

Overview of legal and regulatory framework - Update

Report D3.1

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Preface

SHAREs supports the set-up of new and the expansion of existing energy communities, as well as collective actions, by providing local heroes with the framework and communication tools to reach out to those without the time, resources, information or digital skills to be an early adopter.

This report provides an analysis on national legal definitions of energy communities, policies on foundation and expansion as well as contractual conditions with energy system actors for energy communities in different countries.

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1 | Executive Summary

Energy communities offer the unique opportunity for consumers to form a critical mass, become renewable energy producers and offer their demand flexibility to the market. Consequently, there is a clear need to support local heroes (i.e., those interested in setting up collective actions) in setting up energy communities and enable them to motivate and target consumers directly. However, there are many potential prosumers who lack the time, resources, and information to participate in and benefit from the energy transition. The objective SHAREs project is to cover a great variety of collective actions that will contribute to increased energy efficiency and/or optimised energy management and/or integrated a higher share of renewables. Thus, SHAREs support the set-up of new and the expansion of existing energy communities, as well as other collective actions by providing local heroes with the framework and communication tools to overcome these hurdles.

This report aims to provide comprehensive analysis of existing legal and regulatory framework in the context of energy communities/collective actions as well as the detailed procedures and requirements for operation in the partner countries. The beginning of the report provides details for the legal definition of energy communities in EU legislation as well as the focus of the SHAREs' project. At the same time, the report provides a summary on the legal and regulatory framework on energy communities and collective actions in the project partner countries based on a customized indicator to analyze the implementation and status of measures. According to the indicator, the overall progress in the partner countries can be evaluated as good, however in Georgia no actions are implemented yet in the context of energy communities/collective actions.

Furthermore, the report presents detailed information per partner country on existing energy market structures and their relevant legal and regulatory framework as well as a description of contractual relations for energy communities/collective actions. At the same time, respective support schemes existing in the partner countries are presented. Based on the information, support schemes in partner countries vary while the majority of such support schemes are financial.

Lastly, the report concludes that there are different stages of the development of legal and regulatory framework which creates obstacles for the large scale development of energy communities. Hence, a clear and stable regulatory framework is necessary to encourage local heroes to take actions for the benefit of the country.

2 | Introduction

2.1 The SHAREs project – an overview

The SHAREs objective is to cover a great diversity of collective actions, contributing towards increased energy efficiency and/or optimised energy management and/or integrate a higher share of renewables. Thus, the term energy communities in SHAREs refers to all forms of collective action by and for consumers such as cooperatives, collective purchase groups or other consumer-driven actions. In countries that have already transposed European law regarding energy communities, the focus lies on renewable and citizen energy communities. Through a mentoring scheme pioneers pass on their first-hand experiences to aspiring energy communities. This ensures that a strong network is built. In addition, pioneers are supported by the materials developed in the project. Minimum 20 emerging energy communities (pilots) directly supported in the six partner countries in setting up their energy community/collective action. Through their feedback, the materials developed in the project is tested and improved. The pilots cover various forms of energy communities in a broader sense, including a cross-border energy community between Austria and Hungary. Potential communities are key to make SHAREs a success and are approached through various multipliers in partner countries and on European Union (EU) level. The partners' strong national networks and European outreach ensures that the SHAREs Gateway can be strategically placed to reach the next local heroes founding their energy community. SHAREs supports local heroes in establishing/expanding their energy community by creating a country-specific platform (SHAREs Gateway), which consists of two parts:

- ▶ A country-specific implementation tool kit to equip local heroes with the technical and logistical capacity to set up their energy community (legal framework, model contracts, technical and IT solutions, business models, etc.);
- ▶ The building blocks of a tailored “pick-and-mix” communication campaign to enable local heroes to promote their energy community or collective action effectively to their most relevant consumer groups.

Rather than starting from scratch, SHAREs made the most of existing initiatives, project results, open-source solutions, existing data standards and national as well as European tools and compiled them into one single gateway. Where possible, SHAREs build upon existing platforms and initiatives. To ensure the applicability of the results in practice, SHAREs envisages regular input from and exchange with relevant policy makers. The SHAREs Gateway combines the knowledge and tools of existing initiatives with the input of established energy communities and policy makers. After being tested and improved in at least 20 energy communities in six European countries, the SHAREs Gateway is also made available to all relevant stakeholders across Europe.

2.2 Scope

Task 3.1 aims at delivering a country-specific overview of relevant legislation and regulations concerning energy communities. The overview is compiled based on publicly available information. The core of Task 3.1 is therefore mainly desk research and organisation of feedback from the policy-developer working groups and/or legal experts. The main goal of WP3 is to get a deep understanding of legislation and regulation to show all possibilities that energy communities have in their respective country, as the knowledge about national and international frameworks facilitates the identification of barriers (Task 3.2) and their elimination in the long term.

This report documents and provides an up to date analysis of national legal definitions of energy communities, policies on foundation and expansion as well as contractual conditions with energy system actors for energy communities in different countries, i.e. Austria, Bulgaria, Croatia, Germany, Georgia and Hungary.

2.3 Energy communities in the EU legislation

In accordance with the **Renewable Energy Directive (RED II)**¹, renewable energy community (REC) means a legal entity meeting the following criteria:

- ▶ Open and voluntary participation;
- ▶ Controlled by shareholders or members that are located “in the proximity” of the renewable energy projects owned and developed by the REC;
- ▶ The shareholders or members of which are natural persons, small and medium-sized enterprises (SMEs) or local authorities, including municipalities;
- ▶ The “primary purpose” of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits.

Article 22.2, RED II requires Member States (MSs) to ensure that RECs are entitled to:

- ▶ Produce, consume, store and sell renewable energy, including through renewables power purchase agreements;
- ▶ Share, within the renewable energy community, renewable energy that is produced by the REC
- ▶ Access all suitable energy markets both directly or through aggregation in a non-discriminatory manner.

The Internal Electricity Market Directive (IEMD) also provides a definition for energy communities in its Art. 2(11) stipulating that a citizen energy community (CEC) means a legal entity

- ▶ Based on voluntary and open participation;
- ▶ Effectively controlled by members or shareholders that are natural persons, local authorities, including municipalities, or small enterprises, and
- ▶ Providing environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits.

CECs may engage in generation, including from renewable sources, distribution, supply, consumption, aggregation, energy storage, energy efficiency services or charging services for electric vehicles or provide other energy services to its members or shareholders.

2.4 Community Energy in SHARES

2.4.1 “Local heroes”: who is supported by SHARES?

Consumer participation can take place at various levels. From top-down approaches, where local or regional authorities initiate community development activities with very low or no consumer participation, on the one

¹ DIRECTIVE (EU) 2018/2001 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 on the promotion of the use of energy from renewable sources

hand, to bottom-up approaches, where the community plays the active role in initiating and managing activities on the other hand.

The Clean Energy Package (CEP) puts the consumer in the driving seat of the energy transition and focuses on actions, where consumers take center stage. However, real bottom-up (grass-root) approaches in the energy sector are rare, because of the inherent complexity of energy systems. Secondly, people are notably risk-averse regarding to the topic of energy – it is not an issue where people like to experiment (Tretter & et al., 2020).

To overcome the barrier of high complexity and to enable replication and up scaling a combined top-down and bottom-up collective actions (**bottom-linked initiatives**) can be applied. Concretely this means that actions are embedded in local communities and implemented in cooperation with existing local networks (e.g. public municipal actors, energy managers, etc.). This partnership is a combined effort between the municipality/existing initiative/... and the community to carry out collective actions.

SHAREs recognizes that while consumers are at the heart of the future energy system, they face individual barriers when setting up energy communities and collective actions, such as lack of time, expertise or resources. Moreover, without the guidance of an engaged organisation/public authority/club/(group of) individuals, it is often hard to take steps on one's own.

Therefore, there is a clear need to support **local heroes** (i.e. those potentially interested in founding an energy community or setting up collective actions) in establishing their energy community and enable them to motivate and target consumers directly, including those who do not yet have an affinity for energy or are simply unfamiliar with the concept of energy communities.

Local heroes could be:

- ▶ Individuals linked to institutions (individuals from local authorities, municipalities, associations, clubs);
- ▶ Early adopters and front runners (individuals from the general public who want to become active);
- ▶ Investors (renewable energy project managers, real estate projects / managers, government funds, etc.);
- ▶ Professionals (energy advisors, installers, electricians, chimney sweepers).

2.4.2 “Energy communities”: which actions are supported by SHAREs?

The term energy community in SHAREs refers to all forms of collective actions **operated by a group of people (consumers)** such as renewable or citizen energy communities according to the EU acquis, cooperatives, collective purchase groups or other consumer-driven collective actions.

The SHAREs objective is to cover a great diversity of collective actions, as long as they contribute towards

- ▶ increased energy efficiency and/or
- ▶ optimised energy management and/or
- ▶ increasing the share of renewables

with the overall goal of reducing greenhouse-gas emissions.

Thus, SHAREs focuses on actions that are **consumer-driven, and are based on renewables, and/or improve energy efficiency or energy management.**

Actions aiming at **electricity consumption/production**, as well as at **heat consumption/production** are included. **Proximity is no requirement**, actions ranging from independent energy islands up to country-wide (e.g. peer-to-peer electricity sharing) communities, or even cross-border communities can be part of SHAREs. Furthermore, **all organisational forms** are welcome, like cooperatives, associations, or others. While generating financial

benefits for the members of the collective actions is a desirable output, as consumers should benefit from the energy transition, the focus of the action must not be on commercial profit generation (“non-profit” organisations).

Consumer participation in energy production and management should be the main emphasizes of the action, enabling a more active role of consumers in the energy system (e.g. by becoming prosumers, investors or even taking more active “care taking” roles for the community via co-creation and co-development or even co-management of initiatives). Furthermore, stakeholders/members should be enabled to effectively control the energy community.

Having given this very broad definition, it has to be added, that the project will focus on renewable or citizen energy communities according to the acquis in countries where European right has already been implemented.

3 | Summary

This section aims to provide summary information on legal and regulatory framework on energy communities and collective actions in the project partner countries. Figure below provides geographical landscape of project partner countries.

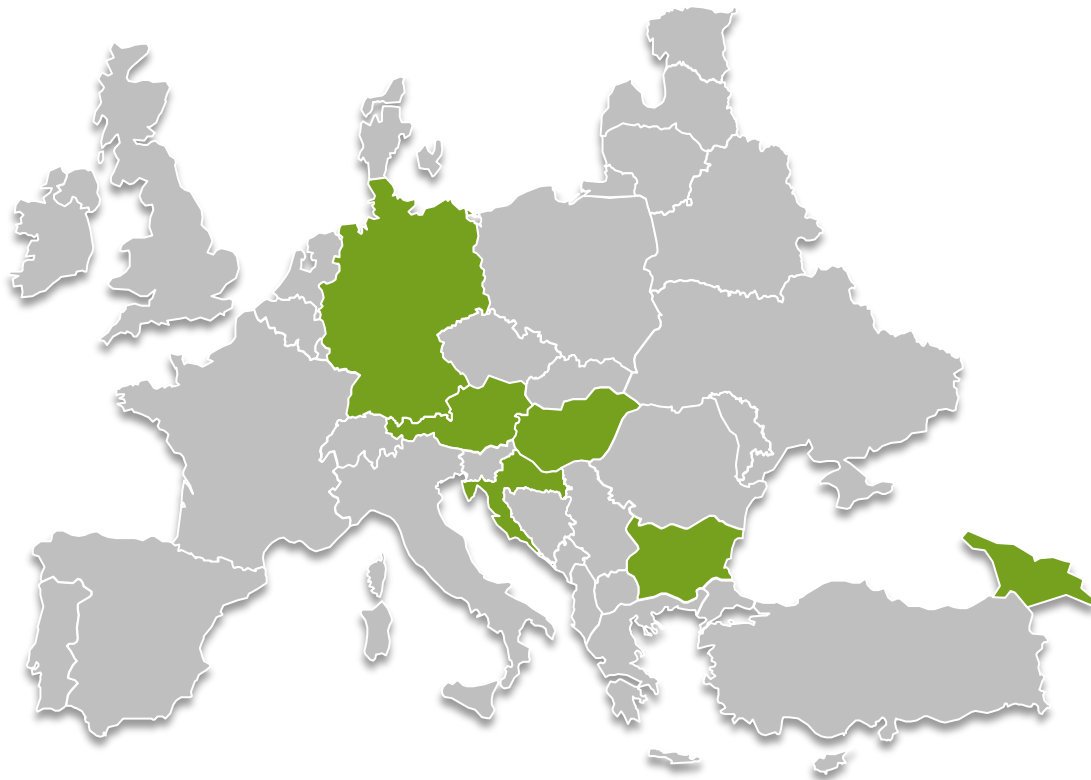
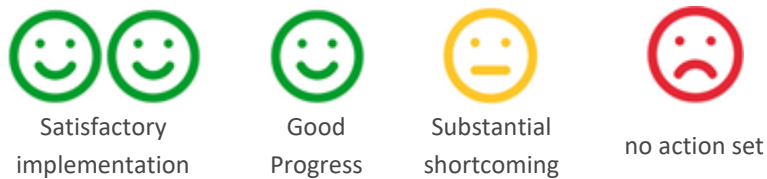


Figure 1: Overview of SHAREs partner countries (Source: AEA)

At the same time, the assessment of up to date enabling environment necessary for developing collective actions or energy communities is conducted which serves as the gap analysis of the respective areas where project partner countries still need to make improvements by the end of the project. For this purpose, overview of the situation in the project countries for the different areas is conducted for the period of second half of the project. It defines current stage of the specific areas in regard to enable establishment or promotion of existing collective actions and/or energy communities. For the purpose of overview, following indicators were applied:



3.1 Austria



Austria is a federal state (Bund) with certain legislative competences retained by the federal legislator, and others delegated to the nine federal states (Länder), which comprise Burgenland, Carinthia (Kärnten), Lower Austria (Niederösterreich), Salzburg, Styria (Steiermark), Tyrol (Tirol), Upper Austria (Oberösterreich), Vienna (Wien) and Vorarlberg.

In the run-up to the full liberalisation of the electricity market, a market model was developed for Austria based on the unbundling of the liberalised area (generation, electricity trading, and electricity supply) from the monopoly area (transmission, distribution). In the process, the settlement-related payment flows were also decoupled from the physical load flows. The main regulatory authority for the electricity sector is Energie Control Austria (E-Control), established by the Energie Control Act (Energie-Control-Gesetz 2010). E-Control is a public law institution with full legal capacity.

In Austria, overall, the European legislation, i.e. the RED II and the Electricity Market Directive (EMD), has been implemented to a high degree regarding energy communities. A framework facilitating active end consumers in line with EMD is missing, however. Two types of new energy market actors, RECs and CECs can be founded since end of July 2021, when the corresponding national legislation (EAG and ElWOG) entered into force. With the entry into force of the amendment to the System Charges Ordinance (on 01.11.2021), the reductions in grid charges for RECs were defined. All legal frameworks are in place to establish and operate a REC/CEC. CECs have got comparable limited incentives for being established. The first energy communities have been in operation since the end of 2021. The number of energy communities in Austria has risen almost exponentially since July 2021, reaching 1171 renewable energy communities and 147 citizen energy communities in 2024.

The formation of energy communities (ECs) under Austrian law may be organised in any form of legal entity, be it an association, a cooperative, or even a limited or stock company, as long as it consists of at least two members and is entitled to exercise rights and be subject to obligations in its own name. It should be noted that various support schemes (financial and technical) are present in order to promote energy community developments in Austria.

For potential members of ECs a participation in more than one energy community is possible too. Participation with a consumption or generation facility in more than one joint generation facility, CEC or REC is permitted from 1 January 2024. The market processes required for this went live on 8 April 2024. Multiple participation has been possible in practice since this date.



Already before the transposition of European legislation regarding energy communities, Austria had effective regulation on collective generation in place. The 2017 amendment to the Electricity Act introduced legal provisions concerning “collective generation plants” (“Gemeinschaftliche Erzeugungsanlage”), basically corresponding to the – in other countries also well-known – German “tenant electricity model”. This regulation made it possible to use roof areas of multi-party buildings in the sense of a prosumer approach. The intention was that tenants or owners of flats in apartment buildings, but also in office buildings or shopping centres, would join forces and money to operate a PV system together. Collective generation plants have not been attractive enough because of high supplier entry and administrative costs.







A Coordination Office for Energy Communities has been established in Austria, which serves as one-stop shop for the facilitation of energy community uptake, offering various services from info-work to mentoring and advocacy for RECs. Furthermore, current funding program of the Austrian Federal Climate and Energy Fund, which supports and monitors more than 40 RECs with different structures/compositions and progress in their

implementations, is an important part to collect and share concrete experiences from the specially funded pioneers.

The table below summarizes the assessment of current enabling environment necessary for development of collective actions or energy community.

Table 1: Summary of implementation assessment and status of measures related to energy communities in Austria

Indicators	Level of policy implementation	Market attractiveness	Comment
RED II and IEMD transposition			RED II and EMD have been transposed to a high degree. All legal frameworks are in place to establish and operate a REC/CEC. A framework facilitating active end consumers in line with EMD is missing, however, for example.
Structure and actors of the energy market			Within energy communities (EC) DSOs obliged to measure and share data to operate and settle an increased self-consumption of the EC are behind schedule. For potential members of ECs a participation in more than one energy community is possible too. The limited incentives available for RECs might be skimmed off by EC operation service suppliers (as for currently limited competition among such suppliers).
Legal framework for community energy and collective actions is in place			Collective generation plants (“tenant electricity model”) are possible but have not been attractive enough because of high supplier entry and administrative costs.
Contractual relations of community energy/collective actions			Contractual relations are well-established but still requires high administration and information efforts

Legal framework for energy communities			<p>All legal framework conditions are in place to establish and operate RECs/CECs. CECs have got comparable limited incentives for being established.</p>
Authorisation of RECs and CECs			<p>Authorization is possible in any reasonable legal form. There is still potential to accelerate further suitability areas and procedures for permitting larger generation facilities such as wind power and ground-mounted PV.</p>
Support Subsidy Schemes			<p>Relevant financial incentives beyond facilitating new green generation plants are available only for RECs (e.g. grid usage charge reductions). All energy cooperatives can get one-off investment subsidies for green generation plants and for energy generated and consumed within the EC the energy levy is exempted (1.5 Ct/kWh). RECs and CECs - opposite to all other beneficiaries - can get market premiums for larger wind parks for up to 50% of the annual electricity generation only. This may hamper the emergence of larger RECs (and CECs), as at least 50% of generation must be consumed simultaneously by its ECs members.</p>

The new Electricity Industry Act (EIWG) is currently awaiting to be passed by the Austrian parliament. It is intended to ensure a targeted expansion of the electricity grids and faster connection of solar power plants. Among other things, there should be more transparency about available grid connection capacities in future. It contains following points, among others:

- Introduction of the right to early installation of a smart meter, shortened installation and activation period
- Introduction of the term self-supplier
- Enabling peer-to-peer contracts
- Facilitation for energy communities

- Enabling flexible grid access by specifying a grid-active capacity
- Introduction of grid development plans for the distribution grid

3.2 Bulgaria



Bulgaria has great potential for renewable energy, which could be beneficial for the high share of energy poor and vulnerable groups once smart and sustainable financial schemes for the utilization of the local resources are implemented. As RED II directive has been transposed with significant delay in the country, the model of energy communities is not widespread. There are a few cases of collective action which are

mainly implemented by enthusiastic property owners using equity funds or grant schemes to realize solar heating and electricity generating measures in private multifamily buildings. Only two initiatives for community energy have been implemented in the recent year. The pioneering energy community in Bulgaria was spearheaded by the Municipality of Gabrovo, showcasing a diverse membership, and aiming to harness solar energy for local consumption. In contrast, “Izgrei.BG” born from a local water supply issue in Belozem village, exemplifies community-driven solutions led by citizens. Despite these two promising initiatives, several other projects are in their initial stages of development, progressing slowly. Given that the legal framework for RECs is relatively new to Bulgaria, increasing its acceptance among both citizens and businesses will require time.














