice efficiently provides heat for the majority of its houses while also addressing environmental concerns associated with waste disposal. Moreover, the municipality has established a municipal distribution network integrated with smart grid elements, facilitating the effective delivery of locally produced electricity.



PP4 FORSCHUNG Burgerland - Austria

The communication and energy trading within energy communities are facilitated through the "Energy Data Exchange" (EDA) platform. The EDA's user portal serves as a web platform for processing tasks for energy service providers and energy communities, providing easy access to energy data exchange. It offers an integrated process environment for direct messaging, receipt, and processing. Participation in the user portal is free for energy service providers and energy communities.

Data Exchange Options:

- User portal (including process environment for messaging and processing)
- Email integration (requires own software application for messaging and processing)
- Communication endpoint (requires own IT landscape and software application for messaging and processing)
- The user portal was specifically developed for energy communities to securely transmit data and provide all relevant information regarding data exchange and security. The portal visualizes messages sent by network operators and prepares them for further use.

Data Types:

- Grid consumption: Electricity consumption from the public grid
- Grid feed-in: Feed-in of self-generated electricity into the public grid
- Consumption: Self-consumption of generated electricity
- Generation: Production of electricity from renewable sources within the energy community
- Surplus electricity: Unconsumed electricity sold to the grid.

Key Communication Stakeholders:

- Municipalities
- Grid operators

- Energy supply companies (EVUs)
- Members of the energy community.

To correct its energy supplies depending on changes in consumption, Energy communities can adjust their energy supply by modifying the participation factor or changing membership status. The participation factor indicates the percentage of your consumption or generation that you contribute to an energy community. It determines the maximum percentage of your generated electricity that you can feed into the energy community or the maximum percentage of your electricity consumption covered by the energy community. Participating in multiple energy communities allows you to increase the share of surplus electricity sold to or purchased from the energy communities.
Adjusting the participation factor within an energy community can help limit high consumption, making dynamic allocation more attractive.

Participating in multiple energy communities allows members to better manage their electricity supply and promote the use of renewable energy. Multiple participation in energy communities has been possible in Austria since April 2024.

PP5 IRENA - Croatia

The purchase of the power plant will most likely be financed from own sources (contribution of community members, so-called equity, founding stake) and from debt obtained from, most often, commercial banks. Of course, the ratio of own and other debt sources will depend on the overall risks of the project.

As far as possible, the energy community, as a legal entity established by the role of its members, invests in photovoltaic power plants on the property of its members. The legal entity of the energy community, in addition to the founding roles of its members, also acquires debt sources of financing in order to settle the capital value of the investment. The legal basis of the investment can be, for example, an agreement on the lease of the members' property.

The legal entity of the energy community will compensate the acquired right to invest in other people's property with compensation (rent) to the property owners (members - but the question immediately arises whether the legal entity of the energy community could enter into property lease agreements with other citizens who are not members of the energy community). From the price of energy sold to its members, the legal entity of the energy community will settle the debt sources of financing and reduce its income and expenditure account to zero (0), since it keeps business books according to the rules for non-profit organizations. Within option b), the members of the energy community obtain their own sources of financing (their own and others - debt) in order to invest in a photovoltaic power plant on their property. Also, for the purpose of sharing surplus energy, they will conclude an agreement with the legal entity of the energy community in which they will precisely define the rules of energy sharing.

In order to encourage citizens to invest in photovoltaic power plants within the framework of energy communities, it is also worth opening the issue of easier use of financial instruments in order to make commercial sources more available, and to minimize own sources. Financial instruments of the multi-year financial framework in the period from 2021 to 2027 could be significantly used there. Namely, Regulation (EU) 2021/1060 significantly eases the programming, design and application of financial instruments. The wide spectrum of possible financial instruments points to the conclusion that precisely for the needs of financing energy communities, instruments could be created that would contribute to speeding up the implementation of such projects.

PP6 KSENA - Slovenia

Community projects usually have a bottom-up approach, meaning that there is a strong interest in the project within the local community, where people know each other. The problem of tackling high electricity prices through community self-supply is crucial for municipalities and their public institutions, such as schools, kindergartens, but also for the public utility companies that run water treatment plants, pumping stations, etc. It is the combination of schools, where electricity production is high and consumption low in the summer, during the annual school holidays, that is ideally linked to water pumping stations, water treatment plants, where energy consumption is highest in the summer.

Projects become much more interesting when citizens, as well as sole traders and small businesses in a given area, are involved in a community self-supply project the simplest form of legal entity is usually a cooperative, which operates in a similar way to an association, where members are linked together, know each other and share a common interest in energy self-supply. It is therefore common for cooperatives to be set up in rural areas, where members are more connected to each other and can address other local issues through the cooperative.

In the case of smaller communities and 100% self-supply, i.e. all energy produced is consumed by the members themselves, an energy community can be established on the basis of a contract that regulates mutual relations and sets the key for sharing energy production. Otherwise, the most common option is to set up a cooperative.

As mentioned above, municipalities have a key role to play here, as they can also offer their own facilities for the needs of the community, such as community centres, village or cultural centres, branch schools, etc., where energy consumption is usually low. Installing solar power plants on such facilities generates a surplus that can be offered to the surrounding community. This

was also the most common form of energy community under the old Energy Act with the possibility of netting on an annual basis.

If the municipality is the operator of such a community, the community usually has a higher level of trust also towards third parties. For example, a cooperative of which the municipality is also an important member with its institutions, etc., has a much easier access to commercial banks to obtain loans for ivestments. The municipal administration also carries out or takes over some of the necessary administrative work, especially if the president of the cooperative comes rom the municipality.

Usually, communities, cooperatives, etc. are formed in times of crisis, when people start to associate with each other and pursue their goals through the community. It is crucial that the community project is led by a person who is trusted by his or her fellow citizens; the support of the mayor, the municipal administration and the municipal council for the community project is also crucial. More recently, energy communities have been emerging, mainly as a response to the energy crisis caused by climate change, the rise in the price of emission allowances and, above all, the war in Ukraine, which has made self-sufficiency, especially in the energy sector, very important again.

In practice, therefore, cooperatives are still the most common form of legal entity for energy communities, involving municipalities with their facilities and citizens. Especially in the case of larger renewable energy projects, there are cases where a project company is established under the Zakon o gospodarskih družbah - ZGD-1. In these cases, a cooperative formed by the municipality together with the citizens of a certain area can be a shareholder of such a company, and the shareholders are also the investors for the purpose of implementing the project.

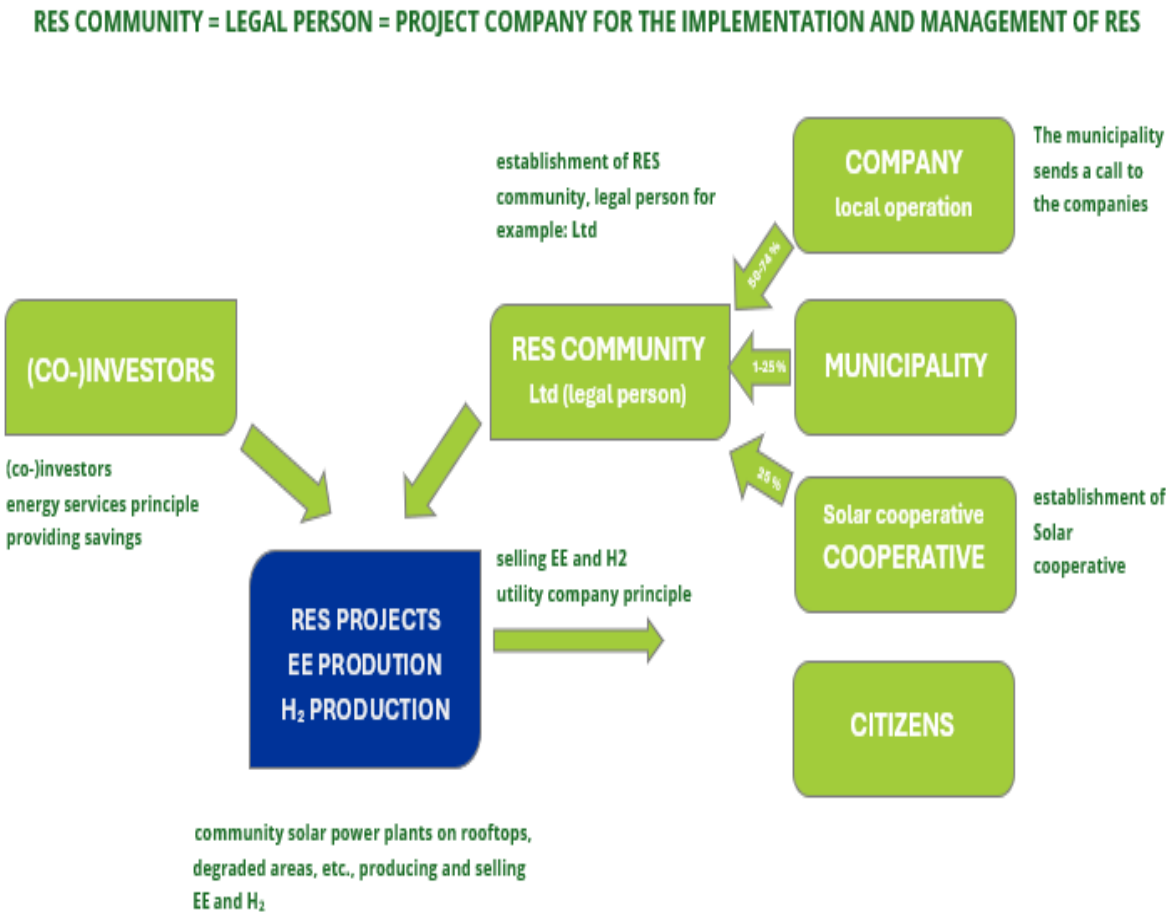


Figure 4:Example of the establishment of a project company, a RES community, in which the cooperative is a shareholder

Taken from: Primeri dobrih praks za energetsko skupnost, ki je pravna oseba, Goriška lokalna energetska agencija – GOLEA, December 2023

The possibility for energy communities or cooperatives to participate in the electricity market is provided for in Article 24 of the ZOEE, which provides, inter alia, that energy communities may act directly on the electricity market. Article 23 of the ZOEE provides that final customers with community self-supply shall have the right to act as active customers without being subject to disproportionate or discriminatory entry requirements, procedures and payments, as well as to non-cost-reflective network

charges.

Active customers shall have the right to operate on the market directly or through aggregation, the right to sell electricity from their own generation, including under power purchase agreements, and the right to participate in flexibility and energy efficiency programmes. In order to operate directly on the electricity markets, i.e. to sell to other system users or to purchase from other system users under an open contract and to enter into closed contracts, active customers shall be required to join a balancing system, except in the case of exchanges between active customers belonging to the same member of the balancing system and in the case of an open contract with a supplier.

Active customers may delegate to a third party the management of the facilities they need to operate as active customers, including installation, operation, data processing and maintenance, whereby the third party shall not be considered as an active customer (Article 23). Article 23 further provides that where active customers own energy storage, they shall have the right to be connected to the system within a reasonable time after request, provided that all necessary conditions, such as balancing responsibility and adequate metering, are met and that they are not subject to disproportionate licensing or tariff requirements.

In this respect, they shall not be charged network charges and other costs for the energy delivered and previously stored on their premises. Active customers may therefore provide several services simultaneously, if technically feasible). In doing so, distribution system operators shall, in cooperation with energy communities, ensure that billing transfers of electricity within these communities are facilitated. The remuneration for this service shall be determined by the Agency in the same manner and according to the same procedure as for the remuneration of other services provided by electricity undertakings (Article 24 of the ZOEE).

Energy communities shall be subject to non-discriminatory, fair, proportionate and transparent procedures and payment of network charges and access to the organised electricity market as laid down in the statutes and general acts. The way in which the network charge is determined for the members of the energy community shall be prescribed by the Agency by means of a general act in such a way as to ensure that they make a sufficient and equitable contribution to the sharing of the common costs of the system (Article 24).

The members of an energy community shall, in accordance with the provisions of the ZOEE, organise within the energy community the sharing of the electricity produced by the generating installations owned by the community, provided that the rights and obligations of the members of the energy community in their capacity as final customers are respected, without prejudice to the network charges, tariffs and levies applicable thereunder. In order to determine the network charge in the case of energy sharing, the Agency shall carry out a transparent cost-benefit analysis of the distributed energy resources. Thus, in accordance with the provisions of the ZOEE, suppliers must conclude an open-ended contract for the supply and purchase of electricity and for community self-supply with end users with community self-supply under the ZSROVE.

PP8 REDASP - Serbia

When it comes to Renewable Energy Sources in Serbia, Energy Communities are currently mainly formed with the aim of producing Electricity, in order to achieve savings, improve Energy Efficiency and reduce CO2 emissions.

Bearing in mind that in Serbia there are certain restrictions on access to the distribution network and that the EPS is the exclusive competence of giving consent and approval for connection, the approximation of the model of organization modeled on the EU countries is still under development.

PP9 OER - Romania

Currently, we do not possess any relevant information on this fact.

PP11 DIT – Germany

Comprehensive Business Model for Enhanced Energy Community Operations

The energy community xxx aims to optimize operations and improve customer satisfaction through the implementation of a comprehensive business model. This model integrates various features to streamline communication, handle customer requests efficiently, monitor community needs, and dynamically adjust energy supply.

Key Features:

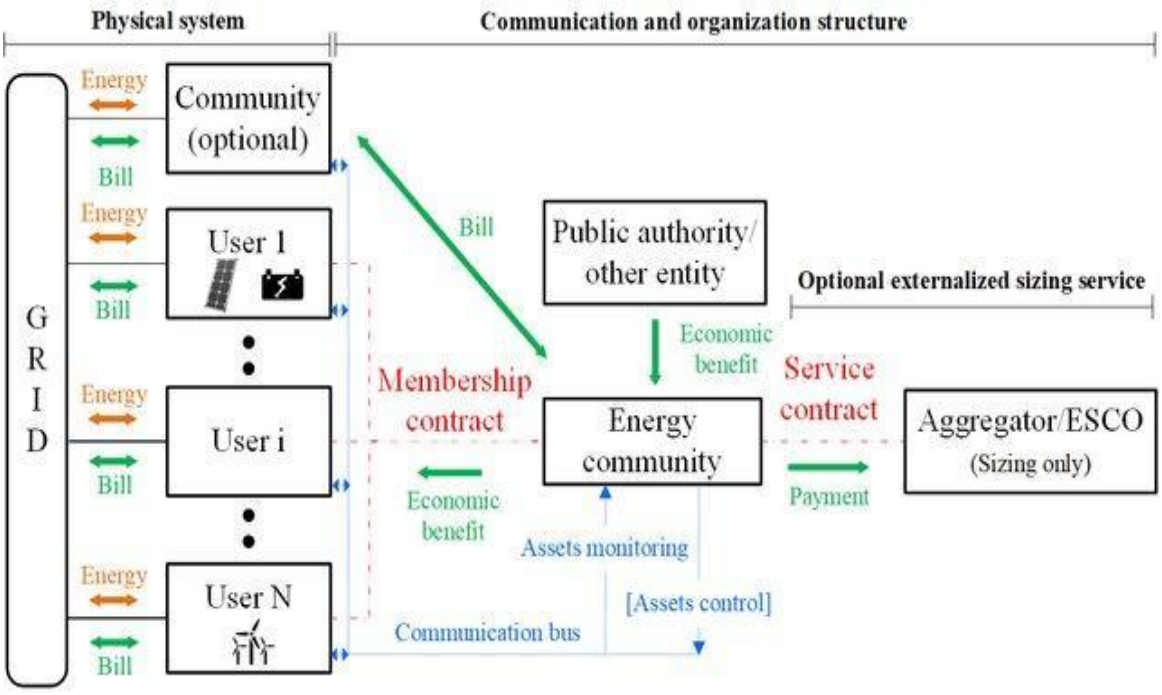
- ***Integrated Communication Channels:*** Implementation of diverse communication channels including online portals, mobile apps, phone lines, and in-person interactions to ensure seamless interaction with customers.
- ***Centralized Request Handling System:*** Development of a centralized system for categorizing, prioritizing, and routing customer requests, integrated with CRM tools for efficient tracking and resolution.
- ***Real-time Integration with Energy Systems:*** Integration with energy management systems for real-time monitoring of consumption, generation, and distribution, enabling prompt responses to service disruptions.
- ***Automation and Data Analytics:*** Implementation of automation tools to streamline processes and workflows, coupled with data analytics capabilities for insights into consumption patterns and community preferences.
- ***Community Needs Mapping and Monitoring:*** Deployment of data gathering mechanisms such as surveys, feedback forms, and engagement platforms to map and monitor community needs effectively, leveraging predictive modeling for demand forecasting.
- ***Dynamic Energy Supply Correction:*** Real-time monitoring of consumption to facilitate dynamic adjustments in energy supply. Implementation of demand response programs, flexible energy procurement, and dynamic pricing mechanisms to ensure alignment with changing demand patterns.
- ***Proactive Communication and Education:*** Launching proactive communication and education campaigns to inform customers about supply conditions and encourage energy management practices, enhancing customer engagement and satisfaction.
- ***Regulatory Compliance and Reporting:*** Ensuring compliance with regulatory requirements related to customer service and data privacy, with transparent reporting mechanisms to foster trust and accountability among stakeholders.
-

The comprehensive business model proposed will empower our energy community to deliver reliable energy supply, enhance customer satisfaction, and drive operational efficiency.

Business model canvas

CUSTOMER	VALUE PROPOSITION	CHANNELS
Residential customers Small and medium-sized businesses Community organizations	Seamless communication channels Efficient request handling system Real-time monitoring of energy supply and demand Proactive community engagement Dynamic energy supply adjustment	Online portals Mobile apps Phone lines In-person interactions
CUSTOMER RELATIONS	**REVENUE STREAMS**	**COST STRUCTURE**
Personalized communication Community engagement platforms Proactive education and support	Subscription fees Service charges Energy usage fees	Technology development and maintenance Personnel costs Marketing and outreach expenses Regulatory compliance costs
KEY ACTIVITIES	**KEY RESOURCES**	**KEY PARTNERSHIPS**
Developing and maintaining communication channels Implementing request handling system Integrating with energy management systems Conducting community outreach and engagement Monitoring energy supply and demand	Technology infrastructure CRM tools Energy management systems Data analytics capabilities Personnel for customer support and community outreach	Energy suppliers Technology providers Regulatory bodies Community organizations

Communication model of energy communities



Sourse:https://www.researchgate.net/publication/352903058_Optimal_sizing_of_energy_communities_with_fair_revenue_sharing_and_exit_clauses_Value_role_and_business_model_of_aggregators_and_users/figures?lo=1

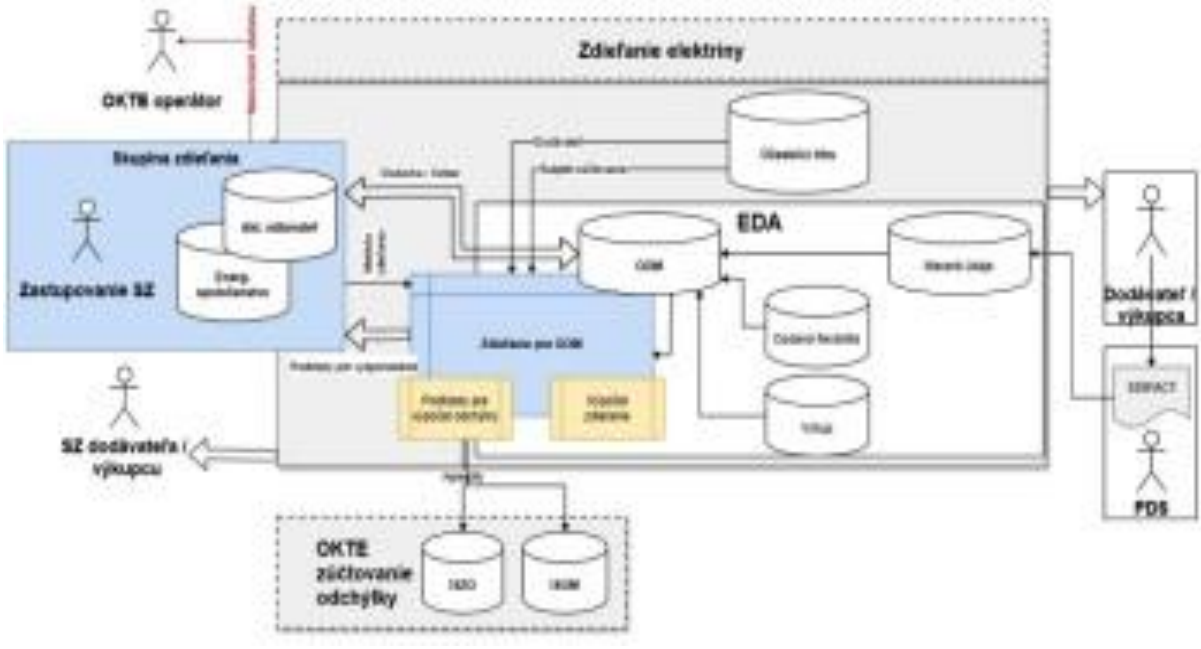
PP12 NEK - Slovakia

The whole field of Slovak energy industry is facing a gradual transformation. Based on the requirements of the European legislation, there is a gradual development and interconnection of energy markets as well as regulatory services. At the same time, new technologies and requirements are coming.