The involvement of municipal administrations and municipal centres for administrative services is considered to play a pivotal role in supporting the process of REC establishment. Municipalities can be active participants in RECs while also acting as primary sources of information and assistance. However, to attain sufficient competence in this subject area, specialized training materials and sessions are essential for both municipal administration and other relevant stakeholders involved in the process.

RECs gained regulatory recognition and legal status in Bulgaria through the transposition of the RED II directive into the Bulgarian Renewable Energy Source Act on October 13th, 2023. However, both legal and regulatory framework as well as support schemes for collective action require further development in order to support implementation of community energy on a large scale, in particularly when it comes to energy sharing, smart meters integration, provision of correct incentives for the participants and avoidance of corporate capture over the models of citizens energy.

The energy market structure is in a process of liberalization. Currently, two segments are functioning - a segment with regulated prices and a segment with freely negotiated prices, or the so-called free market. In the regulated segment, the prices of electricity are determined by the Energy and Water Regulatory Commission. Only household consumers have the opportunity to buy electricity at regulated prices being served by end suppliers, which are regional monopolies licensed by the Regulator. They can choose to enter the free market as well. On the other hand, in the free market, energy trade can take place between producers, network operators, energy traders and consumers (mainly industrial consumers and small businesses). Since 2015, no new subsidies have been provided for renewable electricity or combined heating and power installations, except for small rooftop solar photovoltaic installations up to 30kW. All renewable energy and co-generation power plants with installed capacity of 500 kW or more have the obligation to sell their electricity only via the power exchange IBEX.

The table below summarizes the assessment of current enabling environment necessary for development of collective actions or energy community.

Table 2: Summary of implementation assessment and status of measures related to energy communities in Bulgaria

Indicators	Level of policy implementation	Market attractiveness	Comment
RED II and IEMD transposition			RED II and IEMD transposed with delay in 2023, however copying formulation of EU legislation without advancing on national-specific issues.
Structure and actors of the energy market			The energy market structure is in process of liberalization which still requires further development and enhancement, in order to enable active participation of energy communities in the energy market.
Legal framework for community energy and collective actions is in place			Respective legal framework in place, legal practice missing as well as not all benefits can be deployed due to some regulatory bottlenecks
Contractual relations of community energy/collective actions			Respective contractual relations framework is not in place.
Legal framework for energy communities			Respective legal framework to establish and operate RECs/CECs in place, legal practice missing, no good practices from other EU countries observed.
Authorisation of RECs and CECs			In general authorization is possible, but Register is missing
Support Subsidy Schemes			Financial incentives are not in place yet, only schemes for technical assistance.

3.3 Croatia



In Croatia RED II and IEMD requirements on energy communities has been transposed in 2021. Energy communities, as a defined term, have been introduced in the Croatian legislative system in 2021 through two new laws, that were amended in July 2023. Law on Electricity Market (Official Gazette nr 111/21, 83/23) transposes IEMD requirements. On the other hand, Law on Renewable Energy Sources and High-Efficiency Cogeneration (Official Gazette nr 138/21, 83/23) transposes RED II

requirements. These two documents only tackle the basics of the energy communities and its functions but still opens the front door for the development and implementation of projects in a different way and encourage the implementation of, so-called, citizen energy projects. However, some provisions still represent significant barriers for the establishment of energy communities and some parts of bylaws are still missing. Furthermore, a dedicated support mechanism, including both financial and technical aspects that can help energy communities to emerge, is still missing.













Previously, most activities related to energy collective actions and inclusion of citizens in investments in Croatia were initiated through energy cooperatives and crowdfunding campaigns. Energy cooperatives represent associations of individuals, companies, public institutions, local governments connected according to the key location. These stakeholders develop renewable energy projects together which contribute to the reduction of investment risk and the sharing of project profits.

Energy communities, and their establishment, in Croatia are still in the early stage of development. First and only citizen energy community was formally registered in April 2024, with only 4kW installed PV power with main aim of testing real time energy sharing software and hardware.

Over the past three years, and especially with the amendments to the laws in 2023, some improvements to legal and regulatory framework have been made, and testing of the existing legislative framework has begun from various initiatives in Croatia. Key stakeholders and decision makers are becoming more aware of existing barriers, what could hopefully lead to a greater number of established energy communities in the next months. The table below summarizes the assessment of current enabling environment necessary for development of collective actions or energy community.

Table 3: Summary of implementation assessment and status of measures related to energy communities in Croatia

Indicators	Level of policy implementation	Market attractiveness	Comment
RED II and IEMD transposition			RED II and IEMD has been transposed already; significant administrative and regulatory barriers remain, making the

			process costly and too complex for citizens.
Structure and actors of the energy market			Energy market structure enables participation of energy communities in the energy market. However, there is still potential to accelerate their active participation via removal of remaining barriers.
Legal framework for community energy and collective actions is in place			Collective actions are still primarily implemented through energy cooperatives and crowdfunding campaigns. 1 CEC has been formally registered due to complex and costly administrative requirements.
Contractual relations of community energy/collective actions			Proper contractual relations are not in place. There are overlaps between key legislation and there are no publicly available templates or guidance.
Legal framework for energy communities			Legal framework is formally enabling set up of CEC and REC, however, the process is costly and complex thus not accessible to citizens.
Authorisation of RECs and CECs			The process of formally registering REC and CEC requests obtaining permit from the regulator, which requires proof of financial, technical and expert capacity, including the obligation of each CEC/REC to have 1 fully time employee, regardless of their size, scope of action and type of project/service they are delivering
Support Subsidy Schemes			There are still no support schemes in place. They are expected in the forthcoming period.

3.4 Germany



In Germany RED II and IEMD directives have not been completely transposed yet. However, Energy Communities and collective actions follow a trend that is becoming increasingly important for consumers. The German Renewable Energy Sources Act (EEG) which was implemented in 2000 promotes electricity from wind energy, solar energy, biomass, hydropower, and geothermal energy and also sets out a framework for “Citizens’ Energy Companies”.

Citizen participation requires openness on the part of municipal decision-makers and planners. Because it can happen that politically made decisions are not only questioned, but even overturned. Many municipalities are taking the expansion of

renewable energies into their own hands and involving their citizens in the process. They support the local people to participate ideally or financially in plants or even to operate them themselves.















Energy cooperatives are becoming increasingly popular as a form of organisation. This is because cooperatives offer a wide range of opportunities for action and design. The central guiding principle is that each member has only one vote. Projects can be implemented democratically and locally with many equal partners.

Involvement of municipalities and citizens in the energy transition plays a very special role. Transparency, open communication, genuine financial participation offers, or the support of citizen projects are success factors to ensure acceptance. The possibilities for municipalities and citizens to shape local energy policy are manifold: they can lie in the construction and operation of wind, solar or biogas plants and in the self-supply of homeowners or neighbours via private rooftop solar systems. Other possibilities are the participation of citizens in larger wind or solar parks through climate protection bonds or funds, through shares in a municipal company or an energy cooperative. Cooperation between cooperatives and local authorities is also becoming increasingly important in the area of renewable heat supply. Citizens can thus actively participate in the energy transition and contribute to climate protection. Last, but not least, shares in local and regional energy projects are an attractive investment and investment opportunity.

Citizen energy thus ensures acceptance of individual energy transition measures, promotes the diversity of actors and citizen participation, and strengthens the regional anchoring of energy transition measures. The table below summarizes the assessment of current enabling environment necessary for development of collective actions or energy community.

Table 4: Summary of implementation assessment and status of measures related to energy communities in Germany

Indicators	Level of policy implementation	Market attractiveness	Comment
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RED II and IEMD transposition			RED II and EMD have not been transposed completely yet.
Structure and actors of the energy market			Energy market structure enables participation of energy communities in the energy market. However, there is still potential to accelerate their active participation.
Legal framework for community energy and collective actions is in place			Citizens' Energy Companies and energy cooperatives ensures active participation of German citizens in the collective actions.
Contractual relations of community energy/collective actions			Contractual relations are well-established.
Legal framework for energy communities			Necessary legal framework conditions are not in place to establish and operate RECs/CECs. Especially the option to share self-produced energy with members of the community through the public grid is still not possible.
Authorisation of RECs and CECs			While authorization is possible, there is still need to further develop rules and procedures.
Support Subsidy Schemes			RE source are largely support

3.5 Georgia






In Georgia, IEMD and RED II regulations have not been transposed yet. Georgia as a full member of the European Energy Community has committed itself to transpose the third energy package and respective regulations according to its accession protocol to the Energy Community. It should be noted that the Energy Community



Ministerial Council adopted the Clean Energy for all Europeans Package in late November 2021. However, the transposition of IEMD and RED II has not been done yet.

The legal and regulatory framework in Georgia is underdeveloped in regard to energy communities and collective actions of self-consumers. The Georgian primary and secondary legislation are based on the third energy package provisions. Collective actions of self-consumers using micro generators up to 500 KW is feasible in Georgia as the Law on Energy and Water Supply and GNERC regulations contain respective rules and regulations. Net metering regulation is the only mechanism used. Although it is not the most efficient and market-oriented mechanism, it provides a minimum framework for end users to utilise benefits of micro-generation monetary.

Despite abovementioned, Georgia faces major updates of its energy legislation in terms of energy communities and collective actions of self-consumers. Table below summarizes the assessment of current enabling environment necessary for development of collective actions or energy community.

Table 5: Summary of implementation assessment and status of measures related to energy communities in Georgia

Indicators	Level of policy implementation	Market attractiveness	Comment
RED II and IEMD transposition			RED II and EMD has not transposed yet.
Structure and actors of the energy market			The energy market structure is in the process of liberalization which still requires further development and enhancement, in order to enable active participation of energy communities in the energy market.

Legal framework for community energy and collective actions is in place			Respective legal framework is not in place.
Contractual relations of community energy/collective actions			Respective contractual relations framework is not in place.
Legal framework for energy communities			All legal framework conditions are not in place to establish and operate RECs/CECs.
Authorisation of RECs and CECs			In general authorization is possible but requires further development of legal framework
Support Subsidy Schemes			Net metering support scheme is possible to be used. However, other market based financial incentives need to be further developed.

3.6 Hungary









In Hungary, IEMD and RED II have been transposed by the amendment of the existing national legislation governing the national electricity market and heating/cooling. At first, REC has been defined as a sub-type of CECs in the national law and the scope of its activity is limited to electricity which was extended to heating and cooling by the 1st of January 2024. Furthermore, several amendments entered into force in 2024 pertaining to electricity sharing and gross settlement.

Hence, relevant gaps in the legislation concerning their establishment and operation should still be filled. The possibility to produce and consume renewable electricity by customers has already been regulated by the VET under the term of household sized power plants which is a micro power plant connected to a low voltage system with an interconnection capacity of less than 50 kVA at any given connection point.

It should be noted that various support schemes are available for consumers aiming to establish collective actions. However, recently, there is no advantage for a community energy initiative to register as an energy community and, therefore, no incentive. In addition to subsidies, specific financial measures need to be rethought and dismantled to promote community energy more effectively. The table below summarizes the assessment of current enabling environment necessary for development of collective actions or energy community.

Table 6: Summary of implementation assessment and status of measures related to energy communities in Hungary

Indicators	Level of policy implementation	Market attractiveness	Comment
RED II and IEMD transposition			On a certain level, RED II and EMD have been already transposed. In the field of electricity, REC has been defined as a sub-type of CECs in the national law and the scope of its activity is limited to electricity. On the other hand, since 2024, RECs might be established in the field of heating and cooling as well, although the specific rules are still missing.
Structure and actors of the energy market			The legal framework of energy market structure would enable active participation of energy communities in the energy market, but other actors are not motivated to cooperate with energy communities.
Legal framework for community energy and collective actions is in place			As a prerequisite for collective actions, sharing of electricity is

			defined by law; however, it is not regulated in detail.
Contractual relations of community energy/collective actions			Specific rules on contractual relations for energy communities or collective actions have not been adopted yet. The existing contractual schemes on electricity market can be applied that requires high administration and information efforts.
Legal framework for energy communities			In general, legal framework conditions are in place to establish and operate RECs/CECs in the field of electricity and establish REC in the area of heating and cooling.
Authorisation of RECs and CECs			Authorization is possible in certain legal forms. CEC/REC must ensure compliance with the relevant rules of civil law. Authorization of RECs in heating and cooling is not regulated yet in detail.
Support Subsidy Schemes			In practice, call for applications supporting establishment of pilot energy communities are available, but long term financial measures supporting CECs/RECS in particular are not in place and the state-determined public utility prices or high taxes hinder the uptake of such collective actions.

4 | Austria

4.1 Introduction

In Austria, overall, the European legislation regarding energy communities, i.e. the actual Renewable Energy Directive (RED II) and the Internal Electricity Market Directive (IEMD²), has been implemented already. The applicable electricity network area and support schemes for RECs and CECs are quite different (see below). This report is not an evaluation of the degree of implementation in all various dimensions EU would look at for a transposition assessment, however. The following chapters describe the recent framework conditions according to both, the framework already existing before the mentioned EU law packages and the national legislation transposing the mentioned European law packages.

National transposition of EU REC/CEC legislation

The Austrian implementation of the legal basis for RECs is regulated in Part 6 of the **Renewable Energy Expansion Act** (EAG) and in the **Electricity Industry and Organisation Act** (EIWOG) § 16c. Common provisions that apply to both renewable energy communities (RECs) and citizens' energy communities (CECs) are laid down in EIWOG § 16d and § 16e. The Austrian Law Package for the EAG and EIWOG enables the creation of renewable energy communities. It implements Art. 22 of Directive (EU) 2018/2001.

Status:

- ▶ The EAG was passed by the National Council on 07 July 2021 and published in the Federal Law Gazette on 27 July 2021.³
- ▶ The EIWOG was published in the Federal Law Gazette on 27 July 2021.⁴
- ▶ Both, the EAG and the EIWOG provisions relevant for RECs thus entered into force on 28 July 2021.

Reporting:

- ▶ The Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) has to provide an evaluation report for the EAG law package until 31 December 2023, including the status of implementation of renewable energy communities (RECs). The report is still in progress.
- ▶ The NRA (E-Control) has to produce a cost/benefit analysis at the end of 2024 assessing if the contribution of RECs to the system costs, including in particular balancing energy costs is appropriate and equitable. The report will provide input to potential adjustments to the EAG law package.

The Electricity Industry and Organisation Act (EIWOG) currently regulates the grid-bound supply of electricity. A successor regulation is expected to come into force in 2024 – and take into account the transformation of the sector towards renewables. The meant new Electricity Industry Act (EIWG) is currently under review. It is intended to ensure a targeted expansion of the electricity grids and e.g. a faster connection of solar power plants.

² Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU

³ <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20011619>

⁴ <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007045>

Among other things, there should be more transparency about available grid connection capacities in future. The new law serves to implement the EU's Internal Electricity Market Directive 2019/944 and the Renewable Energy Directive 2018/2001. A two-thirds majority is required in Parliament.

4.1.1 List of relevant laws and regulations

The Austrian implementation of the legal basis for RECs is regulated in Part 6 of the Renewable Energy Expansion Act (EAG) and in the Electricity Industry and Organisation Act (EIWOG) § 16c. Common provisions that apply to both renewable energy communities (RECs) and citizens' energy communities (CECs) are laid down in EIWOG § 16d and § 16e. The Austrian Law Package for the EAG and EIWOG enables the creation of renewable energy communities. It implements Art. 22 of Directive (EU) 2018/2001.

All requirements for a “community generation facility”, enabling e.g. the so-called tenant electricity model, are summarised in the EIWOG § 16a. This Austrian legislation related to community generation facilities has been existing before the RED II and IEMD law packages were passed.

Here is the list of relevant laws and regulations:

- ▶ Federal Act Providing New Rules for the Organisation of the Electricity Industry (Electricity Industry and Organization Act 2010 – EIWOG 2010), Bundesgesetz, mit dem die Organisation auf dem Gebiet der Elektrizitätswirtschaft neu geregelt wird (Elektrizitätswirtschafts- und -organisationsgesetz 2010 – EIWOG 2010) StF: BGBl. I Nr. 110/2010 (NR: GP XXIV RV 994 AB 997 S. 86. BR: 8420 AB 8421 S. 791.) [CELEX-Nr.: 32004L0008, 32006L0032, 32008L0027, 32009L0072, 32009L0714]
<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007045>
- ▶ Renewable Energy Expansion Act, Bundesgesetz über den Ausbau von Energie aus erneuerbaren Quellen (Erneuerbaren-Ausbau-Gesetz – EAG) StF: BGBl. I Nr. 150/2021 (NR: GP XXVII RV 733 AB 982 S. 115. BR: 10690 AB 10724 S. 929.) [CELEX-Nr.: 32018L2001, 32019L0944, 32019L0692]
<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20011619>
- ▶ Federal Act Providing New Rules for the Natural Gas Sector (Natural Gas Sector Act 2011 – GWG 2011), Bundesgesetz, mit dem Neuregelungen auf dem Gebiet der Erdgaswirtschaft erlassen werden (Gaswirtschaftsgesetz 2011 – GWG 2011) StF: BGBl. I Nr. 107/2011 (NR: GP XXIV RV 1081 AB 1128 S. 124. BR: 8581 AB 8593 S. 801.)
<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007523>
- ▶ Heating and Cooling Network Expansion Act, Wärme- und Kälteleitungsausbaugesetz – WKLG, Bundesgesetz, mit dem die Errichtung von Leitungen zum Transport von Nah- und Fernwärme sowie Nah- und Fernkälte gefördert wird
<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005917>
- ▶ Federal Act on the Regulatory Authority for Electricity and Natural Gas (E-Control Act – E-ControlG), Energie-Control-Gesetz – E-ControlG, Bundesgesetz über die Regulierungsbehörde in der Elektrizitäts- und Erdgaswirtschaft (Energie-Control-Gesetz – E-ControlG)
<http://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007046>
- ▶ Energy Emergency Powers Act 2012, Energielenkungsgesetz 2012 – EnLG 2012, Bundesgesetz über Lenkungsmaßnahmen zur Sicherung der Energieversorgung (Energielenkungsgesetz 2012 – EnLG 2012)
<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20008276>
- ▶ Energy Infrastructure Act, Energie-Infrastrukturgesetz – E-InfrastrukturG, Bundesgesetz zur Durchführung der Verordnung (EU) Nr. 347/2013 zu Leitlinien für die europäische Infrastruktur
<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20009484>

- ▶ Federal Energy Efficiency Act, Bundes-Energieeffizienzgesetz – EEffG, Bundesgesetz über die Steigerung der Energieeffizienz bei Unternehmen und dem Bund (Bundes-Energieeffizienzgesetz – EEffG <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20008914>)
- ▶ Austrian Other Market Rules for the electricity sector, Sonstige Marktregeln Strom (SoMa) <https://www.e-control.at/recht/marktregeln/sonstige-marktregeln-strom>
- ▶ Federal Act on Environmental Impact Assessment (Environmental Impact Assessment Act 2000 – UVP-G 2000), Bundesgesetz über die Prüfung der Umweltverträglichkeit (Umweltverträglichkeitsprüfungsgesetz 2000 – UVP-G 2000), StF: BGBl. Nr. 697/1993 (NR: GP XVIII RV 269 AB 1179 S. 131. BR: 4639, AB 4624 S. 574.) [CELEX-Nr.: 385L0337] <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010767>

4.1.2 Structure and actors of the energy market

Austria is a federal state (Bund) with certain legislative competences retained by the federal legislator, and others delegated to the nine federal states (Länder), which comprise Burgenland, Carinthia (Kärnten), Lower Austria (Niederösterreich), Salzburg, Styria (Steiermark), Tyrol (Tirol), Upper Austria (Oberösterreich), Vienna (Wien) and Vorarlberg.