Domestic operators of transmission and distribution systems must also respond adequately to this situation. Fortunately, SEPS sees the future of the transmission system in the decentralization of resources from a few large to several smaller providers as part of the mentioned changes. It also assumes a change in consumer behavior with the aim of higher energy cost savings. It is the demands for savings that will bring about the efforts of consumers to produce their own electricity, which in the framework of the expected development of the EC will result in the introduction of new technologies into the electrification system.

Flexibility aggregators are a solution to reduce consumers' costs for electricity and, at the same time, their carbon footprint. They can optimize and manage the operation of flexible devices of both consumers and manufacturers in real time. The task of the aggregator will be to aggregate non-necessary electricity from consumers and smaller providers and then provide it to the transmission system. As an example, we can cite municipal heating plants, which, while producing heat, also produce electricity, which is a tremendous opportunity for the establishment of the relevant EC, also with the participation of the local government.

According to SEPS, the flexibility aggregator adjusts the operation of this heating plant based on its instructions in order to regulate the electrical system, i.e., for example, it increases the output of the heating plant in the event of a lack of electricity in the system. Of course, this view of the state company may not always be compatible with the specific conditions that the relevant EC would define and enforce. We will show how the sharing of electricity through the OKTE Energy Data Center works in the following Picture.



Source: Presentation by R. Gaň at the eFocus conference, 2023

SEPS ran into a problem when changing the legislation: Can a consumer or a small producer of electricity play a role in the management of the electricity system at the same time as both a consumer and a source of electricity?

The pilot project "PIAF" (Pilot Aggregation Flexibility for Support Services) gave her the answer to this question, which was successfully completed with the publication of the Final Report on the status of the PIAF project.

The goal of the project, which ran from January 2022 to October 2023, was to propose an amendment to the legislative conditions within the market for the involvement of decentralized sources of flexibility and the functioning of flexibility aggregators for the development and use of flexibility aggregation options on the market with support services from the point of view of their application within the dispatch management of the electricity system of the Slovak Republic in accordance with the requirements arising from EU legislation. The project was based on the rules applied for the virtual block, which are listed in the Operating Rules and Technical Conditions of SEPS.

As part of the project, several meetings were also held with the representatives of the deviation accountant (OKTE), where the main goal was to clarify the necessary range of data that is necessary for a correct evaluation of the activated flexibility.

The project brought valuable results and opened up important topics and questions for launching the aggregation of flexibility for the provision of support services. SEPS believes that the volume of flexibility aggregation services will continue to grow faster and faster, which will certainly be helped by the launch of EDC by OKTE, which as of October 2, 2023, also enables independent aggregation. This allows flexibility to be used even on devices or technologies where the aggregator is not directly a supplier or buyer of electricity and through which even smaller companies will be able to offer support services, or established EC or EC operating within the given community.

Circuits/Specifications:	**Example/Utility Brief**
10. Indicate what basic theoretical information databases are objectively devoted to EC support and development in your country?	Write possible databases for international monitoring and comparison of current data on EC in your country. Submit an overall overview of currently known and registered ECs in your country (names, place of operation and possibly also estimated importance/position) on the relevant energy market

	in your country.

PP2 IMRO-DDKK, STRIA - Hungary

1. There is an information portal to support renewable energy communities: https://tudaster.kozenergia.hu/ This is a comprehensive information portal, developed by a coalition of NGOs, as part of the European funded SHAREs project. It gives practical advice for launching energy communities, good practices, news, FAQs, legal advice and documents, tools, European projects etc.

2. This is the official register of the currently registered energy communities: https://mekh.hu/villamosenergia-ipari-engedelyesek-listaja

   Currently there are three registered energy communities in this list:

Name of company	Seat	Decision Issue Date	Details
Bábolna Energiaközösség Nonprofit Kft.	Bábolna	2023.10.03	The country's first operating energy community, founded by a municipality. Article YouTube video
KESZ Közösségi Energia Szolgáltató Nonprofit Kft.	Budapest	2023.10.05	Founded by a coalition of NGOs, with the aim to showcase and promote ECs.
Pannon Energiaközösség Nonprofit Kft.	**Pécs**	**2024.03.04**	**Founded by the Universitas Quinqueecclesiensis Foundation of the University of Pécs.**
Első Magyar Innovatív Energiaközösség Nonprofit Kft.	**Seregélyes**	**2024.03.26**	

3. This is the home page of the first energy community of the country, KESZ: https://kesz.kozenergia.hu/

This web page gives an overview about energy communities and their support activities: membership conditions, incubation suppport for new ECs, consulting services, direct personal assistance.

PP3 JAIP –Czech Republic

The Ministry of the Environment (MŽP) in the Czech Republic has initiated a call for the Establishment of Energy Communities to support pilot projects in the country. The call, which closed on January 31, 2024, received applications from 83 registered energy communities. The MŽP plans to support at least 40 of these communities with a total allocation of 98 million crowns. This initiative, following the adoption of the lex OZE II amendment, signifies a crucial step forward for community energy development in the Czech Republic.

Souce: https://www.mzp.cz/cz/news_20240205_Obce-i-sdruzeni-maji-o%20komunitni-energetiku-enormni-zajem-do-vyzvy-se-prihlasilo-pres-80-zajemcu

The NOHO project focuses on the development of a former tannery into a carbon-neutral district, integrating features such as substations, batteries, and photovoltaic panels (FVE) to promote sustainable energy practices. Additionally, the project emphasizes energy management within buildings and motivates customers to save energy and adopt consumption flexibility. Moreover, the NOHO project aims to foster community building within the district.

VENUS, or the Vision of an energy-efficient region, is a civic initiative involving municipalities, residents, and companies to promote energy efficiency. With the establishment of Energy Communities (ENERKOms) by almost 200 Municipalities with Extended Powers (MAS) throughout the Czech Republic, VENUS aims to implement hundreds of megawatts of renewable

energy sources (MWpOZE) and invest in energy savings. The initiative also focuses on energy management and has conducted local experiments in Mikolajice, Litultovice, and Budišov nad Budišovka.

Základní škola
Kondenzační kogenerační jednotka
20 kWe a 48 kWt
Plynové kondenzační kotle 2 x 85 kWt
Dobíjecí stanice 22 kW

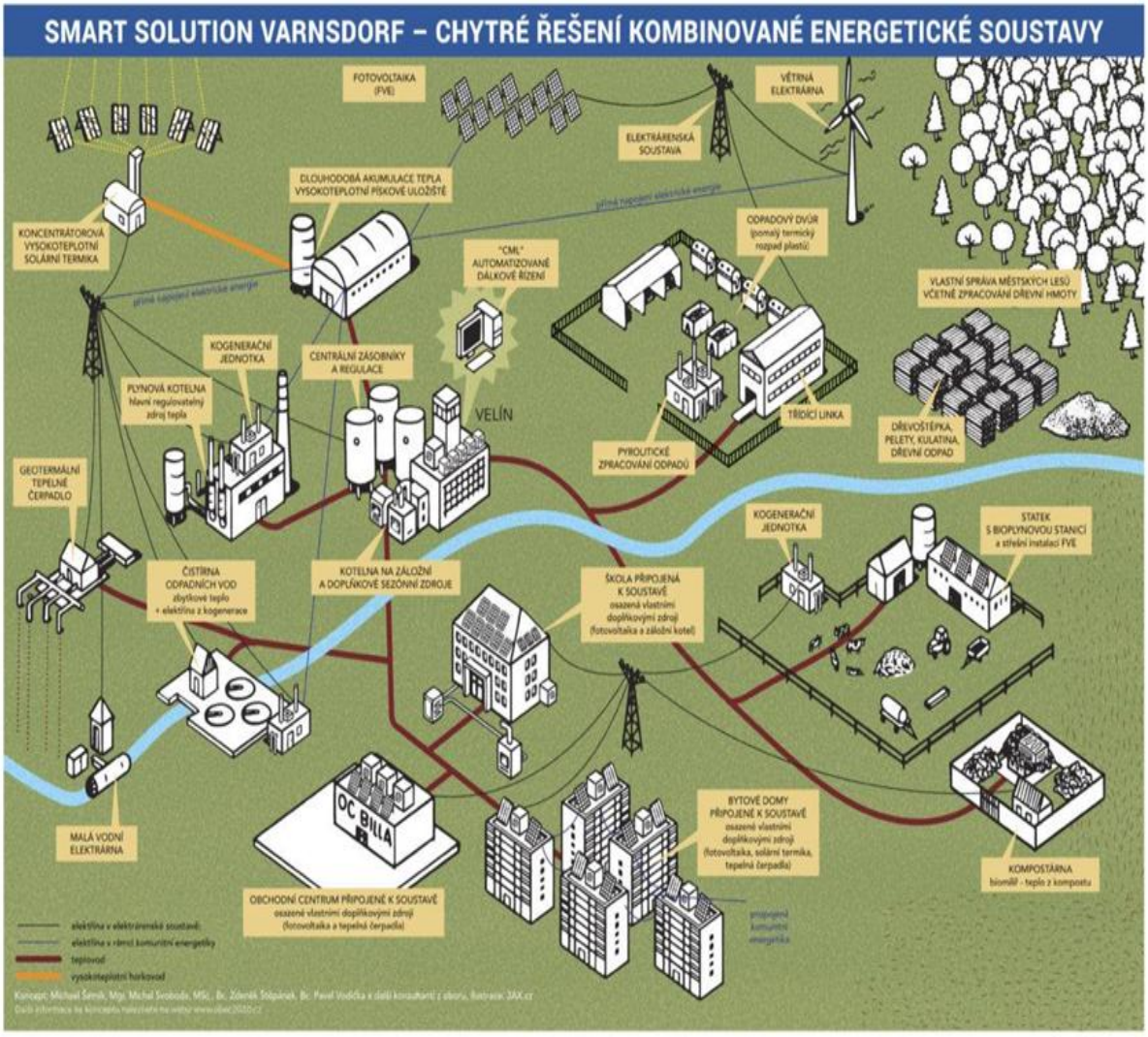
Kulturní dům
Kotelna na biomasu
150 kWt, baterie 19,2 kWh

Středisko volného času
Střešní FVE o výkonu 10,4 kWp

Obecní úřad
Kondenzační kotle 2 x 49 kWt

Budišov and Budišovkou

MAS Varnsdorf prioritizes environmental elements and fair economy practices, involving local actors in sustainable development efforts.



In the Czech Republic, several databases serve for monitoring and comparison of current data on Energy Communities (ECs):

Platform of the National Network of Local Action Groups for Community Energy: Formed by members of Local Action Groups (LAGs) in 2021, this platform assists in preparing ECs and specific projects, analyzes rural area needs related to community energy, monitors subsidy opportunities, shares experiences, forms partnerships, and advocates for policy and legislative requirements. With several dozen LAGs involved in community energy, it's expected that the majority will participate in the coming years.

Union for Community Energy (UCE): Founded by the Frank Bold Expert Group and the DUHA (Rainbow) Movement, UCE aims to promote decentralized energy, integrate community energy into strategic documents, share know-how, advocate for supportive legislation, and increase the share of local clean energy sources in production and consumption. UCE works through legislative, subsidy, and implementation working groups to monitor developments, advocate for appropriate subsidy conditions, and analyze different approaches to community energy.

Association of Community Energy of the Czech Republic (ACE CR): ACE CR is a voluntary association of community energy supporters focused on decentralizing the energy sector, promoting energy communities, and raising awareness about clean energy. It brings together owners of community renewable energy sources, negotiates better conditions for them, represents them at various levels, and provides up-to-date information in the energy field.

PP4 FORSCHUNG Burgerland - Austria

In order to establish the "energy communities" model in Austria, a platform was set up consisting of a coordination office of the Climate and Energy Fund and partners from the nine federal states. This platform serves as an advocacy group for the model and also operates a homepage that provides essential information, online guides for founding a company, contract templates and FAQs. The work program for the period 2025-2027 is currently being planned, which will focus on the opportunities offered by the new Electricity Industry Act, among other things.

The Energy Industry Data Exchange, a joint undertaking of the grid operators in Austria, is responsible for the data exchange of energy communities in Austria. The use of standardized protocols within the EDA infrastructure ensures that market participants do not incur any additional costs for the maintenance of different interfaces. The data is exchanged in a standardized format, which means that data processing remains uniform for all participants. The processes for processing and responding to the messages received are also standardized. The processing of the data is also standardized to a certain extent, so that the effort required to process the messages is minimized.

The following options are available to energy communities for data transmission and data exchange:

-User portal (including process environment for sending and processing messages)

-E-mail connection (own software application required for sending and processing messages)

-Communication endpoint (own IT environment and software application required for sending and processing messages)

The user portal was developed for energy communities, which not only transmits data securely, but also offers all information on data transmission and security as well as comprehensive services. In the user portal, the messages transmitted by the grid operators are visualized and processed for further use.

Billing within the energy communities is usually carried out either by the EC initiators themselves or by service providers. In addition, an association for the promotion of renewable energy communities has provided an open billing platform. Develop open source software that enables EEGs to manage master data, contract management and billing and has the following features:

-allows EEG members to be created and managed and tariff models to be entered

F-ollows the specified processes of the electricity industry and operates the necessary interfaces (ebUtilities or EDA portal)

-allows data preparation (consumption / feed-in) and visualization

-supports clearing (billing per member according to contract and tariff model), billing (invoicing and dispatch) and payment (e.g. via SEPA direct debit)

-can be operated via conventional Internet browsers (barrier-free) (independent of operating system) and requires minimal system requirements

-supports various roles and authorizations (SW admin, EEG admin, EEG user)

-provides non-functional features such as security, logging, tracing and a platform-independent deployment model

Make this software accessible in two models:

-Do It Yourself (DIY): free to download as open source software for anyone with the technical skills to install and operate the software themselves

-Software-as-a-Service (SaaS): as a service via VFEEG, where the EEGs only pay for the actual personnel and infrastructure costs.

PP5 IRENA - Croatia

EC Forum in Croatia brings together organizations and initiatives that are actively working to establish their own energy community or otherwise contribute to the development of energy communities in Croatia.

The Forum's mission is to provide citizens with direct ownership and the right to decide on the production of their own energy and active participation in the energy market through energy communities, and thus the realization of new renewable energy plants with a total capacity of at least 1 GW by 2030.

The objectives towards which the Forum will act in order to achieve this mission are:

- Simple and affordable process of establishment and registration of energy communities for groups of citizens who are not

(energy) experts.

- Accessible mechanisms of technical and financial support with the aim of reducing the riskiness of energy community projects and encouraging their establishment, development and stable growth.
- A favorable environment for the work and business of energy communities and ensuring their economic and financial sustainability, with a focus on solutions such as equal participation in the market, direct sharing of energy with members, and conclusion of contracts on the purchase and sale of energy directly with other actors on the market.
- The active role of cities and municipalities in the development of energy communities and civic energy projects on public areas and rooftops.

Members of the EC Forum in Croatia and signatories of the charter are listed **here**.

PP6 KSENA - Slovenia

A list of key organizations and databases related to energy market and energy communities topics in Slovenia is provided below:

- Borzen, operater trga z elektriko, d.o.o.

  https://borzen.si/sl-si/

Currently in Slovenia has a RES Info Point specifically dedicated to the integration of renewable energy sources, which provides comprehensive information on a national level and serves to accelerate investments in the field of renewable energy. It was established by Borzen Ltd, the Slovenian electricity market operator, which already operates the Centre for RES/CHP for the promotion of the use of renewable energy sources in accordance with the Regulation on the establishment of the tasks of the contact point for the promotion of the use of renewable energy sources (Official Gazette of the Republic of Slovenia, No. 50/22 and 122/22) and the Act on the Promotion of the Use of Renewable Energy Sources (Official Gazette of the Republic of Slovenia, No. 121/21, 189/21 and 121/22 - ZUOKPOE).

The aim of the contact point for the promotion of the use of renewable energy sources is to provide information on the implementation of renewable energy projects in one place, thus facilitating investments in the field of renewable energy sources. The contact point guides the investor (public or private) through the procedures for obtaining the permits and other acts necessary for the construction, reconstruction, renovation or operation of a generating installation and its connection to the grid, as well as through the procedures of the support programmes. The web portal of the Contact Point for the Promotion of the Use of Renewable Energy Sources is therefore intended for applicants (or persons authorised by the applicant) wishing to invest in a renewable energy production installation. Available at: KT Borzen (kt-ove.si)

- Ministry of the Environment, Climate and Energy
- https://www.gov.si/en/state-authorities/ministries/ministry-of-the-environment-climate-and-energy/

The Ministry of the Environment, Climate and Energy (hereinafter reffered as: MOPE) acts as a key regultative authority in the field of renewabe energy and energy communities. In addition, MOPE launcehs calls for proposals for the co-financing of various energy projects. As mentioned before, on 1 March 2024, MOPE launched a call for proposals for the co-financing of the construction of new solar electricity generation systems on public buildings and car parks for the period 2024-2026, with a budget of EUR 20 million, financed under the Recovery and Resilience Plan (Načrt za okrevanje in odpornost - NOO).

- Agencija za energijo (The Energy Agency)

  https://www.agen-rs.si/web/en/home

The Energy Agency was established as the regulator of the Slovenian energy market under the legislation and is therefore responsible for the preparation and compliance of these rules.

The regulator's task is to create the conditions for the development of competition and to ensure that it operates in line with the requirements for a sustainable, reliable and high-quality supply. The Energy Agency shall, acting under public authorisation, carry out the administrative and other tasks specified in the Energy Act, EU regulations, which determine the competences of the national energy regulators, or in general act of the agency adopted on the basis of the energy legislation.

- Eko Sklad - Eco Fund (Slovenian Environmental Public Fund

  https://www.ekosklad.si/

Eco Fund, Slovenian Environmental Public Fund (Eco Fund), was established in 1993. Its main purpose is to promote development in the field of environmental protection by offering financial incentives such as soft loans and grants for different environmental investment projects.

At present, there is no online database in Slovenia containing detailed information on energy communities such as their name, location and possibly also estimated importance/position. All important and official information on to energy communities can be found on the websites mentioned above and in the annual reports prepared by some of these organisations.

PP8 REDASP - Serbia

The state is trying to increase the scope of support for the use of renewable energy sources by constantly working on by-laws and following the recommendations of the European Commission, bearing in mind the limitations imposed by the ability of the network to accept the produced Electricity, without jeopardizing the stability of the network. Three residential communities in the capacity of Buyer-Producer in Subotica, Pančevo and Nis are registered and successfully connected to the network so far.

PP9 OER - Romania

Similar ideas for energy communities exist in the early stages in Brasov, Bistrita, Tulcea and other localities.

Starting with page 86 in this document:

https://www.greenpeace.org/static/planet4-romania-stateless/2024/03/21d2dcb5-comunitatile-de-energie-in-romania-de-la-aspiratie-la-realitate.pdf

PP11 DIT - Germany

There are more than 1700 energy communities and 914 energy cooperatives in Germany. Listing them would break the mould of this study, but one may check them out here (incl. Contact data):

https://www.energiegenossenschaften-gruenden.de/energiegenossenschaften-und-projektentwickler-suchen.html

https://www.unendlich-viel-energie.de/projekte/energie-kommunen/alle-energie-kommunen-auf-einen-blick

https://www.energiegenossenschaften-gruenden.de/energiegenossenschaften-und-projektentwickler-suchen.html

https://www.unendlich-viel-energie.de/projekte/energie-kommunen/alle-energie-kommunen-auf-einen-blick

PP12 NEK - Slovakia

ECs are created in Slovakia only gradually, but in order to ensure organization, management and management, the National Platform of Energy and Environmental Clusters and Associations of Slovakia was created gradually from 2022 under the leadership of the National Energy Cluster NEK as a leader, which covers 8 industrial organizations with national and regional scope. These are aimed at building energy local and regional communities, energy and environmental aspects of project solutions and support for distributors and producers of energy based on RES, mainly from the environment of SMEs, housing associations and municipalities. We list the names and place of operation of these organizations:

1. Národný energetický klaster NEK, Bratislava - Ružinov,
   (National Energy Cluster NEK)
2. Ipeľský energetický environmentálny klaster IPEEK, Veľký Krtíš,
   (Ipeľ energy environmental cluster IPEEK)
3. Regionálny priemyselný inovačný klaster Rimavská kotlina REPRIK, Jesenské,
   (Regional industrial innovation cluster Rimavská kotlina REPRIK)
4. Energetický klaster Prešovského kraja EKPK, Prešov,
   (Energy cluster of Prešov Region EKPK)
5. Trenčiansky energetický environmentálny klaster TEEK, Trenčín
   (Trenčín Energy Environmental Cluster TEEK)
6. Energetický environmentálny klaster Trnavského kraja EEKTTK, Trnava
   (Energy Environmental Cluster of the Trnava Region EEKTTK)
7. Klaster energetických komunít Slovenska KEKS, Bratislava - Ružinov,
   (Cluster of energy communities of Slovakia KEKS)
8. Národná recyklačná agentúra Slovensko NARA-SK, Zvolen,
   (National Recycling Agency Slovakia NARA-SK, Zvolen)

Each of these organizations has from 10 to 50 members and a significant programmatic, technical, personnel and technological range of capacities and possibilities for the future successful implementation of EC building

Circuits/Specifications:	Example/Utility Brief
Conclusion/Summary: List any other models, interesting points and peculiarities of the business functioning of the EC management method in your country.	List sample or case studies and information sources) Publications and links...) and similar interesting things. We also recommend adding interesting home-made visual material or tables with relevant and current statistical data)

PP2 IMRO-DDKK, STRIA - Hungary

Overall, the development of energy communities is at a very early stage in Hungary. Only three have been registered officially, and none of them has started actual operations. (They plan to do so in the autumn 2024. In fact, two of them is being setup with project funding, and the projects must be completed by the end of the year.) However, by interviewing all three energy communities an effort was made to collect information to the best of our knowledge.