Sources of chapter 4.1.2: Chambers and Partners, London, United Kingdom⁵ and Austrian Energy Agency

4.1.2.1 Legislators and regulators of the Austrian energy market

The principal law governing the ownership and structure of the power industry is the federal state-level Electricity Industry and Organisation Act (Elektrizitätswirtschafts-und-organisationsgesetz 2010, or EIWOG 2010). The EIWOG implements the third energy package of the EU, which is designed to liberalise the electricity markets of individual EU member states. The EIWOG sets out provisions on the operation of electricity networks; the rights and obligations of network operators, specifically third-party network access; the unbundling of transmission system operators; the operation of transmission networks and the conditions for concessions to operate distribution networks; and the determination of system usage tariffs.

While the EIWOG is a federal act, some of the EIWOG provisions delegate authority to the federal provinces to enact state-specific legislation regarding certain aspects of the electricity sector. The main state-level acts are:

- ▶ the Burgenland Electricity Act ([Burgenländisches Elektrizitätswesengesetz 2006](#))
- ▶ the Carinthian Electricity Management and Organisation Act ([Kärntner Elektrizitätswirtschafts-und-organisationsgesetz 2011](#))
- ▶ the Lower Austrian Electricity Act ([Niederösterreichisches Elektrizitätswesengesetz 2005](#); NÖ ELWG)
- ▶ the Upper Austrian Electricity Management and Organisation Act ([Oberösterreichisches Elektrizitätswirtschafts-und-organisationsgesetz 2006](#))
- ▶ the Salzburg State Electricity Act ([Salzburger Landeselektrizitätsgesetz 1999](#))

⁵ <https://practiceguides.chambers.com/practice-guides/alternative-energy-power-2021/austria/trends-and-developments/O8528>

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- ▶ the Styrian Electricity Management and Organisation Act ([Steiermärkisches Elektrizitätswirtschafts- und organisationsgesetz 2005](#))
 - ▶ the Tyrolean Electricity Act ([Tiroler Elektrizitätsgesetz 2012](#))
 - ▶ the Viennese Electricity Management Act ([Wiener Elektrizitätswirtschaftsgesetz 2005](#))
 - ▶ the Vorarlberg Electricity Management Act ([Vorarlberger Elektrizitätswirtschaftsgesetz 2014](#))

The Federal Constitutional Law that regulates ownership in Austrian Electricity Market Companies ([Bundesverfassungsgesetz, mit dem die Eigentumsverhältnisse an den Unternehmen der österreichischen Elektrizitätswirtschaft geregelt werden](#), or the Constitutional Law on Ownership) sets out the minimum state ownership of listed energy companies. This adopts provisions from the second Electricity Market Nationalization Law ([Bundesgesetz über die Verstaatlichung der Elektrizitätswirtschaft](#)), which originated in 1947 as a basic law with non-constitutional status. As such, these nationalization provisions are afforded constitutional status.

Annex 3 of the Constitutional Law on Ownership sets out that the following state energy companies (*Landesenergiegesellschaften*) must be at least 51% in the ownership of one of the nine relevant states or an entity that is at least 51% in the ownership of one of the nine relevant states:

- ▶ Burgenländische Elektrizitätswirtschafts Aktiengesellschaft (Burgenland)
- ▶ Kärntner Elektrizitäts-Aktiengesellschaft (Carinthia)
- ▶ EVN Energieversorgung Niederösterreich AG (Lower Austria)
- ▶ Oberösterreichische Kraftwerke AG (Upper Austria)
- ▶ Salzburger Aktiengesellschaft für Energiewirtschaft (Salzburg)
- ▶ Steirische Wasserkraft- und Elektrizitäts-Aktiengesellschaft (Styria)
- ▶ Tiroler Wasserkraftwerke AG (Tyrol)
- ▶ Vorarlberger Kraftwerke AG (Vorarlberg)
- ▶ Wiener Stadtwerke Elektrizitätswerke Wienstrom (Vienna)

Those nine state majority owned energy utilities or their unbundled offsprings, owning and operating the regional electricity grids, respectively, play an important role with respect to energy communities (see below, under sub-chapter distribution of electricity).

Full liberalisation

In the run-up to the full liberalisation of the electricity market, a market model was developed for Austria based on the unbundling of the liberalised area (generation, electricity trading, and electricity supply) from the monopoly area (transmission, distribution). In the process, the settlement-related payment flows were also decoupled from the physical load flows.

Federal Regulatory Body of the Austrian Electricity and Gas Market

The main **regulatory authority for the electricity sector is Energie Control Austria** (E-Control), established by the Energie Control Act ([Energie-Control-Gesetz 2010](#)). E-Control is a public law institution with full legal capacity.

The main aims of E-Control are:

- ▶ the promotion of a competitive, secure and environmentally sustainable internal market in electricity and natural gas;
- ▶ the effective opening-up of the market to all EU customers and suppliers;

- ▶ to ensure the right conditions for the effective and reliable operation of electricity and gas networks, taking into account the long-term objectives;
- ▶ the development of competitive and functioning regional markets in the EU;
- ▶ to lift existing restrictions on electricity and gas trade between EU member states;
- ▶ to ensure that network operators and network users have appropriate incentives, both short- and long-term, to increase network efficiency and promote market integration;
- ▶ to implement measures ensuring that customers benefit from the efficient functioning of the national market, promoting effective competition and contributing to consumer protection; and
- ▶ to ensure the integrity and transparency of the wholesale energy market.

4.1.2.2 Electricity market structure

In Austria, currently more than 70% of the electricity generated originates from renewable sources. Due to its topographic location, hydropower (both run-of-the-river and (pumped) storage) and wind are the two main renewable energy sources in Austria.

Generation

The main generation companies in Austria are Verbund AG (51% state-owned), EVN AG (51% owned by the state of Lower Austria) and Wien Energie GmbH (indirectly owned by the City of Vienna). In April 2020, the Austrian power provider Verbund shut down its last coal-fired district heating plant as planned.

Electricity grid infrastructure

The continuous flow of electricity – i.e. the supply of electrical energy at all times –, requires a complex infrastructure:

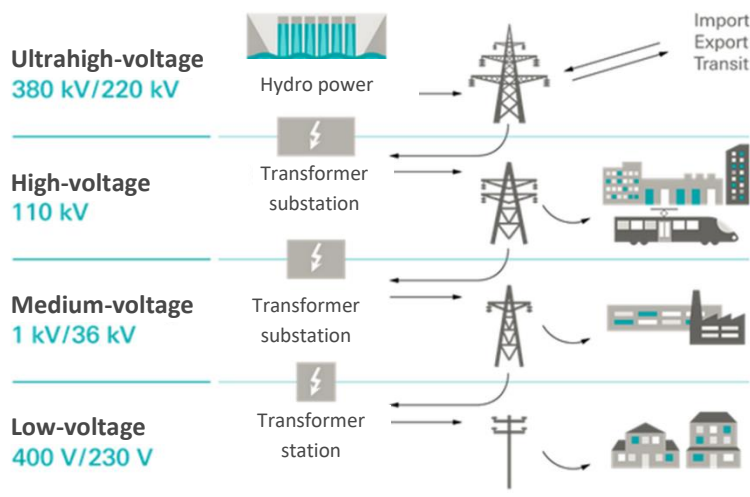


Figure 2: Voltage levels of the Austrian electricity grid infrastructure.

Source: Verbund AG, taken from verbund.com/de-at/privatkunden/themenwelten/strom-aus-wasserkraft/stromnetz, translated by AEA

- ▶ The highest level is the ultra-high voltage level with voltages from 220 kV to 380 kV. Large power plants feed in at this level, where electricity is transmitted over long distances. This is also referred to as the transmission grid.

- ▶ Via the high-voltage grid, electricity is distributed to a few large consumers such as industrial plants, whereas medium-sized power plants feed their electricity into it.
- ▶ On the medium-voltage level, individual cities are supplied. Urban power plants also feed energy into this level and industrial customers take energy from it.
- ▶ The distribution grid is the connection between power plants or the transmission grid and end consumers. It includes substations, medium-voltage grids, transformer stations and low-voltage grids where e.g. household customers draw their electricity. Here, too, there are electricity suppliers such as owners of a photovoltaic system – so-called prosumers.

According to E-Control, in Austria about 7,000 km of [power lines](#), or 3,500 km of power routes, respectively of the supra-regional transmission grid system operator (TSO), Austrian Power Grid (APG), as well as about 260,000 km of grid on several grid levels of the DSOs ensure that electricity can flow to all customers.

Main importing country – termination of the common electricity price zone with Germany

From the 1990s until 1st October 2018, Austria and Germany shared a single electricity market with a common price zone, whereby electricity was traded freely between the two countries.

In an effort to ease grid congestion caused by poor north-south electricity interconnectors within Germany, as of 1st October 2018, an upper limit of 4,900 MW was placed on the amount of electricity that could be traded between Austria and Germany (more than 10 GW were possible before). This, however, prevented the physical delivery of power traded and caused surges of electricity destined for Bavaria and Austria, through neighbouring countries such as the Czech Republic and Poland. A complaint was lodged with the Agency for the Cooperation of Energy Regulators (ACER), which, in its binding decision in 2016, decided that the common price zone be split.

As Austria depends on electricity imports from Germany, Austrian wholesale electricity prices have increased because of this decision. Germany is currently promoting the development of further north-south electricity interconnectors that should alleviate the grid congestion. Their construction is expected to take a number of years.

Transmission System Operators (TSOs)

Austria's main transmission system operator is the Austrian Power Grid AG (APG), which is responsible for the transmission system across eight of the nine Austrian states. APG is a 100% subsidiary of Verbund AG; however, APG is functionally unbundled from Verbund as an independent transmission system operator (ITO). Key requirements of this unbundling are the complete separation of the personnel, information technology and communication sectors, a ban on shared services and the strict regulation of the relationship of APG management with respect to Verbund AG.

In the federal province Vorarlberg, the transmission system is operated by the Vorarlberger Übertragungsnetz GmbH (indirectly owned by the federal province of Vorarlberg).

Distribution System Operators (DSOs)

The main DSOs in Austria are the provincial electricity companies – e.g., Wiener Netze, Netz Niederösterreich, Netz Oberösterreich, Netz Burgenland, Salzburg Netz and Energienetze Steiermark – which are mostly directly or indirectly owned by the respective states.

According to E-Control, there are currently 122 [electricity DSOs active](#) in Austria, each of which is responsible for the distribution of electrical energy in its grid area, i.e. a geographically specified part of Austria.

Role of TSOs and DSOs

The task of the network operators in the electricity system is to grant network users access to the network under general conditions approved by the authorities, for which the customers have to pay prescribed system usage tariffs to the network operators.

DSOs in general are responsible for the construction, maintenance and servicing of the electricity grid as well as for the connection to the grid in the case of a new building, the repair of faults and all services related to the electricity meter, such as installation, maintenance or reading.

Who is the responsible grid operator, in each case solely depends on the address of the location in question. Accordingly, grid operators cannot be chosen at will; they have a so-called natural monopoly. The fees that grid operators are allowed to charge for their system services are set by ordinance.

Principal laws governing the provision of transmission service, regulation of transmission charges and Terms of Service

The provision of transmission services is primarily governed by the EIWOG, whereby E-Control as regulator must determine the tariffs according to the system usage charges regulation ([Systemnutzungsentgelte-Verordnung](#)). Regarding network access charges, the EIWOG entitles the transmission system operator to charge the costs incurred in the construction, operation and maintenance of the transmission system.

Establishment of transmission and distribution charges and Terms of Service

Pursuant to the EIWOG, transmission as well as distribution charges cover the costs incurred by a network operator for the operation and maintenance of the network. The EIWOG implements Directive 2009/72/EC, which sets out the **principles of non-discriminatory** terms and tariffs for access and usage of the transmission and distribution network and of setting pre-approved tariffs. All network users connected to the transmission network are charged a fixed tariff for the transmission of electricity, set by E-Control, dependent on the voltage level.

Open-access transmission, or distribution service, respectively

Under the EIWOG, both transmission and distribution network operators are obliged to grant network access to those entitled to network access according to the approved general conditions, subject to certain system-user charges. The EIWOG implements Directive 2009/72/EC, which sets out the principle of non-discriminatory third-party access to transmission networks.

A network operator may refuse network access in whole or in part only in case of exceptional network conditions, in case of lack of network capacity, or if electrical energy from designated combined heat and power plants or from renewable energy installations would otherwise be displaced, despite the current market prices, in effect prioritising the sale of this electricity to third parties.

Electricity supply

According to the Austrian regulator, E-Control, there are currently over 30 [electricity suppliers](#) active in Austria. The main suppliers include Verbund AG (as above, 51% state-owned) and individual state companies, which are constitutionally at least 51% owned by local authorities or companies in which local authorities hold at least 51% ownership.

Balance group model

In the so-called balance group model, energy suppliers and end customers are combined into virtual groups. For each balance group there is a balance group manager who represents the balance group externally and is responsible for balancing the energy input and energy consumption within and import into the balance group. The balance responsible party acts based on general terms and conditions which have to be approved by the regulatory authority.

The energy supply of a balance group can take place through generation from power plants within the balance group or through the purchase of electrical energy from other balance groups. Dispatching takes place by supplying end customers within the balance group and by selling electrical energy to market participants in other balance groups. The exchange of energy between balance groups takes place through schedules. Balance groups can be formed beyond network areas of individual network operators, which are located within one control area.

The schedules of the balance groups contain the planned energy exchange with other balance groups in 15-minute time intervals. The energy suppliers have to prepare daily forecasts for the following day on the expected consumption of their customers and their own generation. The planned energy exchange with suppliers in other balance groups shall be notified to the balance group coordinator, who shall draw up aggregate schedules for the energy exchange of his balance group with other balance groups. The aim is that the forecasts of generation and consumption in connection with the schedules for each 15-minute interval of the following day show a balance between supply and demand of the balance group.

In practice, however, there are always deviations of the consumption of the customers and the generation of the power plants from the respective forecasts. Although there is a certain statistical balance between these deviations within a balance group, there is usually a difference, which is covered in the form of so-called balancing energy via a higher-level market system.

For the administration of the balancing groups, clearing offices were created which exercise the function of the balancing group coordinator for individual control areas. The balance group coordinator has, among other things, the tasks of managing the balance groups in organisational and billing terms as well as calculating and allocating the balancing energy. The balance group managers are obliged to procure balancing energy for the balance group members via the balancing energy system and to pay the costs charged for this by the balance group coordinator.

4.2 Community energy and collective actions

4.2.1 Legal framework for community energy and collective actions

Already before the transposition of European legislation regarding energy communities (i.e. the RED II and IEMD), Austria had effective regulation on collective generation in place.

The 2017 amendment to the Electricity Act introduced legal provisions concerning “collective generation plants” (“Gemeinschaftliche Erzeugungsanlage”), basically corresponding to the – in other countries also well-known – German “**tenant electricity model**”.

This legal regulation should make it possible to use roof areas of multi-party buildings in the sense of a prosumer approach. The intention was that tenants or owners of flats in apartment buildings, but also in office buildings or shopping centres, would join forces and money to operate a PV system together. All this should be possible without major changes to the electrical installations in the building (laying new cables or similar), only the PV system itself and suitable measuring devices are necessary (source: pv-gemeinschaft.at, translated by AEA).

While the “collective generation plants” model involves “active consumers” and “jointly acting renewables self-consumers” as defined in RED II, the later described “energy communities” cover a wider scope of joint activities and therefore are own legal entities.

The definition of a **collective generation plant** in Austria is regulated by [ElWOG §16a]:

The collective generating plant produces electrical energy to cover the consumption of the “participating beneficiaries”. A “participating beneficiary” is a legal entity or natural person or registered partnership whose power customer system is assigned to a joint generation system.

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- ▶ Each party in a building with a collective generation plant has the choice to participate in the collective generation plant or not to participate.
 - ▶ In addition to the energy supply via the public grid, the collective generation plant is integrated into the customer supply system of the building concerned.
 - ▶ Each end user is still free to choose his or her electricity supplier for the supply of electricity via the grid.
 - ▶ In addition to PV systems, other technologies such as wind turbines or combined heat and power plants (CHP) (e.g. biomass CHP) can also be considered for community generation systems.

These are some expected benefits of such “in-house” prosumer systems:

- ▶ Through the joint construction and operation of such a system, formerly pure electricity consumers should collectively generate electricity and thus supply themselves to a certain extent.
- ▶ As far as the participating parties consume the generated electricity themselves, they would save energy costs, grid fees (energy transfer reduction grid fees) and related taxes (20% VAT) that would have incurred when purchasing electricity from the grid.

4.2.2 Contractual relations of community energy/collective actions

According to [ElWOG §16a] the following requirements have to be met:

- ▶ The collective generation plant is connected to the common main line in the building.
- ▶ Two or more parties participate in the operation of the generating plant.
- ▶ The parties reach an agreement on the distribution of the generated electricity (dynamic or static, see description below).
- ▶ A separate metering point is set up for the collective generation plant.
- ▶ Smart meters or load profile meters measure generation and consumption at the collective generation plant and at the participating parties.
 - A separate metering point is set up for the generation plant – there are two virtual metering points: One for procurement from the grid and one for generation. It is important that only one business partner is allocated to these metering points.
 - Smart meters or load profile meters measure generation and consumption at the generation plant, as well as at the participating parties.
- ▶ The grid operator is informed about the distribution of the generated electricity to the individual parties.
- ▶ The parties conclude a contract with an energy supplier for the possible feeding of surplus electricity into the grid.

Two model contracts:

- ▶ “Agreement concerning the operation of a collective generation plant within the meaning of §16a ElWOG”
 - ▶ “Supplementary agreement to the grid access contract concerning the participation in a joint generation plant within the meaning of §16a ElWOG” can be found <https://www.ebutilities.at/mustervertraege.html>.

Overall, the regulations for collective generation plants have not been a real success story, due to high administration and information efforts. There was low awareness among target groups about this possibility. An exception is Upper Austria, where most of the 400 projects have been realized. It is expected, however, that RECs

will receive much more attention. For this reason, the description of this approach will not be further elaborated here. Further information can be found on the information platform for collective generation plants, <http://pv-gemeinschaft.at> (in German only).

4.3 Energy Communities

In Austria, based on EU legislation (RED II and IEMD), two types of new energy market actors, so called renewable energy communities (RECs) and citizen energy communities (CECs) can be founded since end of July 2021, when the corresponding national legislation (EAG and EIWOG) entered into force.