PP3 JAIP –Czech Republic

No comment

PP4 FORSCHUNG Burgerland - Austria

In addition to the already mentioned legal and organizational aspects, there are further interesting models, features, and points in the business operations of Energy Communities (ECs) in Austria. Models and interesting points:

- Citizen Energy Projects: Citizen energy projects are a significant part of Austria's energy transition. They enable citizens to actively participate in the generation and use of renewable energies. Energy communities provide a suitable organizational form for such projects, as they promote the participation and involvement of members.
- Collaborations with Local Businesses: Many energy communities closely collaborate with local businesses to realize renewable energy projects. These collaborations contribute to local value creation and strengthen the regional economy.
- Innovative Financing Models: Many energy communities rely on innovative financing models to realize their projects. These include crowdfunding, cooperative shares, or citizen participation models.

Samples:

- EEG Lechtal: The Lechtal Energy Community was the first cooperative of its kind in Tyrol. It has already motivated hundreds of people to participate in citizen energy projects. The municipalities in Lechtal also plan to include drinking water power plants in the energy community to ensure sustainable regional energy supply.
- EEG Grätzl Energie: The Grätzl Energie energy community in Vienna closely collaborates with a metal processing company that operates a photovoltaic system on its roof. The surplus energy is supplied to the energy community and distributed to private consumers.
- EEG Wolfsberg: The municipality of Wolfsberg in Carinthia has established an energy community to supply historic buildings with green energy. Since these buildings are not allowed to be equipped with photovoltaic systems, the municipality utilizes PV systems on its own buildings.

Links: Good Practice – Energiegemeinschaften, Home - EEG-LECHTAL | Erneuerbare Energiegemeinschaft Lechtal, Graetzl Power Solution (graetzlenergie.wien)

New Electricity Industry Act (ElWG):

A new Electricity Industry Act (ElWG) is set to come into effect in Austria, introducing various innovations relevant to energy communities:

Clarification and Amendment: The ElWG aims to eliminate uncertainties in the existing legal framework and fill gaps, which

could also affect the legal status of energy communities.

Focus on End Customers and New Market Participants: The new law intends to shift focus towards end customers and define new market participants such as aggregators and energy communities. This suggests that energy communities could play a significant role in the new legislation.

Network Access and Flexibility: The ElWG introduces flexible regulations for network access, including the possibility of temporary flexible network access. This could enable energy communities to connect their facilities to the grid more quickly.

Energy Storage: The law will also include regulations on energy storage, including clear definitions and implementation of EU directives. However, it will continue to prohibit network companies from operating energy storage facilities.

Decentralized Supply and Community Facilities: The ElWG expands the possibilities for using direct lines and allows community facilities to include storage. With the new ElWG, the surplus feed-in by third parties will be legally secured in terms of electricity law through the expansion of the scope of application for direct lines. The option is thus opened up for the contractor to use the metering point of the contracting party for the utilization of surplus electricity.

Statistics/Map of Existing Energy Communities in Austria: Landkarte – Energiegemeinschaften

PP5 IRENA - Croatia

No comment

PP6 KSENA - Slovenia

In 2016, when the connection of self-supply installations in Slovenia started, only 135 self-supply installations with a total connection capacity of 1.1 MW were connected. In 2022, by contrast, 12,140 new installations were connected, with a total capacity of nearly 154 MW. In 2022, a total of 27,382 self-supply devices with a total installed capacity of 349 MW and an average installed capacity of 12.7 kW were thus in operation. As the number of self-supplying consumers have been increasing, so has been the average power of self-supplying devices, mainly due to the increasing use of electricity to heat buildings with heat pumps and the growing interest in using self-supply devices to charge electric vehicles at home.

Together with the development of self-supply, the number of production facilities for community self-sufficiency is expected to increase over the next few years. The first facility for community self-supply, with a rated power of 14 kW, was connected in 2019. In 2020, four such installations with a total connected capacity of 86 kW were connected. In 2021, 25 installations with a total connected capacity of 1100 kW were connected, while in 2022, another 29 installations with a total connected capacity of 2000 kW were connected. By the end of 2022, there were already 59 community self-supply facilities in operation, totalling 3200 kW.

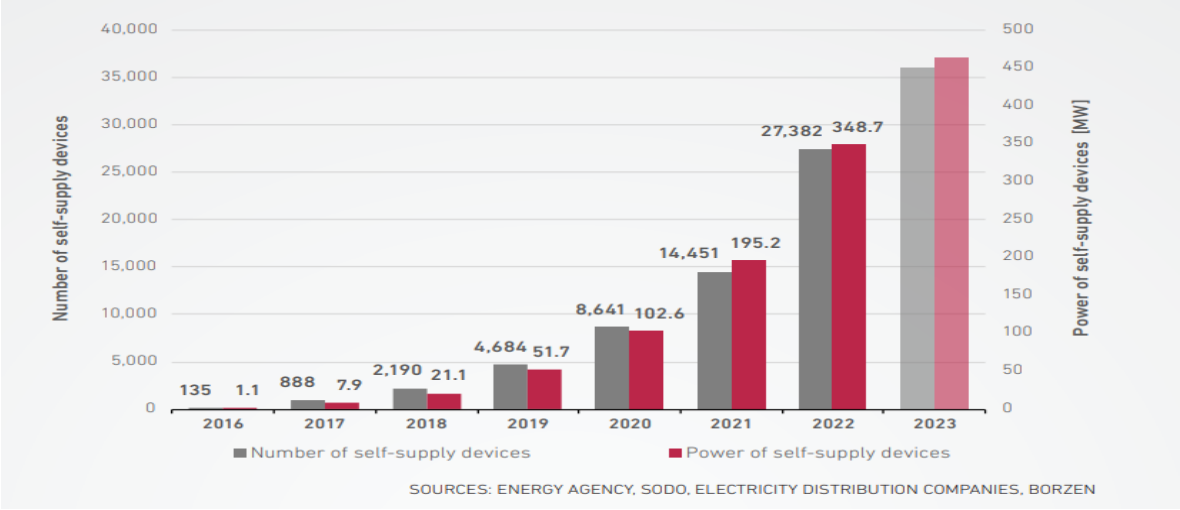


Figure 5: Number and installed capacity of self-supply devices in the 2016–2022 period and the forecast until 2023

Source: Report on the energy situation in slovenia, Agencija za energijo, 2022.

https://www.agen-rs.si/documents/54870/68629/Report-on-the-energy-situation-in-Slovenia-2022/d72a2865-931f-441d-b8a3-0346eac0e59a

Energy communities and bottom-up approach community projects will defibnitely play an important role in achieving national renewable energy targets. So far, the legal framework for renewable energy communities is well established and RECs have have started to develop; however, there is an area for improvement. Additionally, local and regional energy agencies together with municipalities should play more important role in the creation of local energy communities, especially in the preparation of local energy concepts (LEK-s), whereby a 10-year plan for energy-related issues in the municipality, renewable energy targets and renewable energy projects are set.

For facilitation of energy communities, subsidies and loans are also of particular importance. The establishment of energy communities in Slovenia is accelerated through subsidies and calls for cofinancing issued by the Ministry of the Environment, Climate and Energy, Borzen and Eko Sklad. In addition, funds can be accessed through international programmes such as Horizon2020, Interreg, Life, ELENA and others.

The RES Info Point, specifically dedicated to the integration of renewable energy sources shall facilitate and accelerate the development of sustainable energy projects. For installation of a renewable electricity generation plant on private or public land, the consultants shall provide expert guidance through the necessary permitting procedures and advise on support schemes. The RES Info Point is available at: https://kt-ove.si/

Other relevant materials and links:

- Examples of good practice for the energy community as a legal entity

Primeri dobrih praks za energetsko skupnost, ki je pravna oseba, Goriška lokalna energetska agencija – GOLEA, December 2023

https://borzen.si/Portals/0/To%C4%8Dka%20OVE/Gradiva/%C5%A1tudija%20primerov%20dobrih%20praks%20skupnostne%20samooskrbe%20ki%20je%20pravna%20oseba%202.pdf?ver=spO0EjAHo3AoskhkdRIOvw%3d%3d

- Examples of good practice for community self-supply

(Communities formed on the basis of a contract)

Primeri dobrih praks za skupnostno samooskrbo (Skupnosti oblikovane na podlagi pogodbe) Goriška lokalna energetska agencija – GOLEA, December 2023

https://borzen.si/Portals/0/To%C4%8Dka%20OVE/Gradiva/%C5%A0tudija%20Primeri%20dobrih%20praks%20za%20skupnostno%20samooskrbo%201.pdf?ver=NoJF6DYW2oCOlVtSub_LqA%3d%3d

PP8 REDASP - Serbia

- Law on Energy of the Republic of Serbia
- Law on the use of RES,
- Energy Balance of the Republic of Serbia in 2024

PP9 OER - Romania

Case study:

Energy community in big city housing block

This model sheet has been compiled on the basis of real, demographics and consumption of the Grădina Apusului block in Sector 6, Bucharest, which is at an advanced stage of development on its way to becoming an energy community.