In the following, national legal provisions applicable that are different from RECs and [refer to CECs only, are written in blue letters](#). All other provisions (written in green letters) are valid for both types, which below are referred to as “energy communities”.

4.3.1 Legal framework for energy communities

4.3.1.1 Definition of REC/CECs in Austria

- ▶ **Foundation:** The formation of energy communities under Austrian law may be organised in any form of legal entity, be it an association, a cooperative, or even a limited or stock company, as long as it consists of at least two members and is entitled to exercise rights and be subject to obligations in its own name.
 - An energy community must be a "separate legal entity". This means that an energy community must assume a certain legal form, i.e. it must be a legal entity.
 - An energy community should have at least two members.
- ▶ **Participation & Membership:**
 - Possible members or shareholders of a REC are:
 - Natural persons, municipalities, legal entities of local authorities or other legal persons governed by public law (e.g. the Republic of Austria for the police station in a village/town or a district authority) as well as small and medium-sized enterprises (“SMEs”).
 - In the case of private companies, the participation in a REC must not be their main economic or professional activity [EAG §79 (2)].
 - Large companies and, in general, electricity and natural gas companies within the meaning of the EIWOG and the GWG 2011 (Gas Management Act, Gaswirtschaftsgesetz 2011); and large commercial and industrial companies **are excluded** from a REC.
 - The participation of generators delivering electric energy to a grid in a local or regional area is permitted, provided that they are not controlled by a (electric or gas) utility, electricity supplier, or electricity trader [EIWOG §16c (1)].
 - Branches of larger food retailers are only permitted to participate in an REC if they are not large companies. In the latter case, participation in a CEC is possible.
 - Possible members or shareholders of a CEC are:

-
- joint use of the renewable energy produced by generation facilities owned by its members or shareholders of or by the energy communities themselves; for its members' or shareholders' "self-consumption" purposes, across members property lines;
 - members or shareholders can become "prosumers" or investors (e.g. via financial participation), respectively and can become "active actors" on the local, regional (REC) energy market;
 - externally, beyond the energy community:
 - non-discriminatory access to all suitable energy markets
 - As soon as an energy community wants to sell electricity to third parties that are not part of the energy community, the energy community would need an electricity supplier licence. In other words, an energy community is exempt from the strict requirements for electricity suppliers only for the internal relations of the energy community (electricity for its own participants) [EIWOG §7 (1) Z45].
 - CECs are entitled to just the same, though in the electric energy segment only; however, without the restriction to renewable sources;
 - This includes providing energy (efficiency) services for their members, such as charging services for electric vehicles or services in the field of aggregation.
 - All breeds of energy communities have to contract with a licensed grid operator (§16d.6). The conclusion of the contract is divided into two areas:
 - Agreement between the EEG and the grid operator,
 - Supplementary agreement to the existing grid access contract between individual participants and the grid operator. Each participant in the energy community must confirm the supplementary agreement in the grid operator customer portal so that the individual generation and consumption values can be transmitted from the grid operator to the energy community.
 - CECs & RECs are not allowed to build, buy, own, or operate their own grids or even operate their own metering systems – since metering and metering management is responsibility and privilege of grid operators only.
 - In Austria, it is not necessary to transfer ownership of contributed generation plants to the energy community under civil law, but the owners of the plants must agree with the energy community that the energy community will operate and control the plants (should be regulated by contract).
 - The power to operate and dispose of the generation plants lies with the community - with the exception of self-consumption by members who contribute a generation plant.
 - ▶ **External service providers:** Energy communities have the option of delegating the plant management, service and maintenance of renewable generation plants to a service provider. The EAG has clarified contracting and leasing models as well as operational management and maintenance for §79 EAG and §16b EIWOG in the law. Service providers should also be able to take over administrative steps for the registration of members of an energy community. In the case of leasing models, the economic ownership of the system can remain with the leasing company. This reduces the economic risk for the members of the energy community.

4.3.1.2 Boundaries/limitations of exchange of energy within a community/grid area

- ▶ **Consumer Proximity:** Energy community members or shareholders must be “in the vicinity”, according to [ElWOG § 16c] as follows:
 - **RECs on a local level:** The generation facilities and the consumption facilities of the members or shareholders of the REC, inside a REC must be connected through the low voltage network (230/400 V) and the **low voltage side of a transformer station** (“Trafo- bzw. Transformatorstation”) within the concession area of one DSO;
 - local RECs members’ generation and consumption installations can be connected to network levels 6 and 7 only (see grid level definition below).
 - **RECs on a regional level:** The generation and consumption facilities of the members or shareholders of the REC, inside a REC must be connected through the medium voltage network and (at the same bus bar of) the medium voltage side of a transformer substation (“Umspannwerk”) within the concession area of one DSO;
 - regional RECs members’ and shareholders’ generation and consumption installations **can be connected to grid levels 5 to 7 and the bus bar of network level 4** (Mittelspannungs-Sammelschiene) **only**;
 - the transmission of energy from generation plants or storage facilities to consumption plants **using grid levels 1 to 4**, with the exception of the medium-voltage bus bar in the transformer station, or through grids of other grid operators **is not permitted**.
 - A REC can only be either local or regional. Mixed forms are not possible.
 - As of 1 January 2024, a participant of a collective generation plant or a member of a REC or CEC can also become a member in other energy communities or participate in other collective generation plants.
 - According to § 111 (8) ElWOG 2010, as of 01.01.2024, participation in a consumption or generation unit in more than one collective generation plant, **citizen energy community** or renewable energy community is permitted.
 - According to the current template of the operation contract concluded with the grid system operator in charge, the **grid operator has to check the actual connection location and grid allocation** of the participating grid users for every single case at the time of notification of the same by the REC.
 - Grid users must receive information within 14 days as to which part of the distribution grid their consumption or generation facilities are connected to.
 - Changes to the network configuration on the part of the DSO have no effect on the qualification of the local or regional REC for existing participants.
 - The hegemonic position of DSOs as bureaucratic and technical dominators could turn out to be one of the major headwinds against citizen energy breakthrough, but most DSOs are – with the help of Koordinierungsstelle (see below) – on a good track to delivering open access platforms to clarify actual connection location and grid allocation.
 - **Producers may participate in renewable energy communities as long as they are not controlled by a utility, supplier or electricity trader.**

- CECs can be formed and operated nation-wide; the location of generation and consumption units of its members can be located in any grid areas and levels within national borders

In Austria, the electricity grid is divided into **seven grid levels** (NL) based on the voltage level⁶:

- ▶ NL 7: low voltage (400 V)
- ▶ NL 6: transformer station from medium (30/10 kV) to low voltage (400 V)
- ▶ NL 5: medium voltage (10 kV to 30 kV)
- ▶ NL 4: transformer substation from high (110 kV) to medium voltage (10/30 kV)
- ▶ NL 3: high voltage, 110 kV
- ▶ NL 2: Substation network between ultra-high (380 kV/220 kV) and high voltage (110 kV)
- ▶ NL 1: ultra-high voltage, 380 kV and 220 kV

4.3.1.3 Decision Tree – Allocation of types of energy communities according to examples of “decreasing Consumer Proximity”

The following Table 7 shows how consumer proximity relates to different types of energy communities, beginning with communities with high consumer proximity to low proximity, starting with prosumers and consumers sharing electricity within a building.

Table 7: Consumer proximity relates to different types of energy communities

“Prosumer(s) and Consumer(s) Proximity” EXAMPLE; Sharing of electricity ...	Possible type of energy community according to AT definitions	Some numbers outlining the theoretical, overall relevance of the type of energy community in AT
... within the property line of a house, only; by at least two persons (tenants, owners) applicable for private households as well as for businesses, public institutions etc.	Collective generation plants (often referred to as tenant electricity model; “Mieterstrom-Modell” also)	According to Statistics Austria, ⁷ there are 176,000 buildings with 3 to 10 flats each, with a total of 961,000 flats; a further 71,000 buildings with more than 10 flats each host 1.327 million flats
... among (physical, legal) persons (at least two), all of them connected via grid level 6 or 7 low voltage line(s) to the same transformer station (in German “Trafostation”, converting electricity from	REC on a local level	According to E-Control statistical report 2021 ⁸ , by the end of 2020 there were 80,143 transformer stations (from medium to medium or low

⁶ Source: e-control, 2016: Stromanschluss leichtgemacht. Alles Wissenswerte Zu Netzanschluss & Netzzugang. Vienna, Austria.

⁷ http://statistik.at/web_de/statistiken/menschen_und_gesellschaft/wohnen/wohnungs_und_gebaeudebestand/index.html

⁸ <https://www.e-control.at/publikationen/statistik-bericht>

<p>grid level 5 to 6) at the low voltage side (400 V), only; all (generation & consumer) installations have to be within the concession area of one DSO only.</p>		<p>voltage; with in total 33,548 MVA) in AT; about 12,000 of them are situated in Lower Austria, for example.</p>
<p>... among (physical, legal) persons (at least two), all of them connected via low-voltage (grid level 6 and 7) and medium-voltage lines (grid level 5) to the medium-voltage side of the (grid level 4) bus bar of the same transformer substation (in German called: Umspannwerk), only; all (generation & consumer) installations have to be within the concession area of one DSO only.</p>	<p>REC on a regional level</p>	<p>According to E-Control statistical report 2021⁸, by the end of 2020 there were 1,050 transformer substations (from ultra-high (up to 220 kV) to medium or low voltage; with in total 46,406 MVA) in AT; up to 80 of them are situated in Lower Austria (see figure below).</p>
<p>... among persons (at least two), whose electricity installations (generation or consumer) are connected to grid concession areas of (at least two) different DSOs</p>	<p>CEC</p>	<p>There is no limitation, whilst sufficient capacity for sharing within the public electricity grid within national borders</p>

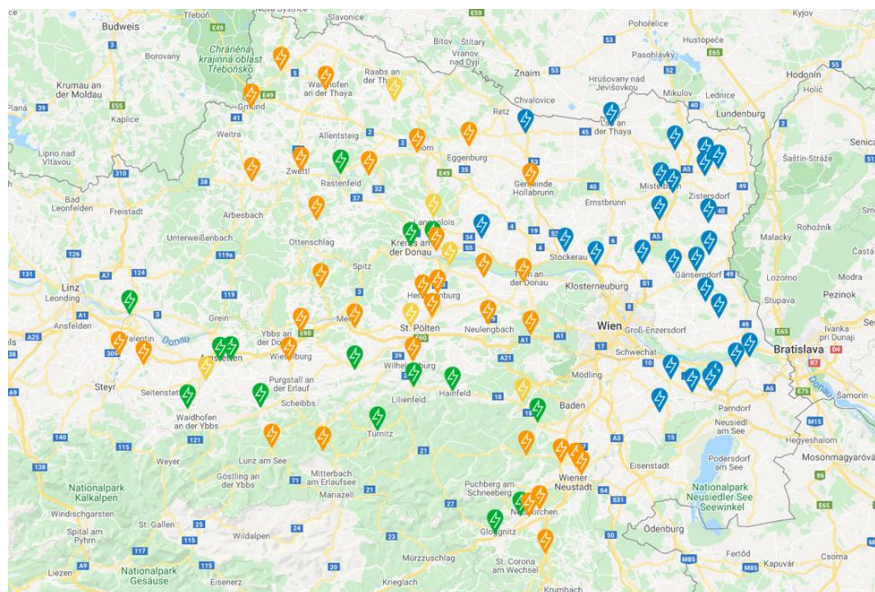


Figure 3: Spatial distribution of 80 transformer substations (high to medium voltage “Umspannwerke”) in the public electricity grid of the DSO “Netz Niederösterreich GmbH” in Lower Austria, being relevant for RECs on a regional level.⁹

⁹ Google Map, taken from <https://www.netz-noe.at/SpecialPages/Kapazitaetsauslastung.aspx>

RECs on a regional level can integrate more members, given that they cover a wider range of network levels and, therefore, a larger geographical area. Per power line branch, going away from the level 4 bus bar, an area of e.g. 20 km outreach can be supplied and several of such branches lie within one REC on regional level. Lower Austria has 1.7 million inhabitants and 844,000 end consumer electricity installations, for example.

4.3.1.4 Other Legal Provisions relevant for energy communities

▶ Grid access and mutual obligations

- Grid users have a legal claim against grid operators to be allowed to participate in energy communities [EIWOG §16d (1)].
- Accordingly, grid operators are obliged to cooperate in order to facilitate energy transfers within energy communities as well as the feed-in of surplus quantities.
- The energy community shall use a licensed grid operator [EIWOG §16d (6)].
- Affected grid operators shall be informed about the establishment of an energy community as well as defined contents and any changes to these contents [EIWOG §16d (2)], i.e.
 - description of the functionality of the generation facilities (storage facilities, if applicable), indicating the metering point numbers;
 - consumption installations of the participating grid users, stating the metering point numbers;
 - the respective ideal share of the participating grid users in the generation plant as well as the distribution of the generated energy (static or dynamic allocation; see below):
 - The ideal share corresponds to the mathematically balanced consumption share of the participating grid user in the total generation of the energy community [EAG explanations].
 - allocation of the energy feed-in from generation plants not consumed by the participating grid users per quarter hour;
 - inclusion and withdrawal of participating grid users;
 - termination or dissolution of the renewable energy community as well as the dismantling of the generation facilities.

▶ Metering and billing for energy communities

- [EIWOG §16e (1)]: The grid system operator shall
 - 1. measure the consumption of the consumption installations of the participating grid users as well as the feed-in and consumption of the generation installations with a load profile meter
 - or – for consumers and generators with less than 100,000 kWh annual consumption or less than 50 kW connected load, for which standardised load profiles are to be provided [EIWOG §17, Par. 2] – with a smart meter
 - If the smart meter is not installed yet, the grid operator has to install it within two months (this does not include commissioning within that time frame, which is observed to occasionally cause problems in practice)

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- If smart meters are used, the energy values must be measured per quarter hour, read out and reduced by the allocated generated energy for clearing with regard to balancing energy, among other things.
 - 2. make the measured quarter-hourly values of the generation plants and the consumption plants of the participating grid users available to the suppliers and the energy community as soon as possible, at the latest on the following day, in accordance with the market rules. [In the case of CECs, this shall be done taking into account the data exchange pursuant to para. 2 \(see below\).](#)
 - These values shall also be made available to the participants of the energy community free of charge via a customer-friendly web portal in a machine-readable format. For this purpose, the grid operators shall take precautions for secure identification and authentication of the energy community on the web portal as well as for encrypted transmission of the data according to the state of the art. The other market rules may provide for deadlines for the implementation of this provision.
 - [EIWOG §16e (2)]:
 - [The rule also applies to CECs that the data, metering and measured values of the consumption installations of the participating network users as well as the generation installations are to be made available to all other network operators in whose concession area generation installations of the respective CEC and/or consumption installations of participating network users are also connected. The grid operators are obliged – insofar, as this is technically possible – to use existing automation-supported data processing processes \(platforms\) for this purpose. The metered as well as values calculated in accordance with this paragraph based on counted and measured values shall be transmitted to the supplier as soon as possible, at the latest on the following day, in accordance with the market rules. The other market rules may provide for deadlines for the implementation of this provision.](#)
 - [EIWOG §16e (3)]
 - The grid operator shall allocate the **static or dynamic share** of the generated energy, agreed between the participating grid users, to allocate it (note: the self-consumption quantities thus determined) to the respective installations of the participating grid users. [In the case of CECs, this shall be done taking into account the data exchange in accordance with subsection 2.](#) If dynamic shares are used, these may be reallocated between the participating grid users on a quarter-hourly basis. The values shall be determined in accordance with the following provisions:
 - the allocation shall be made per quarter hour and shall be limited to the energy consumption of the respective system of the participating network user in the respective quarter hour;
 - the static or dynamic share of the generated energy allocated to the metering point of the participating grid user's installation shall be recorded separately and shown on the invoice.
 - ▶ **Function principle of static and dynamic allocation of generated energy to the participating grid users installation**

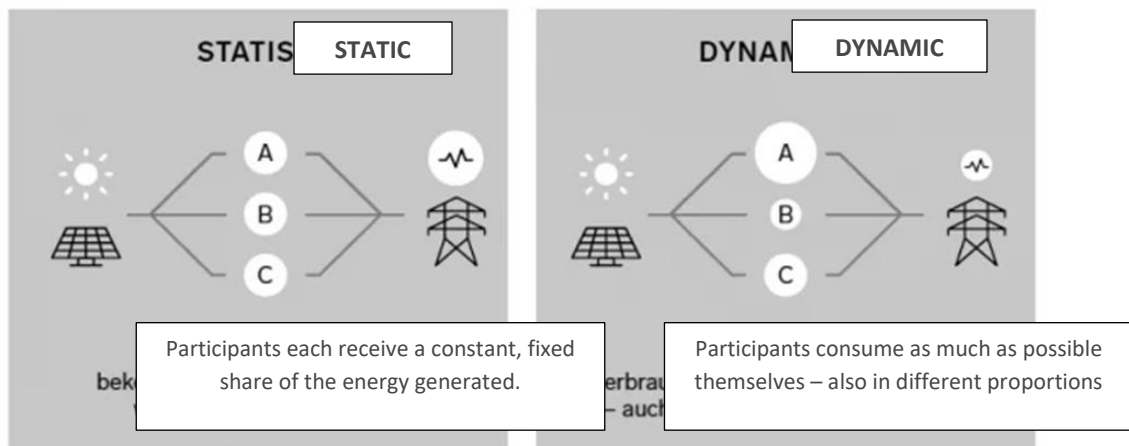


Figure 4: Legal issues concerning the establishment and implementation of energy communities. Source: Rechtsfragen zur Gründung und Umsetzung von Energiegemeinschaften, Stephan Cejka, Kaleb Kitzmüller, Siemens AG Austria

- ▶ **Static allocation** means that each energy community member receives the respective pre-agreed fixed ideal share of generated electricity. The allocation of the green electricity generated by the generation plants being part of the energy community to the members occurs according to the shares agreed in advance between the energy community operator and the respective member. The energy community member always receives the same share of electricity from the green power generation plants. If more green electricity is generated for the REC member than actually is needed by the energy community member, the excess electricity is sold to the grid as a community surplus (the proceeds are allocated to the community).
 - Pro: simple billing & contract design
 - Con: lower self-consumption share of the total energy stemming from green power generation being part of the energy community, if the fixed allocated generated green power cannot currently be used by the respective energy community member (due to lower consumption) or a short-term additional use of the green power is not possible in each case.

- ▶ **Dynamic allocation** means that the distribution of the electricity generated by the energy community occurs in a **dynamic/flexible** way, according to the respective actual consumption patterns of the energy community members. As far as possible, the electricity generated by the community affiliated green power generation plants is distributed among the participating parties according to actual demand, in order to increase the degree of self-sufficiency.
 - If a member does not need electricity at the moment, the electricity is allocated to the other members who are currently consuming it. The participants thus consume as much as possible themselves – even if in different proportions. The green electricity generated by community-affiliated plants is allocated in proportion to the respective consumption per quarter of an hour.
 - If the community plants generate less electricity than is currently needed by the community members, the allocation is made in proportion to their current demand. If more electricity is generated than is currently required by the members, it is fed into the public grid (the proceeds from the feed-in are allocated to the community).
 - Pro: higher self-consumption share; thus higher yield & faster amortisation
 - Con: more complex contractual regulation and billing required

- ▶ **Relevant regulations regarding smart meters**

- Irrespective of the project plan for the rollout of smart meters, the grid operator shall provide end consumers with a smart meter upon request.
- When using smart meters, the energy values must be read out every quarter of an hour.
- In the context of the establishment of energy communities, the grid operator must install smart meters within two months [EIWOG § 16e (1)].