Type of community: large urban, block inhabitants, average age 45 years, average income 4.000 RON/inhabitant, 60 apartments with an average number of 2 tenants and the average surface of 64 sqm, grouped in three block staircases of 20 apartments/block. Block with a height of 4 floors.

Average annual electricity consumption is 1.200 kWh/household + 1.104 kWh/year for lighting common parts.

Average annual heat consumption 12.660 kWh/household (Source of heat supply - 87% centralised heating system, central heating, 13% individual gas consumption).

Viability of the investment project

	Installed capacity	Total investment	Investment/ inhabitant	Required area of PV panels	
Scenario A: Covering electricity consumption with common parts	0,8 kW	1.500 €	12,5 €	6 sq. m	
Scenario B: Covering electricity consumption with common shares and individual electricity consumption	56 kW	36.000 €	300 €	600 sq. m	
Case study: Sunset Garden - Covering energy consumption electricity with common parts and surplus production fed into the grid	5,7 kW	4.000 €	33,33 €	40 Sq. m	

Energy communities in Romania: From aspiration to reality. Resources for citizens and public authorities.

https://www.greenpeace.org/static/planet4-romania-stateless/2024/03/21d2dcb5-comunitatile-de-energie-in-romania-de-la-aspiratie-la-realitate.pdf

Energy communities. An analysis of legal forms of organisation and operation.

https://www.greenpeace.org/static/planet4-romania-stateless/2023/03/9bfaa5ea-analiza-a-formelor-de-organizare.pdf

Cooperativa de Energie

https://cooperativadeenergie.ro/despre-ce/

PP11 DIT - Germany

VIRTUAL (ENERGY) COMMUNITIES OF "REGIONALWERKE"

Virtual (energy) communities are developed, implemented developed by the Bavarian company "regionalwerke". It is based on the idea that several municipalities found a public agency ("Anstalt des öffenltichen Rechts") to jointly conduct economic activities in diverse fields, including the supply and operation of energy and electricity grids amongst others. For each of these fields, the municipalities, as joint public agency, found a subsidiary (GmbH & Co. KG). Hence, electricity production and energy distribution are each organised as subsidiaries.

The benefits of this form of energy communities are that all citizens can be included (independently of investments). Further, citizens of municipalities make local and democratic decisions with regards to energy supply and distribution in the region. This increases the acceptance of renewable energies and offers a possibility that citizens benefit financially from the profits of the energy system. On the level of municipalities, they benefit as they can work together, share bureaucratic and administrative burdens and transfer knowledge. It also allows determining electricity prices on the municipal level.

"Regionalwerke" is currently being implemented e.g. in District Cham. Landkreis Cham and four municipal utilities have joined forces in 2023 to establish Regionalwerke GmbH, aiming to provide clean, reliable, and affordable energy to residents and businesses. Regionalwerke Cham plans to procure reliable electricity from the region for the region, aiming for full participation from 39 municipalities or at least 90% of the population.

Further information: https://regionalwerke-cham.de/aktuelles/

FUCHSTAL'S "ENERGIEZUKUNFT"

Fuchstal, a Bavarian municipality of 4,000 residents, is ambitiously striving for energy self-sufficiency by 2030. Through robust investments in renewable energy, the community already covers its electricity demand with local renewable sources. Through community-driven projects like a communal PV facility and wind park, Fuchstal has significantly reduced its reliance on fossil fuels, bolstering its financial stability with revenues from renewable energy sales. Currently producing 40 million kWh annually, the municipality aims for energy self-sufficiency by expanding rooftop solar and wind energy. With federal funding, Fuchstal's "Energiezukunft" project integrates surplus electricity into thermal energy storage, enhancing grid stability and enabling sustainable heating solutions for residents. This innovative approach has attracted attention beyond the municipality, serving as a model for other communities striving for energy autonomy and climate resilience.

Further information e.g. https://www.energiezukunft.eu/buergerenergie/energieautark-bis-2030-mit-windkraft-und-sektorenkopplung/

PP12 NEK - Slovakia

The whole field of Slovak energy industry is facing a gradual transformation. Based on the requirements of the European legislation, there is a gradual development and interconnection of energy markets as well as regulatory services. At the same time, new technologies and requirements are coming.

Domestic operators of transmission and distribution systems must also respond adequately to this situation. Fortunately, SEPS sees the future of the transmission system in the decentralization of resources from a few large to several smaller providers as part of the mentioned changes. It also assumes a change in consumer behavior with the aim of higher energy cost savings. It is the demands for savings that will bring about the efforts of consumers to produce their own electricity, which in the framework of the expected development of the EC will result in the introduction of new technologies into the electrification system.

Flexibility aggregators are a solution to reduce consumers' costs for electricity and, at the same time, their carbon footprint. They can optimize and manage the operation of flexible devices of both consumers and manufacturers in real time. The task of the aggregator will be to aggregate non-necessary electricity from consumers and smaller providers and then provide it to the transmission system. As an example, we can cite municipal heating plants, which, while producing heat, also produce electricity, which is a tremendous opportunity for the establishment of the relevant EC, also with the participation of the local government.

SEPS ran into a problem when changing the legislation: Can a consumer or a small producer of electricity play a role in the management of the electricity system at the same time as both a consumer and a source of electricity?

The pilot project "PIAF" (Pilot Aggregation of Flexibility for Support Services) gave her the answer to this question, which was successfully completed with the publication of the Final Report on the status of the PIAF project. The goal of the project, which ran from January 2022 to October 2023, was to propose an amendment to the legislative conditions within the market for the involvement of decentralized sources of flexibility and the functioning of flexibility aggregators for the development and use of flexibility aggregation options on the market with support services from the point of view of their application within the dispatch management of the electricity system of the Slovak Republic in accordance with the requirements arising from EU legislation. The project was based on the rules applied for the virtual block, which are listed in the Operating Rules and Technical Conditions of SEPS.

As part of the project, several meetings were also held with the representatives of the deviation accountant (OKTE), where the main goal was to clarify the necessary range of data that is necessary for a correct evaluation of the activated flexibility. The project brought valuable results and opened up important topics and questions for launching the aggregation of flexibility for the provision of support services. SEPS believes that the volume of flexibility aggregation services will continue to grow faster and faster, which will certainly be helped by the launch of EDC from OKTE, which as of October 2, 2023 also enables independent aggregation. This allows flexibility to be used even on devices or technologies where the aggregator is not directly a supplier or buyer of electricity and through which smaller companies will be able to offer support services, or within the given community, established ES or EK operating there.

When entering energy communities, consumers enter into agreements that may change their individual consumer rights. According to a recent survey by the European Consumer Organization BEUC, the vast majority of members are satisfied with their membership of energy communities. However, if they are to continue to develop, energy communities must also ensure that they respect and comply with existing consumer protection legislation. Below are some recommendations on how to ensure this.

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PP8 REDASP – Serbia

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PP9 OER – Romania

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PP11 DIT – Germany

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PP12 – NEK – Slovakia

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Other additional documents and information of individual partners

PP2 IMRO-DDKK, STRIA - Hungary

PP2 IMRO-DDKK - Hungary

PP4 Forschung Burgerland - Austria

PP5 IRENA - Croatia

Categories of Energy Communities - per installed capacity and per type of energy consumption e.g. residential or per energy carrier e.g. electricity, heat

Although categories of Energy Communities based on installed capacity and/or type of energy consumptions are not yet established, they are linked to other regulatory documents relevant for usage and supply of electrical power through the national power grid. The Rulebook on general conditions for network and electricity supply enacted on 29th August 2022 by Croatian Energy Regulatory Agency (HERA), for instance, defines two categories for grid usage: household and entrepreneurship category.

The household category involves the usage of an electricity meter for an end customer or an active customer who purchases electrical energy for their own household consumption, excluding commercial or professional activities, while the entrepreneurship category involves the usage of an electricity meter for an end customer or an active customer who does not

purchase electrical energy for their own household usage.

Based on the previous version of Rules for power grid distribution network connection issued by HEP ODS ltd in February 2018, grid users are divided according to:

- nominal voltage at the place of electricity delivery – on users of low voltage grid (0,4 kV) and medium voltage grid (10 kV, 20 kV, 30 kV or 35 kV).
- the number of connection phases – single-phase or three-phase
- connection power - single-phase connection power lower than 4,6 kW (for producers) and in 4,6 – 11,5 kW range (for purchasers), and three-phase connection power in various ranges from 11,04 kW to 10 MW (for purchasers) and from 50 kW until 10 MW (for producers)
- consumption category - household and entrepreneurship category
- type of production unit, i.e. element at the interface with the network (for producers) – with inverter, with synchronous generator without inverter, with an asynchronous generator without inverter.

Assuming there will be future regulations that will further improve and more precisely regulate the process and characteristics of energy usage in Energy Communities, they will probably take into consideration already defined categories and structures set in existing regulatory framework.

It is also important to mention that, although Energy Communities were introduced into the Croatian legal framework through the Law on the electricity market and the Law on renewable energy sources and high-efficiency cogeneration, it is very difficult for Energy Communities to take root in practice. The process of establishing Energy Communities is complicated, and the obligations imposed upon registration represent insurmountable obstacles for groups of citizens who do not have the support of professional institutions and financial resources.

From 2021, when Energy Communities were introduced into the Croatian legal framework, until the spring of 2024, only one civil initiative managed to obtain a license to carry out activities, and that was accomplished with the support of several experts and the expenditure of considerable financial and human resources. Therefore, the process needs to be simplified and, at the same time, better defined and regulated.

Subsidies

In order for the local community to get involved, participate and benefit from the energy transition, an effective policy of the national administration is needed that offers a number of financial supports to local energy projects, such as the European Climate Initiative (EUKI) funding instrument of the German Federal Ministry for Economic Affairs and Climate Action. National subsidies and grants are an indispensable tool for the development of energy communities of citizens.

With the National Plan for Recovery and Resilience, the member states propose reforms and investments that should primarily ensure that a minimum of 20% of the Plan's total funds are directed to meeting the goals of the digital transition, and a minimum of 37% of the total funds are earmarked for achieving the goals of the green transition.

Croatia has secured financial resources in the amount of almost 9.9 billion euros for its Plan within the Mechanism, of which 6.3 billion euros are grants (12% of Croatian GDP), and around 3.6 billion euros are soft loans.

The plan is structured to include five components: economy; public administration, judiciary and state property; education, science and research; health care; labor market and social protection and one initiative: renovation of buildings.

National Plan for Recovery and Resilience emphasizes the importance of reforming the power grid. Within the economy component, which receives 54% of the funds, the subcomponent 'Energy transition for a sustainable economy' mentions the concept of an energy community. In the aforementioned sub-measure, it is indicated that the reform will remove barriers to the acceptance and distribution of larger amounts of renewable energy, reduce losses and eliminate bottlenecks in the system, introduce active customers and active management of their consumption, and that citizens will be given the opportunity to join energy communities, which is all a prerequisite for the full implementation of Directive (EU) 2018/2001 and Directive (EU) 2019/944. However, energy communities were not singled out as special beneficiaries of funds with special financial allocations.

Cohesion policy

The cohesion policy of the European Union is financed by 5 funds, the common name of which is the European Structural and Investment Funds (ESI Funds). The Cohesion Fund can finance the efficient use of energy and renewable energy sources in member states whose gross national income per inhabitant is less than 90% of the EU average, while investments in the infrastructure of providing basic services to citizens in the fields of energy, environment, transport and information and communication technologies can be realized through the European Fund for Regional Development.

Croatian allocation for specific objective 2.2. Promotion of renewable energy in accordance with Directive (EU) 2018/2001 of

the European Parliament and of the Council [1] on energy from renewable sources, including the sustainability criteria established therein (ERDF) from the Competitiveness and Cohesion Program 2021-2027. is 95,000,000 euros. Within the specific goal, energy communities are mentioned, but the establishment of energy communities and specific means for their promotion is not envisaged

"Starting from the strong connection between energy policy and reducing the carbon intensity of the economy and society, the goal is to ensure affordable, safe and high-quality energy supply in a way that will support the reduction of the use of fossil fuels, greenhouse gas emissions and contribute to mitigating the risk of climate change through increasing the capacity of all market stakeholders (energy producers, distributors, energy suppliers, active customers, energy communities, renewable energy communities, system operators, etc.)"

Modernization fund

The modernization fund is intended to support ten EU member states with lower incomes in order to achieve the goals of the European Green Deal by supporting a green and socially just transition.

The program supports the modernization of energy systems and improves energy efficiency. Energy communities can cover all activities listed under priority areas of the fund (e.g. renewable energy production, energy efficiency, promotion of just transition).

The resources of the Modernization Fund for the Republic of Croatia are estimated at 1 billion euros for the period until 2030, that is, around 100 million euros per year. The first call was intended for investments in Croatian companies, in development, in raising competitiveness and green transition, without mentioning energy communities.

The Environmental Protection and Energy Efficiency Fund

The Fund for Environmental Protection and Energy Efficiency (FZOEU) is the central place for collecting and investing extrabudgetary funds in programs and projects of environmental and nature protection, energy efficiency and the use of renewable energy sources. In the system of management and control of the use of structural instruments of the EU in the Republic of Croatia, the Fund has the role of an intermediary body for certain specific objectives in the field of environmental protection and sustainability of resources, climate change, energy efficiency and renewable energy sources. Public invitations/tenders in the field of environmental protection and energy efficiency are published on the Fund's website.

Ministry of Economy and Sustainable Development

Just like the Environmental Protection Fund, the Ministry of Economy and Sustainable Development publishes public calls and tenders for the co-financing of numerous projects in the fields of energy, environmental protection, water supply, waste disposal, digitization, etc.

Invitations from regional and local self-governments

On the website projekti.eu, you can find information about tenders by counties, cities and municipalities. The right to grant funds can be realized in several steps:

1. Collection of offers and design of cost estimates for the investment
2. Calculation of the total value of the investment
3. Submission of data and documentation for the preparation of the application
4. Application for tender or public invitation within the deadline
5. Signing of the Grant Agreement
6. Compliance with the Agreement during project implementation
7. Completion of the project on time and within the planned budget.

Definitions in Croatia
In Croatia, most definitions are copies of European laws and provisions. In the Electricity Market Act, the energy community of citizens is defined as:

"a legal entity established in the territory of the Republic of Croatia, whose owners or members voluntarily join together in order to realize the benefits of the exchange of energy produced and consumed in a certain spatial scope of the local community, which operates on the basis of the law regulating the financial operations and accounting of non-profit organizations, and operates on the basis of a license issued in accordance with the law governing the energy sector and the provisions of this Law".

It is defined that the share owner or member can be a natural or legal person, including a body of a local self-government unit, a micro-enterprise or a small enterprise whose place of residence, business establishment or business premises is on the territory of the local self-government unit where the citizens' energy community is headquartered. Unlike the EU directive, in Croatia, citizens' energy communities are limited to the local self-government unit. This significantly limits the number of members who can participate in the community. The energy community is obliged to submit to the operator of the distribution system a list of all billing metering points (production, consumption and storage, if any) and the distribution key according to which electricity is distributed at the billing metering points provided. Each metering point must be connected to the same

10(20)/0.4 kV transformer station and equipped with a smart meter. In addition, a restriction was introduced that the connection power in the direction of electricity transmission to the network must not exceed 80% of the total connection power in the direction of electricity reception at all metering points included in the community. In the Law on renewable sources and high-efficiency cogeneration, the community of renewable energy is defined identically as in the EU Directive on renewable sources. The total connected power of the community's production facilities is limited to 500 kW. Energy sharing can be conducted by a third party that is not a consumer of its own renewable energy.

The main steps for establishing an energy community

(Guide created within the LOGYCO project)

1. The establishment of an association and registration in the Register of Associations of the Republic of Croatia is the first major step in the organization of the energy community of citizens;

2. After the establishment of the association, it is necessary to fill out the form ZDOED – Application for the issuance of a permit for the performance of energy activities. The completed form along with all other necessary documentation must be submitted to HERA – the Croatian Energy Regulatory Agency. Conditions for submitting the completed ZDOED form:

    a. Evidence of general qualifications
    b. Evidence of technical qualification
    c. Evidence of financial qualification
    d. Evidence of professional qualification

3. Preparation of technical documentation for the power plant - the solar power plant of the energy community of citizens that is connected to the power grid should have technical documentation;
4. Connecting the power plant to the grid - depends on the power of the power plant and goes through a detailed procedure determined by HEP ODS (Croatian electricity distributor).

Power plant installation procedure

The procedure for installing a solar power plant and connecting it to the power grid primarily depends on its power. Up to 500 kW nominal power, a simple connection is used, and for powers above 500 kW, a complex connection is used. Power plants up to 500 kW are sufficient for most energy communities of citizens, and the procedure for connecting to the grid is as follows:

- issuance of electricity approval (EES) with the offer of connection
- issuance of the main project certificate
- payment of the connection fee (acceptance of the connection offer), construction of the connection
- concluding an agreement on the use of the network
- putting the connection under voltage
- issuance of a certificate on the start of using the network
- trial operation and issuance of a certificate for permanent operation

In accordance with Article 22 of the Ordinance on connection to the distribution network of HEP ODS, below is a detailed **description of simple connection**:

(1) HEP ODS shall, on the basis of the received proper Request for issuance of EES for the building for which it has determined that simple connection is possible (connection by simple connection), issue it to the Applicant within 15 days. Along with the EES, he also submits the Connection Offer. Issuance of EES a

The connection offer is also regulated by this Ordinance.

(2) The offer to join is valid for 2 years. The applicant is obliged to pay 100% of the connection fee according to the Connection Offer within the validity period of the Offer.

(3) The contractual relationship between HEP ODS and the Applicant is established by the payment of the entire connection costs according to the Connection Offer.

(4) HEP ODS should realize a simple connection within 30 days from the payment of 100% of the connection fee according to the Connection Offer and the settlement of property-legal relations for the connection and the submission of the proper Request for conclusion of the contract on the use of the network.

(5) In the event that the Applicant does not make the payment within the validity period of the Offer, it is considered that the contractual relationship between the applicant and HEP ODS has not been established, thus the Joining Offer ceases to be valid.

(6) Restarting the connection procedure, within the validity period of the EES for simple connection, is initiated by the Applicant by submitting a Request for the issuance of an offer on connection based on the valid EES.

(7) The applicant may withdraw from the connection within 30 days from the conclusion of the contractual relationship (payment of the fee according to the Connection Offer) by submitting a written request for termination of the contractual relationship to HEP ODS.

(8) Upon receipt of the request for the termination of the contractual relationship from the previous paragraph 7 of this article, HEP ODS suspends the connection procedure: puts the EES out of force, and acts in terms of the paid compensation as in the case of termination of the Connection Agreement according to these Rules.

(9) After the conclusion of the EES, and before submitting the request for the conclusion of the contract on the use of the network, the Applicant submits a request for confirmation of the main project of the connected building on the form from the annex to these Rules.

(10) Based on the request for confirmation of the main project, HEP ODS analyses the received project in order to determine whether the design solution of the building is in accordance with the special conditions of HEP ODS. The procedure for issuing the Master Project Certificate is carried out according to these Rules, in accordance with the Law on Construction.

(11) Before connection, and after payment of the fee (in the amount of 100%) for connection, the Applicant is obliged to submit to HEP ODS a request for the conclusion of a contract on the use of the network, after which HEP ODS will deliver the contract on use of the network to the network user for signature and start the process of building a simple connection, which HEP ODS should build within the deadline according to paragraph (4) of this article. The Request form for entering into a network usage contract is attached to these Rules. The procedure for concluding the Agreement on the use of the network is regulated by these Rules.

(12) As an exception to paragraph 11 of this article, if the connection procedure is carried out only for the purpose of increasing the connection power of the existing network user due to a change in the way of using the existing installation/facility in their building (therefore, there were no changes in the existing building, i.e. in the facility or installation of an existing network user), the network user does not submit a request for the conclusion of a network usage contract, but HEP ODS delivers to the network user an amendment to the existing network usage contract after payment of 100% of the connection fee and realization of the connection.

(13) After concluding the Network Usage Agreement (that is, amending the agreement in the case referred to in paragraph 12 of this Article), the Applicant submits a request to start using the network on the form attached to these Rules.

(14) HEP ODS, in the presence of the network user, performs the first connection to the network (puts the connection under voltage), thus starting the use of the network, in accordance with these Rules.

(15) After the first successful connection to the network, HEP ODS issues a certificate of the start of using the network with the initial state of the meter, according to these Rules.

(16) The network user who is subject to trial operation with the network in the EES shall conduct trial operation with the network in the presence of a representative of HEP ODS. In the test work, the ability of the network user's building for adequate parallel operation with the network is checked, according to these Rules.

(17) The test manager, after the successful completion of the trial work, prepares the Final Report according to these Rules, and submits it to HEP ODS as a request for the issuance of a Permit for permanent operation.

(18) If it agrees with the Final Report, HEP ODS issues to the network user a Permit for permanent operation according to these Rules. Otherwise, HEP ODS submits a statement on the Final Report with a request to amend/supplement the Final Report and/or to repeat part of the experimental work.