▶ **Data exchange and market communication** [EIWOG §45]: Data exchange between market participants is one of the supporting pillars of the market.

- Governance is specified in Other Market Rules (SoMa) chapter 5 – e.g. active participation for all market participants.
- Settlement takes place via decentralised communication platform (energy data exchange; EDA – Energiewirtschaftlicher Datenaustausch).
- Data protection and security, interoperability and low-threshold access must be guaranteed.
- Cost-bearers are grid operators.
- Basis for implementing energy communities.
- A central and uniform contract is to be aimed for.

▶ **Provisions regarding foundation and registration of energy communities**

- For the **connection to a REC**, it is crucial to know which transformer station or which line in the medium-voltage substation the participants are connected to.
- Upon request of persons who wish to form a REC, grid operators must provide information unbureaucratically and free of charge within 14 days. Which is the distribution grid level, their generators or grid user installations are connected to, or whether these systems are in the local or regional area of a specific REC (in the process of being founded) [EIWOG §16c and EAG explanations].
- Meanwhile, many delivery grid operators (DSOs) provide this information immediately, automation-supported, via an online portal.
 - Most DSOs upon entering the metering point number deliver information on which transformer station or transformer substation supplies the respective metering point. This in turn makes it possible to check whether all planned metering points are located in the same "local" or "regional" area of a grid area.
 - Several DSOs now also visualise the information using online maps. This allows interested parties to see at a glance which parts of a network area belong to the same local or regional area. For an EC, this makes it easy to see whether all members are located within the common local or regional area. These maps are also very useful for finding other members. In some cases, the available and booked grid capacity of the relevant substations (grid level 4) is also published.
- The **formal establishment** of an energy community takes place depending on the chosen corporate form (see below, contracts of members of RECs/CECs).

- The establishment of a legal entity is also a prerequisite for the **registration of the energy community** with the grid operator (meaning that only a legal entity can be registered as an energy community – see below, contracts of RECs/CECs with other market participants).

► **Regulations regarding Supervision of energy communities** [EAG § 79]

- The regulatory authority (E-Control) must publish a cost-benefit analysis by the end of the first quarter of 2024 to determine whether an appropriate and balanced participation of RECs and CECs in system costs is ensured. This includes, in particular, the costs for balancing energy.
- Grid operators, RECs and CECs shall submit the data necessary for this purpose to the regulatory authority.
- If the cost-benefit analysis shows that energy communities do not participate adequately in the system costs, there is the possibility of changes in the cost structure. According to the EAG explanatory notes p. 19: “The cost-benefit analysis shall be the basis for decisions on the establishment or adjustment of existing regulations that ensure a balanced participation of the energy communities in the overall system costs [...]”.

4.3.2 Contractual relations and liabilities of energy communities

The following figure gives an overview of the manifold contractual relations that are relevant when founding and operating an energy community.



Figure 5: Contractual relations with renewable energy communities

Source: Renewable energy communities – Legal forms. Publication of the Austrian Coordination centre for energy communities. Translated by AEA. The guide related to legal aspects of ECs can be downloaded [here](#) (in German).

4.3.2.1 Contracts of members of RECs/CECs

▶ Participation and effective control in energy communities

- In RECs, participation and effective control can be exercised by members that are “located in the proximity” of the renewable energy project
 - i.e. citizens, local authorities as well as micro, small, small- and medium-sized (SME) businesses;
 - for SMEs: whose primary economic activity is not the energy sector or the REC itself.
- CECs can effectively be controlled by natural persons, local authorities, including municipalities, or small enterprises;
 - they must not be controlled by SME / large companies active in the energy industry;
 - no membership restrictions; large enterprises are allowed, but excluded from control (see above).

▶ Ownership relations related to generation facilities: Owners of generation facilities can be the energy community itself, its members, shareholders or third parties.

- The power of operation and disposal of the generation facilities, with the exception of self-consumption by members who contribute a generation plant, shall lie with the energy community.
 - It is therefore not necessary to transfer ownership of the already existing (and being eligible via previous subsidy schemes) or new generation plants to the REC under civil law. However, the owners of the plants must agree with the REC that the REC will operate and control the plant parts not used for self-consumption of the owner (this should be contractually regulated).
 - In the case of surplus feeders, this legal requirement from § 16d Para. 5 EIWOG (“The power of operation and disposal over the generation facilities lies with the energy community”) cannot be completely fulfilled for technical and organisational reasons. Transferring the power of operation and disposal to the energy community would result in the energy community taking over the metering point and thus also the contract with the grid operator. However, this is not possible in the case of surplus feeders because, according to the current legal situation, the electricity purchase and generation metering points cannot be separated from each other and assigned to two different contractual partners.
 - Nevertheless, surplus feeders should be able to participate in energy communities. In this case, the operator of the installation must also remain the owner of the metering point and a contractual partner of the grid operator. The surplus energy that is not consumed at the site itself is made available to the energy community, but the quantity that is not consumed by the energy community is in turn allocated to the generation metering point and utilised by the operator on the market.
 - In the event that a person does not want to (or in case of a larger company is not allowed to) become part of the EC itself, it is possible to lease a generation plant to the EC. In the case of a lease, the generation plant would be part of the EC, which is legally permitted.
- The energy community may use the services of a third party for the operation and maintenance of its generation facilities [ELWOG § 16d (5)];

- In particular, contract and leasing models are permissible.

► **Eligible types of companies for energy communities and their pros and cons**

- According to the law, an energy community must be a separate legal entity. By 'separate legal entity' it is meant that an energy community must assume a certain legal form, i.e. it must be a legal person. 16b (2) ElWOG and 79 (2) EAG state, for example, that a citizens' energy community or a renewable energy community consists of two or more members or shareholders and must be organised as an association, cooperative, partnership or corporation or a similar association with legal personality.
- The following table gives an overview of the most reasonable corporate forms eligible for energy communities and of their main characteristics.

Table 8: Most reasonable types of companies eligible for energy communities and of their main characteristics.

	Association (Verein)	Commercial and Industrial Cooperatives (Erwerbs- und Wirtschaftsgenossenschaften)	Limited liability company (GmbH)
Foundation	Written Articles of association and notification to the Association authority	Written Cooperative agreement and registration in the Company Register	Articles of association and registration in the Company Register
Set-up costs	Low (from approx. € 50)	Rather high, approx. from € 2,500	Approx. from € 2,500
Member entry and exit	Members can be admitted and excluded	Members may be admitted and excluded	Transfer of a share in the business, withdrawal of a member possible
Running costs	Low	Balance sheet and audit costs	Balance sheet costs
Taxes	Depending on activity; Tax relief possible under the Federal Fiscal Code (BAO)	Corporate tax (KöSt, 25%); capital gains tax for sums distributed (KESt, 27.5%)	KöSt (25%); capital gains tax for sums distributed (KESt, 27.5%)

Source: Energy and Environment Agency of Lower Austria (EnU). Download of German version: energie-noe.at/download/?id=4849 (translated by AEA)

- A stock corporation (Aktiengesellschaft) theoretically could also be an option; the costs are extraordinarily high, however.
- A "Similar association with legal personality" [EAG §79 (2)] is an open/limited partnership (OG/KG), it has high costs and liability exposure and the entry/exit of members is complicated, however.
- The next table gives an overview of the pros and cons of the most reasonable corporate forms eligible for energy communities.

Table 9: Pros and cons of the most reasonable types of companies eligible for energy communities.

	Association (Verein)	Commercial and Industrial Cooperatives (Erwerbs- und Wirtschafts-genossenschaften)	Limited liability company (GmbH)
Advantages	<p>High level of standardization</p> <p>Straight-forward registration procedure (notification)</p> <p>Membership and corporate governance: High level of flexibility</p> <p>No personal liability of members</p> <p>Lower costs compared to other types of companies (incl. cooperative)</p>	<p>Legal purpose of cooperatives is identical with the idea of communities</p> <p>Legally permitted to make a profit-“Dynamic membership circle”</p> <p>Limitation of liability</p> <p>Lower costs compared to other types of companies (e.g. Ltd)</p>	<p>purpose: non-profit limited liability company is possible</p> <p>Legal entity enjoys trust on the market (→ financing)</p> <p>No personal liability of shareholders (important for municipalities)</p>
Disadvantages	<p>Non-profit status; profits cannot be distributed to the members</p> <p>No share capital under company law; no clear capital-raising regime (membership fees, donations, etc.)</p> <p>In the event of a voluntary dissolution of the Association, existing assets in the form of generation facilities belonging to the Association may only be distributed among the members to the extent of the value of the members' contributions, if applicable, else not at all. The statutes of the Association shall determine the purpose to which the assets of the association are to be allocated (Kurzmann & Metzler, 2021)</p>	<p>Corporate Governance as regards corporate bodies (board)</p> <p>(Annual) review procedure</p> <p>Costs of establishment up to € 2,000 –3,000</p>	<p>Change of members very formal, complicated and expensive</p> <p>Strict accounting rules</p> <p>Higher costs of establishment compared to other legal entities</p>

Sources: Energy communities – Choosing the right type of company. Schoenherr Attorneys at Law.¹⁰

- Cooperative and association most closely reflect the concept of energy communities
 - There are already model statutes for the foundation of an association, prepared by a law firm and freely available. The sample statutes can be downloaded [here](#) (in German only).¹¹
 - The [auditing associations](#) provide support for the establishment of a cooperative.¹¹

4.3.2.2 Contracts of RECs/CECs with other market participants

Grid operators have an important role to play in the implementation of energy communities. In Austria, the grid operators are already working on their own information offers in this regard.

▶ Relationship energy community & grid system operator

- The energy community must conclude a **grid access contract** with the DSO in charge for each generation plant.
 - The grid access contract of the generating plant is to be concluded either by the energy community itself or by a participating grid user owning the plant.
 - In the case of existing grid access contracts, the energy community can enter into the contractual relationship with the DSO instead of the owner of the generation plant.
 - As soon as the energy community itself operates a generation plant, it requires grid access and therefore a metering point.
- Initially, a generation plant can only belong to one community at a time (from 1 January 2022 membership with a consumption or generation plant in more than one CEC or REC is also to be permitted).
- The grid operator is obliged to allocate the static or dynamic share of the generated energy agreed between the participating grid users to the respective installations of the participating grid users. If dynamic shares are used, they may be reallocated between the participating grid users on a quarter-hourly basis [EiWOG § 16e (3)].
- Separate grid access agreements exist between the grid operator and the participating grid users of the energy community. Due to participation in the energy community, supplementary agreements are concluded to these.
- In addition, the energy community acts as the contact person for all participating grid users vis-à-vis the grid operator.

¹⁰ https://www.energy-tomorrow.eu/wp-content/uploads/sites/15/2021/09/Energy-Communities_Schoenherr_Energy-Tomorrow-2021.pdf

¹¹ Energy Future Lower Austria (EZN, Energiezukunft Niederösterreich), energie-noe.at/energiegemeinschaften-gruenden

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- E-Control at the beginning of 2023 updated a comprehensive guideline for the grid connection of power generation plants including a range of typical examples. The (German language) report can be downloaded [here](#).

Two related model contracts

- ▶ “Operation of a renewable energy community as defined in §§ 79 f EAG or 16c ff ElWOG”
- ▶ “Supplementary agreement to the grid access contract concerning participation in a renewable energy community as defined in §§ 79 f EAG or 16c ff ElWOG” can be found [here](#).

The contract on the “**Operation of a Renewable Energy Community as defined in §§ 79 f EAG or 16c ff ELWOG**” shall only apply to those participating grid users who already have a connection to the public grid, a valid grid access contract with the grid operator and a valid energy supply contract.

Further prerequisites for the operation of a REC:

- ▶ a contract between the REC and the participating grid users containing all the necessary provisions pursuant to §§ 79 f EAG and 16c ffa ELWOG;
- ▶ a grid access contract including a supplementary agreement for each participating grid user and a grid access contract for the generation metering point with the grid operator, as well as a current contract with an energy supplier/energy consumer;
- ▶ a defined mode (static or dynamic) for allocating the amount of energy generated among the participating network users ([Annex ./A of the model contract](#));
- ▶ all participating consumption units and the joint generation unit are in operation and equipped with a metering device for the required measurement on a ¼ h basis;
- ▶ the REC has ensured that the consent of the participating grid users or the community to the reading and transmission of the quarter-hourly values pursuant to §84a ElWOG has been obtained.
- ▶ **Duties of the REC** (according to the aforementioned operation contract concluded with the grid system operator in charge)
 - Pursuant to § 16d par. 2 ElWOG 2010, the REC shall notify the grid system operator of the following contents and any changes:
 - description of the mode of operation of the generation plant, stating the metering point numbers;
 - consumption installations of the participating grid users, stating the metering point numbers;
 - the respective allocated generation share (according to the distribution key in [Annex ./A](#) of the model contract) of the participating grid users in the generation plant as well as the distribution of the generated energy;
 - allocation of energy produced and not consumed by participating network users per quarter hour;
 - admission and withdrawal of participating grid users;
 - termination or dissolution of the renewable energy community as well as the dismantling of the generating facility.

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- The REC shall immediately work towards correcting errors and ensuring the accuracy of the transmitted data for the future.
 - The REC is solely responsible for any necessary economic compensation between the participating network users and itself. In the event of changes, the REC shall inform the grid operator in advance and in good time, otherwise indemnifying and holding the grid operator harmless.
- ▶ **The energy community shall, among other things, conclude agreements that include** at least the following contents [ElWOG §16d (3)]:
- data management and data processing of the energy data of the generation plants and the consumption plants of the participating grid users by the grid operator;
 - operation, maintenance and servicing of the generation facilities as well as the bearing of costs;
 - liability;
 - insurance, if any.
- ▶ **Data transmission, data protection and confidentiality** (according to the aforementioned operation contract concluded with the grid system operator in charge)
- The network operator shall provide RECs with the available quarter-hourly values and master data required for the performance of the operation contract concluded with the grid system operator in charge.
 - The data transmission or data exchange shall be carried out in accordance with the stipulation on [eutilities.at](https://www.ebutilities.at) under “Energy Communities” in the respective valid version.
 - Each contracting party may use the data of the market participants/grid users transmitted to it by the other contracting party exclusively in accordance with the relevant legal provisions and may provide it to others who need this data to fulfil their statutory duties.
- ▶ **Multiple participation:** It is also possible to participate in more than one energy community
- According to § 111 (8) ElWOG 2010, participation with a consumption or generation facility in more than one joint generation facility, CEC or REC is permitted from 1 January 2024.
 - The market processes required for this went live on 8 April 2024. Multiple participation will only be possible in practice from this date.
- ▶ **Liability provisions** (according to the aforementioned operation contract concluded with the grid system operator in charge)
- RECs shall be responsible for the accuracy of the transmitted data of the participating network users. Each contracting party shall be liable to the other party in accordance with the general provisions of the law on damages. Insofar as liability is based on fault, liability shall be limited to intent and gross negligence, with the exception of personal injury. Compensation for loss of earnings, loss of profit and consequential damage, in particular compensation for third-party damage, shall be excluded to the extent permitted by law.

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- The grid operator shall not be liable for the payment of taxes and levies and/or fees by the REC and/or the participating grid users.
 - The grid operator shall only check the allocation key with regard to plausibility; it shall not check the correctness or economic efficiency. If the participating grid users assert claims against the grid operator, the REC shall indemnify and hold the grid operator harmless. This also applies in the event of non-fulfilment of the prerequisites necessary for the execution of the contract, e.g. official requirements, statutory provisions, etc., compliance with which is the responsibility of REC.

▶ **Surplus energy**

- The community can conclude a purchase agreement with an **electricity trader** for the surplus energy not used; alternatively, this can also be allocated to the individual members according to their ideal share.

▶ **Power generation & consumption** – interrelations with the **balancing group system**

- The **quantities of electricity generated and consumed** within an energy community shall **remain outside the balancing group system**; the provisions of the ElWOG 2010 applicable to electricity traders or suppliers (e.g. preparation, balancing, and dispatch of timetables, etc.) shall not apply in the internal relationship.
- Furthermore, the provisions contained in the EAG, the ElWOG 2010 and the GWG 2011 regarding **guarantees of origin, electricity or gas labelling and invoicing** do not apply in the internal relationship.

▶ **Contracts with energy suppliers or traders** in the case of market premium support for generation plants

- The EAG Package is based on the principle of direct marketing. There is no central authority for the purchase of the generated electricity. The operator or investor of the renewable energy facility must therefore take charge of the marketing of the generated electricity himself. Small plant operators (below 500 kW) are exempted.

4.3.2.3 Other contractual issues

▶ **Land or roof lease contracts** or PV plant contracting contracts etc.

- Owners of generation plants, from which energy generated is distributed to energy community members, can conclude land or roof lease contracts with owners of land or roofs.
- There are also suppliers that offer PV plant contracting models for consumers or energy communities. Here the contractor owns the plant for the e.g. first 15 to 20 years of operation and supplies energy to consumers with a defined purchase price corridor.
- Currently there are no public model contracts available for those types of contracts.

4.3.3 Authorization of construction and operation of generation facilities

Sources of this chapter: Chambers and Partners, London, United Kingdom¹² and Austrian Energy Agency

Principal laws governing the construction and operation of generation plants are:

- ▶ the EIWOG and delegated state electricity laws, which govern general aspects of the power industry, including the granting of permits for the construction and operation of power stations;
- ▶ the Federal Environmental Audit Act (Umweltverträglichkeitsprüfungsgesetz 2000, or UVPG 2000), which governs the process for obtaining a federal environmental impact authorisation granted by the respective state government;
- ▶ the Water Act (Wasserrechtsgesetz 1959, or WRG) is applicable when using water for energy production, or when using groundwater, or when groundwater balance is affected;
- ▶ the Forestry Act (Forstgesetz 1975) is applicable if wooded areas are to be cleared for construction;
- ▶ the Waste Management Act (Abfallwirtschaftsgesetz 2002, or AWG), which governs an approval requirement for certain waste; and
- ▶ the relevant nature conservation legislation for the relevant federal state – e.g., the Lower Austria Nature Protection Act (Niederösterreichisches Naturschutzgesetz 2000), which is applicable in specially protected areas.

Regulatory process for obtaining all approvals to construct and operate generation plants

The regulatory process and the factors that are taken into account in the decision to approve a generation project differ according to the type of generation plant, the impact on the environment, and also the state in which authorisation is to be obtained.

As an example, the Carinthia Electricity Management and Organisation Act provides for two procedures:

- ▶ a simplified procedure for power generation plants intended solely for emergency power supply or with a peak load capacity of up to 500 kWp; and
- ▶ a regular procedure for peak load capacities beyond 500 kWp.

Generally, under the simplified procedure, provided the application is complete, details of the project will be made public by posting a notice at the local community council and by submitting the project documentation to the municipality during a specified period. During this period, qualified neighbors can submit justified objections. The authority investigates by obtaining expert opinions and determining whether the conditions allow for approval. If necessary, approval is issued by a formal decision. Specific orders relating to the construction and operation of the plant may be issued.