Although they were introduced into the Croatian legal framework by the Law on the Electricity Market and the Law on Renewable Energy Sources and High-Efficiency Cogeneration, it is very difficult for energy communities to take root in practice. The process of establishing energy communities is complicated, and the obligations imposed upon registration represent insurmountable obstacles for groups of citizens who do not have the support of professional institutions and financial resources.

From 2021, when energy communities were introduced into the Croatian legal framework, until the spring of 2024, only one civil initiative managed to obtain a license to carry out activities, and that with the support of several experts and the expenditure of considerable financial and human resources.

Tariffs

In accordance with the law on the electricity market: tariff items for the transmission of electricity are applied at the calculation point of the owner of the share or a member of the citizen's energy community in accordance with the methodology for determining the amount of tariff items for the transmission of electricity and the decision on the amount of tariff items for the transmission of electricity and the tariff item for electricity distribution in accordance with the methodology for determining the amount of tariff items for electricity distribution and the decision on the amount of tariff items for electricity distribution.

The main obstacles related to energy communities of citizens refer to:

• legal form of citizens' energy communities – They must be legal entities acting on the basis of the law regulating the financial operations and accounting of non-profit organizations, which gives priority to associations while other models are excluded, and business itself becomes more difficult.

• geographical area of operation – They are established in the territory of only one local self-government, municipality or city, which due to the small number of inhabitants in the Republic of Croatia represents a big problem in the establishment itself. Also, energy sharing is possible only in the area of the same low-voltage substation and is not well defined.

• membership limitation – Only one local self-government unit can be a member of the energy community. The possibility of membership depends on the place of residence and the ownership of the connections, but it is not clearly defined whether it is a place of residence or residence. The rules on the participation of small and medium-sized enterprises and the restriction that an EZG member may not have 40% of the share owned by a legal entity of another share owner or member are unclear. Lack of experience working in non-profit organizations due to limiting membership to certain groups and groups.

• complicated and expensive procedures unsuitable for small organizations - Such expensive and complicated procedures create a big problem for small organizations and are by no means stimulating, but disincentive and even banal, such as, for example, entering the energy community in the EZG register maintained by the Agency, after the same Agency obtain a permit.

Big problems also arise due to the inconsistent definition of terms, which further complicate the unequivocal interpretation and application of the law. The best example of this is the types of customers, which are defined differently in different laws, and because of this, many ambiguities and entanglements arise and the participation of citizens in the energy transition is difficult.

Due to the better and faster implementation of the energy transition and the inclusion of citizens and energy communities in it, it is necessary to revise the aforementioned laws, and this primarily refers to:

- expansion of the area of activity of energy communities and expansion of membership opportunities
- abolition of unnecessary administrative regulations and procedures
- harmonizing the terminology with other laws and regulations and clearly defining the criteria

Although in October 2021, with the adoption of the Law on the Electricity Market, citizens' energy communities were introduced into the Croatian legislative framework, as legal entities whose members are natural or legal persons, including local self-government units, micro-enterprises or small enterprises, and which can also participate in the production of electricity from renewable energy sources, energy supply or sharing and on the electricity market, so far not a single energy community has been registered in Croatia.

The law also introduced restrictions, such as that they operate on the basis of the law regulating the financial operations and accounting of non-profit organizations and that they perform their activities on the basis of an issued license for energy activity, which is under the jurisdiction of the Croatian Energy Regulatory Agency and prescribes 18 documents and full-time employment professional worker's time.

Furthermore, the procedure for sharing energy with members of the energy community and related processes and costs, such as fees for using the distribution and transmission networks, are not yet clearly defined in Croatia, so in practice energy sharing is still not possible, nor is it known how much it will cost.

Citizens' interest in establishing energy communities in Croatia exists, but the legislative framework has been prepared but is not enforceable in practice. In addition to an insufficiently high-quality and unenforceable basic legislative framework, other technical documents, regulations and processes that should define in detail all the elements that are essential for the establishment, development and growth of energy communities in Croatia are missing or insufficiently well prepared.

PP6 KSENA - Slovenia

PP8 REDASP - Serbia

PP9 OER - Romania

PP11 DIT - Germany

PP12 NEK - Slovakia

SIX THINGS YOU SHOULD KNOW

According to the regulation on renewable energy sources, energy communities generally have to follow the same rules for protecting the rights of consumers as traditional energy suppliers. However, since the establishment of energy communities may require high financial investments, it is understandable that there may be additional barriers to entry or exit from the community, for example for consumers to become investors if they want to be supplied with such energy, or the length of time until this investment is made available to them. will return when they leave. Energy communities should clearly state these provisions on their websites and in their contracts.

In order for consumers to feel comfortable entering energy communities, and for communities to thrive, it is important that they guarantee some basic consumer rights. Consumers should:
• have access to clear and complete information before concluding the contract
• to be able to compare the offers of different energy communities through independent price comparison tools
• have access to effective ADR alternative dispute resolution systems
• have the right to change the supplier and guarantee that they will not be disconnected
• use a higher standard of customer service
• be sure that their data is handled in accordance with the provisions of the GDPR.

Ensuring the same rights and obligations guaranteed to consumers by traditional energy suppliers is beneficial for both parties: consumers are protected by a complete legal framework of their consumer rights, and energy communities can offer consumers more attractive products, thus increasing their profits.
1/ PROVIDE CLEAR PRE-CONTRACT INFORMATION AND CREATE A STANDARDIZED TEMPLATE FOR ENERGY COMMUNITY WEBSITES

Energy communities as organizations are very often "bottom-up", relying on volunteers to run the community, including creating and maintaining their websites. Energy community websites differ significantly in terms of information provided, ease of use and navigation. Among the best practices noted were in particular well-developed frequently asked questions (FAQ) sections and sample contracts for the consumer to sign. In the worst cases, they provided consumers with very limited information or were difficult to navigate. Consumer organizations recommend that a standard or voluntary code of conduct for energy community websites falls under the competence of the energy regulatory body, which would ensure that all pre-contractual information and other relevant information are easily accessible to consumers. As far as the pre-contractual information itself is concerned, energy communities have the same obligations as energy suppliers – to provide consumers with a clear overview of the key information of the offer, including the price, contract termination conditions and tariff change conditions.

2/ ENSURE THAT THE ENERGY COMMUNITY USES PRICE COMPARATORS

Although energy communities already offer electricity supply to consumers in many regions, they are often unaware of it because their offers are not listed in the places where consumers look for the best deals: in online price comparison tools, the so-called price comparators. It is in the interest of both energy communities and consumers that energy communities list their offers in available comparators and also ensure that the information is accurate and up-to-date. With the upcoming revision of the Electricity Directive, national regulatory authorities should create independent databases containing information on all offers available on the energy market. Suppliers - in this case energy communities - should be obliged to provide up-to-date information about their offer to these databases, and operators of price comparison tools should have free access to these databases. If the energy communities are no longer accepting members, they simply inform the relevant authority and they will remove the offer. In this way, communities can recruit new members and better inform consumers about the best prices on the market.

3/ PROVIDE CONSUMERS WITH INFORMATION ON HOW TO FILE A COMPLAINT AND RESOLVE DISPUTES

One of the most attractive aspects of the energy community is the fact that the will of the members often carries more weight and they have more decision-making power than in a traditional supplier-consumer relationship. In the case of disputes, there is often a tendency to resolve them internally, that is, within the community. However, disputes can and still do arise. The Electricity Directive requires suppliers to use an alternative dispute resolution system and guarantees consumers the right of access to out-of-court dispute resolution mechanisms such as the Energy Ombudsman.

As consumers in energy communities are legally entitled to the same consumer rights as non-members, the same rights to remedy and dispute resolution as in traditional supplier-customer relationships should be actively enforced within energy communities as well. This information must be readily available on the community's website, in the contract and on their

energy bills. Energy communities acting as suppliers should use alternative dispute resolution procedures where appropriate.

4/ ENSURE THAT CONSUMERS ARE INFORMED ABOUT CHANGES IN THE RELATIONSHIP WITH THE SUPPLIER AND THE POSSIBILITY OF DISCONNECTION

One of the less discussed aspects of energy communities is the different energy supplier-consumer relationship, compared to the traditional supplier-consumer relationship. On the one hand, the members of the energy community maintain their supplier-customer relationship, which guarantees them the right to change supplier according to the Electricity Directive. On the other hand, the members of the energy community also enter into the "member/investor" relationship, which is regulated by the legislation on commercial companies. The initial investment required from the member may discourage switching, and its return may be limited in order to protect the long-term operation of the energy community itself. Similar to the return of the investment from the company, in some cases the energy communities can introduce minimum periods for the return of the investment, which makes it difficult to change the supplier.

Although this may limit consumer rights, it is understandable that such protection may be necessary to ensure the economic sustainability of the community. However, energy communities should explain this situation in their contracts, and draw attention to it already in the pre-contractual information and on their websites.

The right to change the supplier is also associated with the fear of technical disconnection. The Council of European Energy Regulators (CEER) drew attention to examples of energy communities that are both distributors and suppliers of energy (eg heating networks or communities managing electricity networks). If these energy communities decide to exclude a member due to non-fulfillment of obligations, this also means disconnecting the consumer from the energy network.

In these cases, communities are subject to the same rules as distribution system operators or central heating system operators, which allow disconnection only under certain conditions. It is necessary to strengthen consumer protection, which would ensure that such disconnections do not occur at least in the winter months for the sake of protecting the health and well-being of consumers.

5/ ENSURE QUALITY SERVICES TO CUSTOMERS

As mentioned above, energy communities are often run by volunteers and many problems are often solved internally and democratically. However, as the number of energy communities grows, the question arises as to what level of service members of such energy communities can reasonably expect.

In Belgium, the energy community informed its members by e-mail that it had decided to end the supply of energy. After investing €1,000 in the community, its members were understandably concerned when they learned when they could get that money back. They had to ask for this information, finally received it by email, and more than six weeks later.

There are many complaints about the quality of customer service even in the case of traditional energy suppliers. However, electricity is a basic service, so energy communities should, like responsible energy suppliers, ensures a satisfactory minimum standard of these services.

6/ ENSURE COMPLIANCE WITH THE REGULATION ON THE PROTECTION OF PERSONAL DATA (GDPR) IN THE AREA OF DATA PROCESSING

Energy communities must use tools to collect information about members whose terms are in line with GDPR provisions. Consumers in the EU are guaranteed a very high level of personal data protection and privacy, therefore even energy communities should choose only services that comply with the GDPR.