For a regular procedure, a formal oral hearing is scheduled after the application has been deemed complete. The subject matter, time and place of the hearing are announced on the official noticeboard of the local community council, and, where appropriate, on the official noticeboard of neighboring municipalities. Qualified neighboring

¹² <https://practiceguides.chambers.com/practice-guides/alternative-energy-power-2021/austria/trends-and-developments/O8528>

landowners near the site of the prospective power generation plant are personally informed. The authority makes its investigations by obtaining expert opinions to determine whether the conditions allow for approval. If necessary, the approval is issued by a formal decision. Specific orders relating to the construction and operation of the plant may be issued.

The procedures and relevant info for constructing and authorizing PV plants (probably the most important energy source for RECs) are summarized in this document for all nine Austrian states by the Federal Association Photovoltaic Austria: pvaustria.at/wp-content/uploads/Kurzversion-Leitfaden-zur-Anzeige-und-Genehmigungspflicht-von-PV-Anlagen.pdf (Status May 2024, in German only).

For larger electricity generation projects, an **environmental impact assessment (UVP)** may become relevant.

Annex 1 of the UVP-G lists 89 types of projects deemed to have significant environmental impact, for which an environmental impact assessment is required. Regarding energy generation, this applies to a number of projects, including hydropower plants, thermal power plants with a minimum fuel heat output of 200 MW or overhead power lines with a rated voltage of at least 220 kV and a length of at least 15 km.

Pursuant to Annex 1, certain projects are subject to a simplified assessment procedure, including wind turbines with a total electrical output of at least 30 MW. A third class of projects is subject to the fulfilment of specific conditions, an investigation done on a case-by-case basis, and, where required, the project may be subject to a simplified assessment procedure.

If the project requires an environmental impact assessment, in addition to the above, the applicant must submit an environmental impact statement with the application. It must describe the project, the main alternatives reviewed, the environmental impact of the project and the measures designed to prevent or mitigate the impact. The public is greatly involved in this procedure, and the assessment of the potential impact on the environment will be carried out by experts from a wide variety of disciplines, as appointed by the authority. These experts will be required to jointly prepare a comprehensive environmental impact report.

General terms and conditions imposed in approvals to construct and operate generation plants

Generation plants must be constructed, modified and operated in a manner that conforms with water protection regulations. State-of-the-art technology must be used to construct and operate the plant, as well as to store equipment or other materials. This is to ensure that the life or health of the plant operator, the state of neighboring properties and other property rights are not endangered. Furthermore, neighbors must be protected against unreasonable levels of noise, smell, dust, fumes, vibrations and the absence of light (the latter most relevant in the case of wind turbines). Furthermore, glare is relevant for the construction of PV plants, for neighbouring buildings as well as for nearby traffic infrastructure. The plant must be constructed and operated in an energy-efficient manner and in accordance with the relevant zoning plans.

4.4 Support Schemes

Sources of this chapter: Chambers and Partners, London, United Kingdom¹³ and Austrian Energy Agency

The Austrian Renewable Expansion Act (EAG) sets out climate goals and specific renewable electricity expansion targets, namely:

- ▶ by 2040, Austria shall achieve climate neutrality;
- ▶ by 2030, 100% of the total electricity consumption of Austria shall be covered by renewable energy sources (national, annual balance);
- ▶ to achieve the 2030 target, the generation of an additional 27 terawatt hours (TWh) is needed – sources-related, the expansion goals are:
 - an additional 11 TWh in solar power production (approx. + 11 GWp);
 - an additional 10 TWh wind power production (approx. + 5 GW or > 1,000 plants);
 - an additional 5 TWh hydropower production (approx.. + 1.2 GW); and
 - an additional 1 TWh biomass power production (approx.. +1.5 GW);
- ▶ the “1 million rooftop solar panels” programme (to be achieved by 2030); and
- ▶ by 2030, renewable gas production in Austria shall amount to 5 TWh.

Financing Scheme

The costs associated with the operating aid scheme of the EAG (see below), hopefully bringing the new generation capacities into the market, are mainly borne by the electricity consumers – with several exceptions, in order to avoid cases of social hardship. The subsidies will be raised in particular by levying a flat-rate subsidy for renewable energy for each electricity metering point (Ökostrompauschale) and a subsidy contribution (EAG Förderbeitrag) for renewable energy that is due for every kWh purchased from the grid, but differentiated to grid levels. All final consumers connected to the public electricity grid (with the exception of pumped-storage power plants) will have to pay the renewable subsidy flat rate and the renewable subsidy contribution. Low-income households entitled to exemption from the ORF contribution ("household levy") (the Austrian fee for radio- and television consumption) should generally be exempt from the green electricity contributions.

Financial support schemes for green energy generation plants

A key aspect of the EAG Package concerns the financial support measures, with a volume of one billion euros targeted per year. These support measures take the form of either up-front investment grants or ongoing, variable market premiums for electricity production to compensate for the production costs of electricity from renewable sources and the average achievable market price for electricity. The market premiums can be

¹³ <https://practiceguides.chambers.com/practice-guides/alternative-energy-power-2021/austria/trends-and-developments/O8528>

determined either by an auctioning system, i.e. market based, or during a transition time, via an ordinance issued by the ministry in charge.

Shortly before Christmas 2021, the operating aid scheme in the EAG for the generation of electrical energy from renewable sources was approved by the EC under state aid law. The key points of the final amendment to the Renewable Energy Sources Act are:

- ▶ Introduction of technology-neutral tenders:
 - A tender volume of at least 20 MW per year will be reserved for joint tenders for hydro and wind power plants. Thus, two different “green energy sources” will compete for market premiums. As before, technology-specific market premium procedures (also for wind and hydro) will be carried out in parallel.
- ▶ Wind power now receives a one- instead of a two-year transition period until the introduction of tendering procedures:
 - From 2023, operators will have to apply for the market premium solely in competitive tendering procedures (see details in the next but one chapter).
 - However, the competitive approach will only apply to a limited extent to wind power plants under 20 MW and those operated by energy communities.
 - Their bids are automatically assigned the highest award value that is still successful.
 - This potentially can improve the economic situation of integrating wind power plants into energy communities.
 - It is possible to consume up to 50% of the generation of EAG subsidised wind power plants, in an energy community.
 - Only the electricity fed into the public grid that is not consumed by the EC can be granted with a market premium, however.
 - Application of a correction factor to take into account the different electricity yields of wind turbines depending on location (uniform premium or discount on the reference value to be applied for a standard site).
 - Commissioning deadline within 24 months from publication of the award
- ▶ Energy communities:
 - The much-discussed question is clarified that activities of a [CECs](#) or RECs are not subject to the trade regulations (Gewerbeordnung, GewO) – a trade license is therefore not required.
 - This also means that the generation plants of energy communities do not have to be licensed according to the business facilities law of the GewO, but are basically subject to the EIWOG regime. This does not result in any changes to the status quo.
- ▶ Pilot projects for transnational tendering procedures:
 - In order to make the market premium approvable, Austria has committed to open the market premium system (at least partially) to generators from other Member States, provided this is agreed in a corresponding bilateral or multilateral agreement (probably based on reciprocity).

The amendment was passed in the Parliament on 20th of January 2020. The provisions on the market premium, as well as most of the EAG implementing ordinances (which are 20 accompanying ordinances) are in force now.

4.4.1 Up-front investment grants

In addition, renewable-energy-sources-based electricity generation plants supplying energy communities are eligible for one-off investment subsidies. In general, one-off investment subsidies will be granted for the construction and expansion of photovoltaic plants and electricity storage facilities, as well as for the construction of new wind power plants up to 1 MW, depending on the respective ranking and the available subsidies.

In the following, more details are given for PV plants, which will be of relevance for the next two years already. The new erection of wind power plants for larger RECs, e.g. on regional level is not expected to appear within this or next year already, as such projects need more licensing and planning time.

Federal up-front investment grants for Solar PV (source: Federal Association Photovoltaic Austria, translated by AEA)

- ▶ One-off investment grants are one-time grants for PV and electricity storage systems. In the case of PV systems, each individual kWp is supported with a certain subsidy rate (€/kWp), and in the case of electricity storage systems, each individual kWh is supported with a certain subsidy rate (€/kWh or €/kWh).
- ▶ Applicable for
 - New PV systems/extensions up to 1,000 kWp
 - Electricity storage up to 50 kWh (minimum 0.5 kWh/kWp)
- ▶ Overview
 - The amount of the investment subsidy for PV systems varies with the size of the system.
 - The amount of the investment subsidy for electricity storage is fixed. The minimum size of the electricity storage unit is linked to the output of the PV system.
 - A fixed subsidy amount is applicable for PV systems up to 10 kWp only (the amount is not yet fixed and will be regulated by ordinance).
 - For PV systems above 10 kWp (categories B to D), there is a maximum subsidy amount (determined by ordinance), which can be undercut by the applicant, in order to be ranked higher in the list of subsidy projects and thus increase the chance of receiving a subsidy. Therefore, for systems in categories B to D, the specific funding requirement must be stated in euros per kWp when applying for funding:
 - Category A: PV systems up to 10 kWp (with/without electricity storage) -> fixed subsidy amount
 - Category B: PV systems > 10 to 20 kWp (with/without electricity storage) -> subsidy amount according to own specification or according to max. subsidy amount
 - Category C: PV systems > 20 to 100 kWp (with/without electricity storage) -> subsidy amount according to own specification or according to max. subsidy amount
 - Category D: PV systems > 100 to 1,000 kWp (with/without electricity storage) -> subsidy amount according to own specification or according to max. subsidy amount
- ▶ Other details
 - Funding budget for investment grants of total 60 million euros per year.
 - Funding calls are made at least twice a year.

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- The amount of the investment subsidy is determined for photovoltaic systems of categories B, C and D from the specified subsidy requirement per kWp; for electricity storage systems and photovoltaic systems of category A from the fixed subsidy rate specified by ordinance. It is limited to a maximum of 30% of the investment volume directly required for the construction or expansion (excluding land costs).
 - For photovoltaic systems erected on an area used for agricultural purposes or an area in grassland, the investment subsidy is reduced by a discount of 25%.; the discount is waived in whole or in part for the following systems (determined by ordinance):
 - Installations erected on an agro-PV area*, with the erection not or only slightly impairing the main agricultural use. (*a base area that is used simultaneously for electricity production by means of PV and for agricultural production).
 - Installations erected on or adjacent to a building or structure that was completed for a purpose other than the production of electricity from photovoltaic installations and at least three years prior to the date of application for support.
 - Installations erected on a body of water created by constructional interventions.
 - Installations erected on a closed or approved landfill site or a contaminated site.
 - Installations constructed on a mining or infrastructure site.
 - Installations constructed on a military training area.
 - For innovative PV systems, a surcharge of up to 30% can be provided by ordinance. Differentiation between types of installations is permissible. In all cases, the amount of the investment grant may not exceed 45% of the environmentally relevant additional costs.
 - The commissioning period limit for PV plants > 100 kWp is twelve months from publication of the investment grant, for smaller plants six months.
 - Since 1 January 2024, until 1 January 2026, VAT exemption has applied to the purchase and installation or rental of photovoltaic modules with a bottleneck capacity of up to 35 kWp, their accessories and storage units,
 - provided that these were purchased together,
 - provided that the photovoltaic system is operated on or near the following buildings (on a building or existing structure on the same property, e.g. garage, garden shed or fence)
 - buildings used for residential purposes,
 - buildings used by bodies governed by public law (e.g. municipality)
 - or buildings used for charitable, benevolent or ecclesiastical purposes.
 - For systems for which the VAT exemption does not apply (e.g. systems over 35 kWp or systems on company buildings), an application for funding can still be submitted via the Renewable Energy Sources Expansion Act (EAG) to the next funding call of the EAG processing centre (OeMAG).

Further federal investment grants for renewable energy and green gas generation plants

One-off investment grants for

- ▶ new construction of smaller wind turbines (20 kW – 1 MW) with an annual funding volume of one million euros;
- ▶ small hydropower plants < 2 MW with an annual funding volume of five million euros;
- ▶ plants for the conversion of electricity into hydrogen or synthetic gas > 0.5 MW, provided they are powered only by renewable electricity and used only for the production of renewable gas with an annual funding volume of 40 million euros.

Provincial one-off investment grants

- ▶ It is likely that some states also in future offer one-off investment grants for PV plants, on top to the federal investment grants. More details can be found here: <https://pvaustria.at/foerderungen>
- ▶ It is unclear if this will also apply to wind power plants.
- ▶ In all cases, the amount of the investment grant may not exceed 45% of the environmentally relevant additional costs.

Municipal one-off investment grants

- ▶ Some municipalities offer investment grants for private PV plants in the height of several 100 euros on top to the previous mentioned grants. More details can be found here: <https://pvaustria.at/foerderungen>
- ▶ In all cases, the amount of the investment grant may not exceed 45% of the environmentally relevant additional costs.

4.4.2 Market premium support scheme

Market premiums are generally to be granted for a period of 20 years. Also, renewable-energy-sources-based electricity generation plants of RECs and CECs are (partly) eligible within the market premium support framework.

- ▶ Electricity quantities generated (remark: from a generation plant eligible for a market premium) but not consumed within an energy community can be subsidised up to a maximum of 50% of the total electricity quantity generated within a community (remark: by that plant) by means of a market premium.
- ▶ The market premium is calculated based on the amount of electricity marketed by an energy community and fed into the public electricity grid. No market premium is due for the generation quantities (remark: from a generation plant eligible for a market premium belonging to the community) consumed by or allocated to the members or shareholders [EIWOG §80 (2)].
- ▶ **The described market premium provision is applicable for both, RECs and CECs; but only for renewable-energy-source-based generation plants eligible for a market premium affiliated with the energy community.**

The market premiums for wind and photovoltaic plants and biomass plants will be awarded based on competitive tenders (via an auctioning system), while those for hydropower plants as well as for smaller biomass plants and plants based on biogas will be awarded based on an application system. This application system would reward plants with a fixed feed-in tariff (remuneration price via ordinance) and ranked according to their level of self-consumption (the plants surplus electricity injection into the public electricity grid or subsidy requirement, respectively). Technologies and generation plant sizes eligible with an administratively determined market premium

- ▶ Newly constructed biogas plants < 250 kW_{el}, award volume of 1.5 MW_{el} p.a.

- ▶ New construction and expansion of hydropower plants up to 25 MW, revitalized hydropower plants < 1 MW (after revitalization), and revitalized hydropower plants with a bottleneck capacity > 1 MW (after revitalization) for the maximum first additional 25 MW, award volume of 100 MW p.a.

Technologies and generation plant sizes eligible with a market premium support based on market tendering

- ▶ Newly constructed and expanded wind power plants from 2023, award volume of 390 MW p.a.
- ▶ In addition, there will be a joint tender for wind and hydropower for MW per year.
- ▶ New PV systems and PV system expansions > 10 kWp, award volume of 700 MW p.a.
- ▶ New or repowered biomass plants < 5 MW_{el} (as well as the first 5 MW_{el} of newly constructed or repowered plants > 5 MW_{el}) by means of a tendered market premium, if a fuel utilization rate of at least 60% is achieved, award volume of 5 MW_{el} p.a.

A barrier related remark: Some lawyers believe that the 50% market premium cap, applicable for RECs and CECs only is an unconstitutional subsidy limit that inhibits decentralized green power production and weakens the energy transition. RECs and CECs, unlike all other plant operators, would not receive 100% but only a maximum of 50% of the energy generated by EAG eligible generation plants through market premiums.

4.4.3 Grid usage charge reductions for RECs only

- ▶ **Reduction of the energy price part of the grid usage charge for RECs**

According to § 5 para. 9 no. 1a of the Grid Usage Charge Ordinance, issued on 3rd November 2021, the energy price part of the grid usage charge for participating grid users of a renewable energy community (REC) in relation to that consumption which is covered by allocated fed-in energy of a generation plant pursuant to § 16c ElWOG 2010 (see above) shall be reduced

- in the local area (remark: RECs on a local level) for grid levels 6 and 7 by 57%;
- in the regional area (remark: RECs on a regional level)
 - for grid levels 6 and 7 by 28%;
 - for grid levels 4 and 5 by 64%.

The reduced energy prices shall be stated in the course of billing in cents/kWh and rounded to two decimal places.

- ▶ **Reduction of the power price part of the grid usage charge for RECs**

The power price part of the grid usage charge will eventually decrease for the members of the REC, as self-consumption from the power supply of the REC (per 1/4h) lowers the superimposed power drawn from the public grid to the corresponding REC member. The amount of decrease is related to the reduction possibility of peak load all time heights, as those determine the power price part of the grid usage charge. The public grid, or the higher network levels, are relieved in terms of power flow to the member of the REC, however, enabling more RES-E to be distributed via or connected to the grid, respectively.

- ▶ For CECs, such grid charge reductions generally do not apply, as there is no direct connection of the power plant to the consumer installation.

All grid-usage-charge-related price decreases also inherit additional VAT (20%) reductions.

4.4.3.1 Grid fees for electricity storage facilities

Grid fees fully apply to electricity storage facilities that are installed within the defined/relevant public grid area of an energy community for both

- ▶ storing electricity produced from generation plants owned by its members or by the community itself and
- ▶ stored electricity that is fed into the grid area for self-consumption purposes of its members (e.g. for electric charging of vehicles via the public grid).

This regulation also applies to any as described stored electricity that is delivered to market partners outside the energy community via the public grid (e.g. related to grid services or any other purposes).

There is, however, currently an opportunity to become exempted from (at least parts of) such grid fees for a limited period, if the energy community owning or operating the storage facility applies for becoming a “Regulatory Sandbox” project [EIWOG §58a 2010, GWG §78a].

4.4.4 Exemption from income tax, electricity levies and EAG subsidy contribution (per kWh; and temporary from lump sum)

Partial income tax exemption: According to the Income Tax Act 1998, income of natural persons from the feed-in of up to 12,500 kWh/a of electrical energy from PV systems is exempt from income tax if the system does not exceed the following limits:

- ▶ Peak power up to 35 kWp
- ▶ and connected load up to 25 kWp (the power contractually agreed for grid utilisation at the transfer point).

If the above conditions apply, this income tax exemption also applies to generators that are members of an energy community and supply electricity to members of an energy community for self-consumption.¹⁴

Partial exemption of the self-produced electricity from electricity levy

- ▶ The electricity levy is fixed and is charged for every kWh drawn from the public electricity grid.
- ▶ The Electricity Levy Act was revised on 14 February 2022. § 2 para. 4 stipulates that all renewable electricity producers are exempt from the electricity levy on self-generated and self-consumed electricity.
- ▶ A correspondingly adapted implementation ordinance is still pending. It has not yet been decided whether PV systems with a self-consumption of generated PV electricity of more than 25,000 kWh per year will be subject to the obligation to notify the tax office or keep records. This regulation applies regardless of participation in an energy community.

Pursuant to § 2 para. (1) no. (4) of the Electricity Levy Act (EIAbgG), electricity generated from renewable energy sources by electricity producers, including RECs pursuant to § 79 EAG, is exempt from the electricity levy if it is not fed into the grid but is consumed by these electricity producers, their participating authorised parties,

¹⁴ bmf.gv.at/rechtsnews/steuern-rechtsnews/aktuelle-infos-und-erlasse/Fachinformationen---Ertragsteuern/Fachinformationen---EST-KSt/erneuerbare-energie-gemeinschaften.html

members or shareholders; this applies to the electricity demonstrably consumed by the producers themselves on an annual basis. Before 01.07.2022 this exemption was applicable for PV-plants only.

If the public grid is used for the transmission of the electrical energy within the REC, this is not detrimental to preferential treatment. Under these conditions, members/shareholders of the REC are exempt from the electricity levy for the electrical energy they consume themselves and the electrical energy fed into the grid and consumed within the REC.

Partial exemption of the self-produced electricity from EAG subsidy contribution per kWh

The EAG subsidy contribution (EAG-Förderbeitrag), previously green electricity subsidy contribution (Ökostromförderbeitrag), no longer applies to energy from generation plants allocated to members of the RECs for own consumption.

- ▶ The renewable energy subsidy is calculated by the grid operator and is a fixed component of the electricity bill. **No renewable energy subsidy (per kWh) is payable for energy purchased from a REC.**

Temporary Renewable subsidy lump sum exemption due to extraordinary high energy prices on wholesale markets

The Renewable subsidy lump sum (EAG Erneuerbaren-Förderpauschale) in the year 2022, because of extraordinary high electricity market prices, was set to zero for all Austrian electricity consumers. Not only was the fixed flat rate of 42 euros that is charged for each electricity metering point at network level 7 (households) waived, but also the EAG subsidy contribution per kWh. The Austrian Parliament approved the package on 20th of January 2022 and prolonged it end of 2023. The average relief for each household is around 110 euros.¹⁵

- ▶ **Exemption from 2022 to 2024:** The time-limited exemption of both, the lump sum and the EAG subsidy contribution (per kWh) for all households applies from 2022 until the full calendar year 2024.
- ▶ **Temporary rather challenging environment for RECs:** The full exemption of all electricity consumers from the EAG subsidy contribution per kWh from 2022 to 2024 reduces the available benefits for REC members (compared to non-REC members).

Cost-benefit tool for energy communities

There is a public, freely available cost-benefit tool that easily allows calculating the monetary benefits of members of energy communities for a planned energy community, compared to a situation of being not part of an energy community, i.e. being a normal electricity consumer.

- ▶ energiegemeinschaften.gv.at/benefit-tool [Austrian Coordination Body for energy Communities]

¹⁵ parlament.gv.at/aktuelles/pk/jahr_2023/pk1420

4.4.5 Federal “one-stop shop” for and facilitator of uptake of energy communities

The Ministry of Climate Protection (BMK) commissioned the Austrian Federal Climate and Energy Fund to set up the “Austrian Coordination Office for Energy Communities” (energiegemeinschaften.gv.at).

The Austrian Coordination Office is a “one-stop shop”: not only is it a contact place for energy community actors and end consumers, but it also has the responsibility of making administrative procedures more efficient, faster and transparent. The implementation of energy communities should proceed in a unified manner at national level, and all relevant stakeholders shall pull together to create a real enabling environment.

The following figure shows the institutional set-up of the coordination office.

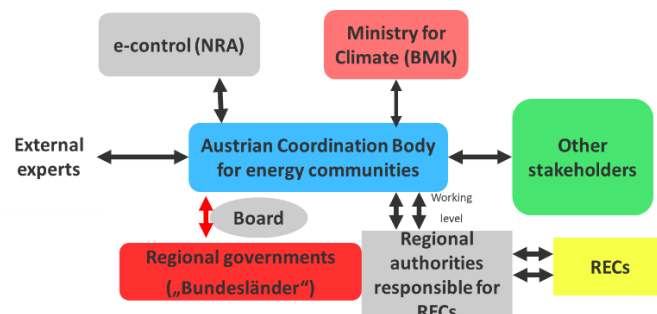


Figure 6: Bundled competence for energy communities „Austrian Coordination Office for Energy Communities“, (Gebündelte Kompetenz für Energiegemeinschaften „Österreichische Koordinationsstelle für Energiegemeinschaften“), AEA, adapted from Höbarth, I; Federal Austrian Climate and Energy Fund (Klima- und Energiefonds, Austria). 2021

The **main tasks** of the Austrian Coordination Office are:

- ▶ Advice on legal form of the energy community
- ▶ Develop a catalogue of typical energy communities
- ▶ Development of a subsidy programme
- ▶ Coordination with the Ministry of Climate (BMK), regulatory authority (E-Control) and regional governments (“Bundesländer“)
- ▶ Development of standard contracts
- ▶ Guidelines for founding a community
- ▶ Hotline
- ▶ Information campaigns
- ▶ Dissemination of good-practice examples and know-how
- ▶ Training for different actors

When work started, the Coordination Office had to provide quality-assured information and to work out a wide variety of practical implementations with pioneer energy communities. Therefore, the Climate and Energy Fund in September 2021 launched a program where projects with different structure and implementation status could compete for subsidies helping them to become reality. 4 million euros were offered for finally over 40 selected pioneer projects. Projects at different implementation levels (three levels) were subject to receive subsidies for implementation-related studies and support between 5,000 to 25,000 euros per project. The projects, the project reports including lessons learned and recommendations will be published.

As an independent service centre, it is intended to make entry into energy communities as low-threshold as possible. After the first years of operation, it is obvious that there is a great deal of interest in energy communities. Municipalities in particular are getting involved in relevant projects and setting a good example

4.5 Conclusions for Austria

In Austria, besides various types of collective actions that have no special nation-wide regulation, four different types of energy communities (ECs) have a nation-wide legal framework and have (partly even dedicated) support schemes they can benefit from.

Since 2017, “**collective community generation plants**” (“Gemeinschaftliche Erzeugungsanlagen”), basically corresponding to the German so-called “tenant electricity model”, have been introduced. In this model, tenants or owners in multi-apartment buildings, but also in office buildings or shopping centres, can join forces to collectively use a PV system or other renewable generation technologies. This concept has not been a real success story, however. The reasons are high administration and information efforts towards target groups for project developers. In general, there was low awareness among target groups about this concept and its benefits. An exception is Upper Austria where most of the 400 realized projects are situated.

In Austria, based on EU legislation (RED II and IEMD), two types of new energy market actors, so called **renewable energy communities (RECs)** and **citizen energy communities (CECs)** can be founded since July 2021, when the corresponding national legislation (EAG¹⁶ and ElWOG¹⁷) entered into force. The formation of energy communities (ECs) under Austrian law may be organised in any form of “legal entity”, be it an association, a cooperative, or even a limited or stock company, as long as it consists of at least two members and is entitled to exercise rights and be subject to obligations in its own name.

The applicable electricity network area and support schemes for RECs and CECs are quite different.

In this legislation, two types of RECs are defined.

- ▶ **RECs on a local level** can include members that are physically connected via grid level 6 and 7 (400 volt) on the low voltage side of a transformer. Rows or accumulations of rural houses or (local parts of) villages and industrial parks can form an energy community, given they are within the concession area of the same grid operator. In towns, as of meshed grid level 6 and 7 lines, whole urban quarters can be subject to the same REC on local level.
- ▶ **RECs on a regional level** can include members that are physically connected via grid level 5 to 7 and via the bus bar (grid level 4) of the medium/low-voltage side of a transformer substation. Here, as grid level 5 to 7 lines can be meshed, a whole or even several villages within a district can form a REC on a regional level, if it is within the concession area of the same grid operator. The number of members can be much higher and the generation of small hydropower or wind parks, biomass or larger PV plants can be included, e.g. via the grid level 4 (10 to 30 kV) bus bar.

On the local level, members of a REC – since 1 November 2021 – can benefit from a reduction of the energy price (i.e. variable) part of the grid usage charge by 57% for energy self-produced and used within the REC. At regional

¹⁶ Renewable Energy Expansion Act

¹⁷ Electricity Industry and Organisation Act

level, the reduction for grid level 6 and 7 members is 28% and 64% for grid level 4 and 5 members. The reduction for members connected to lower grid levels is lower as they also utilize grid levels 4 and 5 and cause grid costs there. Those grid charge reductions are not applicable for CECs, as their members can be everywhere within the national boarder, and therefore do not immanently lower grid loads in a defined region.

For all RECs electricity generated and at the same time consumed within the REC lowers electricity purchased from the public grid, also lowering the price per kWh part of the grid usage charge and the electricity levy. Furthermore, electricity generated and at the same time consumed within the REC is exempted from the green electricity subsidy contribution (EAG-Förderbeitrag). All charge reductions are also subject to 20% VAT, increasing the benefit of local RES-E generation and self-consumption.

In general, all legal framework conditions are in place to establish and operate ECs.

On the generation side, RECs can only operate RES-E plants, while CECs do not have such a limitation. Contrary to CECs, where only electricity related services for their members are allowed, RECs can engage in businesses related to renewable heat & cold and green gas too. In both EC cases, existing generation plants can become suppliers of electricity for its members.

Recent market activities show that there is an enabling environment in place that will allow especially RECs to be founded. A high interest in this area is coming from rural municipalities that can become a driver for market diffusion of RECs. It is expected that many RECs on local level are going to be founded in the next years. As many PV plants are existing at local level, lead time of local RECs are rather short. RECs on regional level are more complex and probably will involve new generation plants, with the new EAG subsidy schemes that are in force now those larger projects will need a longer lead time of one to two years.

How financially attractive the establishment and/or operation of RECs and CECs in connection with newly erected (larger) **renewable generation plants** (especially wind and biomass) will be, is **still uncertain**. Newly built renewable energy generation plants, depending on size and technology, can benefit from one-off investment grants or new market premiums under the Renewable Expansion Act (EAG). However, with regard to operating subsidies through market premiums (for larger plants) under the EAG, there are already doubts as to whether the **50% cap on the granting of market premiums for renewable energy generated by eligible larger plants**, applicable for RECs and CECs only, is sufficient to make projects viable. Some lawyers believe that this provision is an unconstitutional subsidy limit that inhibits decentralized green power production and weakens the energy transition. RECs and CECs, unlike all other plant operators, would not receive 100% but only a maximum of 50% of the energy generated by EAG eligible generation plants through market premiums.

In general, both, during the establishment and the ongoing operation of ECs, the network operator plays a very important role. Among other things, the grid operator is obliged to provide information about the grid connection (most grid operators already offer online portals where this can be checked easily and in real-time), to allocate energy quantities to ECs and other market partners, to make energy data (measured as well as calculated) available and to settle reduced grid tariffs.

For potential members of ECs a participation in more than one energy community is possible too. Participation with a consumption or generation facility in more than one joint generation facility, CEC or REC is permitted from 1 January 2024. The market processes required for this went live on 8 April 2024. Multiple participation has been possible in practice since this date.

At this point, the role of the **Austrian Coordination Office for Energy Communities** and the Austrian Federal Climate and Energy Fund (including its long-standing research and recent support program facilitating RECs) is therefore emphasized as part of the political measures beyond regulation – also as an **appeal to the member states** how important the **beyond regulation support** is. The Coordination Office is not only “primarily” a one-stop shop, but rather even an agency for the facilitation of energy community uptake, offering various services

from info-work to mentoring and advocacy for RECs. Funding program like that of the Climate and Energy Fund, which supported and monitored more than 40 RECs with different structures/compositions and progress in their implementations, are an important part to collect and share concrete experiences from the specially funded pioneers. Further funding programs followed. The results achieved by end of 2023 can be read in a recent study (downloadable [here](#), in German).

Equally important is communication about helpful information and tools which the Coordination Office offers.

Finally, the Coordination Office creates the confidence that the technically and regulatory complicated construct of RECs is feasible and – despite the former prevailing hegemony of the DSOs – will be driven forward in a fair and committed way. There are now, after all, a gratifyingly large number of interested players on the market.

The number of energy communities in Austria has risen almost exponentially since July 2021, reaching 1171 renewable energy communities and 147 citizen energy communities in 2024. The first energy communities have been in operation since the end of 2021. Since March of this year, there has also been an inventory of the current experiences of the energy communities. This study can be downloaded [here](#) (in German).

Legal foundations for the implementation of further, new market roles based on the Electricity Directive IEMD 2019/944 and the Renewable Energy Directive (RED) II 2018/2001 are missing so far. These new market roles are, on the one hand, the “active customer” pursuant to Art. 15 of the Electricity Market Directive and, on the other hand, the “self-supplier in the area of renewable electricity” pursuant to Art. 21 of the Renewable Energy Directive II.

The Electricity Industry and Organisation Act (EIWOG) currently regulates the grid-bound supply of electricity. A successor regulation is expected to come into force in 2024 – and take into account the transformation of the sector towards renewables. The new law shall implement the EU's Internal Electricity Market Directive 2019/944 and the Renewable Energy Directive 2018/2001. The new Electricity Industry Act (EIWG) is currently awaiting to be passed by the Austrian parliament, for which it needs a two-thirds majority. It is intended to ensure a targeted expansion of the electricity grids and e.g. a faster connection of solar power plants. Among other things, there should be more transparency about available grid connection capacities in future. The current draft also contains the following points:

- Introduction of the right to early installation of a smart meter, shortened installation and activation period
- Introduction of the term self-supplier
- Enabling peer-to-peer contracts
- Facilitation for energy communities
- Enabling flexible grid access by specifying a grid-active capacity
- Introduction of grid development plans for the distribution grid

5 | Bulgaria

5.1 Introduction

The model of energy communities is not widespread in Bulgaria, although the country has great potential for renewable energy, which could be beneficial for the high share of energy poor and vulnerable groups¹⁸ once smart and sustainable financial schemes for the utilization of the local resources are implemented. Despite the establishment of the country's first energy community in the spring of 2024, led by a local municipality, numerous bottlenecks continue to hinder the broader replicability of citizen-led initiatives in the energy sector.

The main proponents of the energy community concept remain environmental NGOs and national think tanks have put forward the ideas of energy citizenship in recent years. Citizen empowerment, laid down in strategic documents and EU legislation, does not fall among priorities of policy makers and national governments. Instead, national energy policy continues to follow the historically established top-down planning approach of centralized energy generation and encourages large scale projects which could result in state capture risks in the energy sector and unjust distribution of benefits in the society. A consistent approach towards the co-creation of policies supporting energy communities has not been established, partly due to political instability. Bulgaria has experienced five government changes in the past three years.

After significant delays and an official notification from the European Commission, the Bulgarian government transposed Directive (EU) 2018/2001 (RED II) into the Bulgarian Renewable Energy Source Act on October 13th, 2023. However, the definition of RECs and CECs in the national law closely mirrors that of the Directive, without additional specifications regarding the legal form or the rights and obligations of the participants. This lack of detail fails to ensure that the social and environmental benefits of creating energy communities take priority over economic gains. Furthermore, NGOs are already warning about the potential for corporate capture of the energy community model.

Before the transposition of RED II, national legislation did not explicitly forbid energy communities, but lacked special provisions for their formation and unrestricted functioning. **There were** a few examples of enthusiastic property owners coming together in energy communities-like projects. In all cases, participants invested equity funds or utilized grant schemes to implement solar heating and electricity generating measures in private multifamily buildings. However, more complex cooperation models were hindered by several factors: the absence of suitable financing schemes, burdensome permitting and administrative procedures, conditions related to operational modes of RES installations or other factors such as low levels of awareness and trust.

Nevertheless, the 2024 Update of the National Integrated Energy and Climate Plan encourages the promotion of local energy communities and their active participation in the energy market by prescribing the adoption of legislative measures for the decade until 2030. Nevertheless, the [2024 Update of the National Integrated Energy and Climate Plan](#) prioritizes accelerating renewable energy production and consumption, promoting renewable self-consumption, and developing renewable energy communities. However, the document lacks concrete

¹⁸ 30.1% of the population in Bulgaria is not able to keep their homes warm in 2019 (compared to an average of 6.9% for the EU) according to the latest Eurostat data. The majority of low-income citizens live in apartment buildings with shared property in residential neighbourhoods located on the outskirts of cities.

commitments, instruments, or financial incentives. It grants the right to dynamic electricity price contracts and aggregation contracts for demand optimization and mentions investment measures to promote household energy independence, focusing on energy communities and supporting energy-poor households, but without providing further details

The recently adopted amendments to the Bulgarian Renewable Energy Source Act, effective as of October 13th, 2023, outline three options for end electricity consumers. Firstly, consumers can form RECs as specified in the law. The legal text states that end consumers, including households can participate in RECs without compromising their rights or obligations, and without encountering unjust or discriminatory barriers. For businesses, it is stated that their participation must be distinct from their primary commercial or professional activities, but no further requirements on how to demonstrate this are provided. RECs are empowered to produce, consume, store, and sell surplus energy from renewable sources on equal terms in energy markets, including through power purchase agreements. They must fairly distribute energy produced within the community among its members while upholding their consumer rights and obligations. Additionally, according to the law, the energy communities must have non-discriminatory access to all relevant energy markets.

5.1.1 List of relevant laws and regulations

- ▶ [Energy Act \(EA\), Закон за енергетиката, in force since 09.12.2003, available at \[Link\]](#)

EA regulates the public relations associated with the activities of generation, import and export, transmission, transit transmission, distribution of electricity, heat and natural gas, oil and oil product transmission through pipelines, trade in electricity, heat and natural gas. Further, it determines the rights and the powers of state actors in formulating energy policy, regulation and control (Art. 1, EA).

The Act is accompanied by secondary legislation for its implementation, which regulates: licensing and permitting activities related to energy infrastructure; technical exploitation and operation standards of power stations, grids and equipment; terms of granting access and procedures for connecting generators and consumers to the electricity transmission/distribution network; management of the electricity system; metering and trading of electrical power; institution of restrictive regimes, temporary suspension or limitation of the generation or delivery of electrical power, thermal power and natural gas.

- ▶ [Renewable Energy Source Act \(RESA\), Закон за енергията от възобновяеми източници, in force since 03.05.2011, updated in October 2023 to transpose EU legislation on energy communities and collective action into the national one. Available at \[Link\]](#)

RESA regulates the public relations associated with the stimulation of the generation and consumption of electricity, energy from renewable sources for heating and cooling, as well as biofuels, biogas and renewable energy in the transport sector (Art 1, 2 RESA).

The definition of RECs outlined in the national law closely mirrors that of the Directive, with no additional specifications. They are portrayed as flexible entities, not bound by specific legal structures, marked by open and voluntary participation. Emphasizing independence, they are effectively governed by their shareholders, partners, or members. These communities own and operate renewable energy installations within urbanized areas, with the energy produced consumed by stakeholders. Comprising a diverse mix of individuals, small and medium-sized enterprises (SMEs), or municipalities acting as shareholders, partners, or members, the primary goal is to deliver environmental, economic, or social benefits to stakeholders or the regions served, prioritizing these outcomes over purely financial gains. This definition underscores the community's commitment to sustainability and community-driven progress.

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- ▶ [Spatial Planning Act \(SPA\), Закона за устройство на територията, in force since 03.05.2011, available at \[Link\]](#)

The construction and the development of power plants are further regulated by standards of urban planning and development of land laid down in SPA. Section I of the Acts regulates the coordination and approval of investment projects, including these for renewable energy generation. According to Art. 147 RES installation with installed capacity up to 1 MW do not need to be subject to a construction permitting procedure.

- ▶ [Environmental Protection Act \(EPA\), Закон за опазване на околната среда, in force since 25.09.2002, available at \[Link\]](#)

Pursuant to the Bulgarian Environmental Protection Act, the environmental authorities are obliged to conduct public discussion in environmental impact assessment procedures and to publicise its decision regarding the assessment of investment projects, including in the energy sector. The investor and the nature conservation organisations are entitled to appeal before the administrative court the decision on an environmental impact assessment as a prerequisite for the realisation of the investment project.

- ▶ [Ordinance № 1 as of 14.03.2017 on Regulating the Prices of Electric Power, Наредба № 1 от 14.03.2017 г. за регулиране на цените на електрическата енергия, in force since 24.03.2017, available at \[Link\]](#)
- ▶ [Ordinance № 6/24.02.2014 on Connection of Producers and Customers of Electricity to the Transmission or Distribution Electrical Networks, Наредба № 6 от 24.02.2014 г. за присъединяване на производители и клиенти на електрическа енергия към преносната или към разпределителните електрически мрежи, in force since 04.04.2014, available at \[Link\]](#)
- ▶ [Ordinance № RD-16-1117 of 14.10.2011 on the Conditions and Procedure for Issuing, Transferring, Revoking and Recognizing Guarantees of Origin of Energy from Renewable Sources, Наредба № РД-16-1117 от 14.10.2011 г. за условията и реда за издаване, прехвърляне, отмяна и признаване на гаранциите за произход на енергията от възобновяеми източници, in force since 28.10.2011, available at \[Link\]](#)

5.1.2 Structure and actors of the energy market

For years, the two main pillars of Bulgaria's electricity production sector have been coal and nuclear, each contributing around 40% to the national mix. In 2020, electricity generation from renewable energy sources, including hydro pump storage, accounted for 21%. While Bulgaria's coal-fired power proved key to keeping neighboring countries' energy systems running during the 2022 energy crisis – allowing Bulgaria to sell €3 billion worth of electricity and making it the EU's second-largest exporter after Sweden that year- Bulgaria's coal-fired power plants halved their electricity output in 2023, while solar farms increased production by 141% compared to the previous year.¹⁹ Lignite-fired power generation fell by 46% and power generation from lignite and brown coal plants fell by 51%.

¹⁹ Source: EWRC

Historically, Bulgaria has been a major producer and exporter of electricity in the region and plays an important role in the energy balance on the Balkans. However, the country’s energy market is dominated by state-owned players with major market share in the energy industry.

The largest one is the Bulgarian Energy Holding which possesses several companies engaged in electricity generation, supply, and transmission – these are the National Electricity Company, Electricity System Operator, Kozloduy Nuclear Power Plant and the thermal power plant Maritsa East 2. They produce around 60% of the electricity in the country by using lignite, nuclear, and hydro power. The National Electricity Company (NEC) is the only buyer from the power generators on the high voltage grid and is legally responsible for purchasing electricity generated by renewables, industrial producers, and combined heat and power plants (CHP) at regulated prices. Additionally, it is the only provider of electricity at regulated retail prices for end users. The management of the high- and medium-voltage electricity transmission grid is held by the Electricity System Operator (ESO), which implies that its transmission system is used by all market players. Another company that has a key role in the electricity market and is owned by the Bulgarian Energy Holding is Bulgargaz EAD. It is the largest importer of natural gas in the country, mainly supplying with Russian gas.

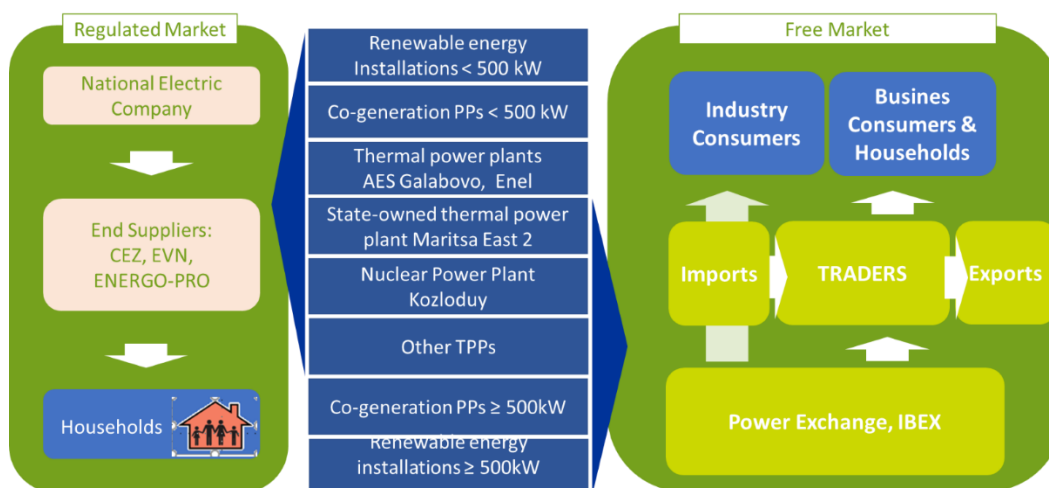


Figure 7: Structure of the Bulgarian electricity market, Own visualization based on Association of Bulgarian energy traders

As part of the electricity market liberalisation process in Bulgaria, currently two segments are functioning – a segment with regulated prices and a segment with freely negotiated prices, or the so-called free market. An overview of the current structure of the electricity market is illustrated by Figure 7 above.

In the **regulated segment**, the prices of electricity are determined by the Energy Regulator, and the consumers are served by the final suppliers (subsidiaries of the electricity distribution companies), distributed on a territorial basis. Distribution system operators are responsible for the maintenance of the infrastructure and quality of supply. The country is divided into three main regions, each of which is covered by a different distribution system operator (DSO) enjoying regional monopoly. Eurohold Bulgaria, through its wholly-owned subsidiary based in Netherlands Eastern European Electric Company, covers the western territory of the country, including the capital Sofia, serving over 2 million customers. ENERGO-PRO, on the other hand, is licensed for power supply in North-eastern Bulgaria, including the town of Varna, addressing the needs for more than 1.2 million end users, while the Southern Bulgarian customers (1.5 million) are supplied with electricity by EVN Group. ENERGO-PRO is part of Czech, while EVN is owned by an Austrian company. Eurohold Bulgaria completed its acquisition of the former Bulgarian DSO CEZ in 2021.

In line with the ongoing liberalization of the electricity market, on 26.06.2020 amendments to the Energy Act were adopted, according to which after 01.10.2020 only household consumers will continue to be served by final suppliers, provided they have not chosen another supplier. The incentives of entering the free market and

purchasing electricity through negotiation are limited. Currently, such type of action is not profitable since the price paid for electricity consumption on the regulated market is kept artificially low and remains more attractive. In its National Recovery and Resilience Plan (NRRP), Bulgaria committed to eliminating regulated final household customer prices by the end of 2024, transitioning to a liberalized electricity market. The current energy law scheduled the liberalization to begin on July 1, 2024, with completion by early 2026. However, in light of the significant energy price hikes in 2022, the move to complete market liberalization became highly contentious, especially among populist parties. While liberalization promised diversified options and market competition, it also risked causing constant price fluctuations and potential civil unrest. In April 2024, the Bulgarian parliament decided to delay the electricity market liberalization by another year, jeopardizing the NRRP implementation and risking the loss of BGN 1.3 billion from the financial instrument.

After 2020 all non-domestic (business) customers buy electricity on the free market. Therefore, investments in renewable energy capacities for own consumption is currently more attractive for the business and industry players, paying higher electricity prices than the domestic prosumers. Energy that is not necessarily bought at regulated prices can be sold on the **free market**, where transactions take place between producers, energy traders and consumers. Customers are free to change their electricity supplier. Regardless of the electricity supplier, the network operator remains the same. Consumers continue to pay for power transmission/distribution and access to the network to which they are connected. Grid tariffs are set by the national Energy and Water Regulatory Commission. On the **free market**, electricity is purchased by traders and industrial end consumers at freely negotiated prices. They could also purchase power on the Bulgarian Independent Energy Exchange. With the amendments to the Energy Act as of May 2019, all producers of energy from renewable energy sources with an installed capacity of more than or equal to 1 MW must offer their electricity on the power exchange. Producers can sell electricity on the exchange independently or through a balancing group coordinator.

All participants in the free market (including small energy producers) are subject to balancing, which is the compensation for the difference between the consumed/ produced energy and the projected quantities of energy defined in the contracts. Renewable energy producers participate have to enter in an agreement with in combined **balancing groups**. In the case of the small solar PV installations, this is the DSO itself. The DSO balances the differences between generated and consumed electricity according to a generation timetable approved in the agreement. According to the procedures currently in place in Bulgaria, the production timetable has to be submitted by the producer in advance, typically for a period of one year. In case of deviations from the schedule, the producer is required to pay an imbalance penalty.

One of the largest consumers are households, following the transport and industry sectors. According to Eurostat data, as of 2022 household consumption accounts for 22 % of final energy use with 17% for water heating, 8 % for cooking, and 53% for space heating.²⁰ Following the conclusions from the EU Energy Poverty Observatory, Bulgarian households are one of the most vulnerable groups with regards to energy poverty. Bulgarian households are highly price sensitive and struggle in covering their energy bills. Additionally, the constantly rising electricity prices incite them to search substitutes like coal and wood that have negative impact on the environment. However, the concept of energy poverty remains poorly defined despite reforms introduced in the

²⁰

Eurostat,

[https://ec.europa.eu/eurostat/statistics-](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_consumption_in_households#Use_of_energy_products_in_households_by_purpose)

[explained/index.php?title=Energy_consumption_in_households#Use_of_energy_products_in_households_by_purpose](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_consumption_in_households#Use_of_energy_products_in_households_by_purpose)

NRRP. While some advances were made in 2023, clarity on the definition and parameters of energy poverty is still lacking. Respectively, a mechanism for just and non-discriminatory distribution of the difference between market-set and regulated prices born by the retails is not set out. The household electricity prices in the country have increased from 8.13 euro cents/ kWh in 2010, to 9.93 euro cents/ kWh in 2023, excluding taxes and levies.²¹ A moratorium on prices of electricity, water, and heating was adopted in the end of 2021, preventing the households from the inflation in the sector until 31st March 2022, regardless of events in individual markets.

According to Art. 6, item 1 of ZEVI, EWRC sets **preferential prices** for the purchase of electricity from renewable sources, produced from energy sites with a total installed capacity of less than 1 MW, in order to promote the production of electricity from renewable sources. This only applies to electricity produced from sites with a total installed capacity of less than 1 MW, which were applied for connection before 27.12.2013. This is the date of the report of the Minister of Energy, which stated that the overall national target of 16% total the share of energy from renewable sources in gross final energy consumption was achieved. Preferential prices for new sites for production of electricity from renewable sources are provided only to sites with a total installed capacity of up to 30 kW inclusive, which are planned to be built on roof and facade structures of buildings connected to the electricity grid and on real estate in urbanized areas. Renewable electricity produced from sites with a capacity of more than 1 MW for which preferential prices have been set is now supported by premiums. This means, that they are selling the produced energy at market prices on the **Independent Bulgarian Energy Exchange** and are compensated for the difference between the market price and the preferential prices granted in 2010, 2011 and 2012.

The **Ministry of Energy** is the state institution that conducts the energy policy of the Republic of Bulgaria and principal of the state-owned energy companies. As the principal state institution overseeing energy affairs, it shapes and implements policies that influence the entire energy ecosystem. The Ministry bears the responsibility for energy system planning, including the drafting of national strategic documents such as the National Energy and Climate Plan as well as the Climate Neutrality Roadmap. These documents could serve as instrumental tools in providing targets regarding the participation of renewable energy communities in the future energy mix. Additionally, the Ministry is tasked with initiating legislative changes to transpose European regulations regarding energy communities, facilitating a legal framework conducive to enhanced citizen participation in the energy sector. However, thus far, the Bulgarian Ministry of Energy has adopted a more conservative approach toward the energy communities framework. Furthermore, as the principal overseer of state-owned companies managing substantial energy generation facilities, the Ministry appears to prioritize large-scale and centralized project development in its policy implementation. Efforts to introduce greater flexibility and regulations among different actors to stimulate engagement in energy communities have primarily been driven by the obligation of the Bulgarian state to transpose EU directives, a process marked by 2 years delay and numerous reminders from national and international stakeholders as well as official notification procedures from the European Commission. Notably, there has been a lack of strategic documents, technical assistance programs, guidelines, or institutional procedures initiated by the Ministry to encourage the replication of renewable energy community models and support such citizen initiatives.

The **Energy and Water Regulatory Commission** determines annually preferential prices for the purchase of electricity from renewable sources. The authority approves annually until June 30 the amount of electric power

²¹ Eurostat data, https://ec.europa.eu/eurostat/databrowser/view/nrg_pc_204/default/table?lang=en

from renewable energy sources that could be connected to transmission and distribution electrical networks structured by connection areas and voltage levels and publishes the data on its webpage.

Guarantees of energy origin are issued by the **Agency for Sustainable Energy Development (AUER)**. One unit covers the power generation of 1 MWh, valid for 12 months. The certificate contains at least the following information: the renewable source used for energy production; start and end date of production of energy from renewable sources; kind of the energy produced; name, location, type and general installed power of the energy site where the energy was produced; support schemes used; date of introduction of the energy site in operation; date and place of issue; unique ID. The Agency shall establish and maintain an electronic register of guarantees of origin, data from which he publishes on his website.

The Agency has been entrusted with a significant responsibility following recent changes in Bulgarian legislation. This responsibility involves conducting a comprehensive gap analysis to identify all barriers hindering self-consumption and the development of energy communities in Bulgaria following the transposition of RED II. Stakeholders have extensively discussed and proposed that the Agency establish and maintain a register of registered energy communities in the country. Furthermore, it is envisioned that the Agency will serve as a high-level coordination body for the national one-stop shops or single points of contact for citizen initiatives.

However, despite these anticipated roles, the Agency faces several challenges. Institutional capacity, insufficient financing, and a shortage of human resources present significant hurdles. Overcoming these challenges will be essential to effectively fulfilling the Agency's mandate and facilitating the growth of self-consumption and energy communities in Bulgaria.

Non-governmental organizations (NGOs) play a pivotal role in advocating for and advancing the energy communities model, fostering public awareness, and enhancing capacity-building efforts related to citizen energy governance and participation in energy transitions. Among the most active NGOs in Bulgaria are:

- **Greenpeace:** Greenpeace, as part of RESCoop, has been actively engaged in policy-making processes for the past 4-5 years. They provide proposals for legislative amendments, draft recommendations, and make statements to the Parliamentary Committee on Energy. Greenpeace has also developed a comprehensive Handbook on energy community model management and advocates for replicating successful models from other countries, including enabling net-metering and virtual metering practices.
- **Black Sea Energy Research Center:** This organization has launched a national informational portal aimed at supporting enthusiastic citizens and institutions interested in energy community initiatives. The platform offers legal consultation, Q&A sessions, guidelines, model documents, and useful references to financing and administrative resources.
- **Centre for the Study of Democracy:** This NGO promotes self-consumption and provides policy advice on good governance in the energy sector. They organize working groups to inform the legislative process and offer concrete recommendations to policymakers.
- **Habitat for Humanity:** This organization advocates for easing administrative permitting procedures for micro-installations and creating more favorable conditions for building energy communities to support efforts against energy poverty.
- **WWF:** WWF has launched a platform for consulting the updated National Climate and Energy Plan, demanding a concrete share of Renewable Energy Certificates (RECs) in the plan. They work to ensure that renewable energy sources are prioritized in national energy strategies.
- **For over 25 years, EnEffect** has served as the Secretariat of the Municipal Energy Efficiency Network EcoEnergy. In this capacity, they provide invaluable assistance to local authorities in crafting policies aimed at optimizing energy resource usage and fostering sustainable energy development. Leveraging their extensive expertise accumulated over the years, EnEffect has emerged as a proactive advocate and collaborator, facilitating municipal engagement in Renewable Energy Community (REC) initiatives. Through their dedicated efforts, EnEffect has positioned itself as a trusted partner for municipalities seeking to embrace REC projects and initiatives.

- SOFENA and the Plovdiv Energy Agency, Stara Zagora Economic Energy Agency also put efforts to provide concrete tools, informational materials and advices to the local population. All of them are supporting demonstration projects.

These NGOs collectively contribute to shaping the energy landscape in Bulgaria by providing expertise, advocacy, and support for initiatives aimed at promoting sustainable and community-driven energy practices. Through their efforts, they empower citizens and institutions to actively participate in the energy transition and contribute to a more sustainable future.

5.2 Community energy and collective actions

The concepts of community energy and collective action gained regulatory recognition and legal status in Bulgaria through the transposition of the RED II directive into the Bulgarian Renewable Energy Source Act on October 13th, 2023. Under the new legal framework, energy communities extend beyond individual buildings, encompassing entire populated areas, and are characterized by dispersed systems and infrastructure interconnected through a distributed network. They are portrayed as flexible entities, not bound by specific legal structures, emphasizing independence and governance by shareholders, partners, or members. These communities own and operate renewable energy installations within urbanized areas, with energy consumption benefiting stakeholders. Participants include a diverse mix of individuals, small and medium-sized enterprises (SMEs), or municipalities, prioritizing environmental, economic, or social benefits over financial gains.

Alternatively, end electricity consumers can generate renewable energy individually or collectively for personal use, accessing all segments of the free energy market. The Renewable Energy Act expands the scope of RECs to include heating and cooling, utilizing various renewable sources. Recent regulatory amendments aim to streamline project implementation processes and reduce administrative procedures, facilitating the development of renewable energy projects. However, the definition of "proximity" and urbanized territories lacks clarity, leading to ambiguity in determining local origin.

While individuals, SMEs, and municipalities are eligible to participate in energy communities, current legislation lacks explicit regulations ensuring equal treatment of members. Permitted activities include participation in all energy markets, internal sharing of energy, and non-discriminatory access to relevant energy markets. The law introduces the concepts of "Consumer of Own Electricity from Renewable Sources" and "Jointly Acting Consumers of Own Electricity from Renewable Sources," providing flexibility in how energy is shared within communities.

RECs must have a legal form without further specification of one, allowing flexibility in organizational structure, and require registration in the Commercial register. Financial benefits and funding for RECs lack specific sources or schemes, such as specific bank loans or targeted external funding to assist low- and middle-income households and SMEs. Despite advancements, there is a notable absence of financial incentives to drive renewable heat energy initiatives forward, although administrative procedures have been simplified. The complex nature of administrative procedures, coupled with the necessity for extensive technical and legal knowledge, pose significant challenges for citizen-led initiatives in this field. Without a clear understanding of these aspects, individuals struggle to initiate or participate in renewable energy projects.

5.3 Energy communities

The concept of Renewable Energy Communities (RECs) remains relatively new in Bulgaria, despite increasing interest from citizens and businesses, particularly in solar energy. While collective investment is still unfamiliar, there are two standout initiatives demonstrating best practices.

The first initiative, initiated at the end of 2023 and officially established in January 2024 by the municipality of Gabrovo, is led by the local administration. This initiative represents Bulgaria's pioneering energy community, aligning with national and European legal definitions. With 73 members, including residents of Gabrovo municipality and other regions of Bulgaria, as well as legal entities, the community boasts diversity in age and professional backgrounds. Their common goal is to contribute to innovative green energy approaches, deepen their understanding of collective citizen actions, and invest in clean alternative technology. The investment model involves installing photovoltaic panels on the roof of the Regional Landfill for Non-Hazardous Waste of the Municipality of Gabrovo, generating 100 kWh of electricity. Fifty-two percent of the produced energy is used on-site by the Municipality of Gabrovo, with the remainder distributed among other community members or sold on the open market. Community members pay for the energy consumed based on agreed terms, with surplus electricity sold on the open market by the Municipality of Gabrovo. All revenue from energy consumption remains within the community, with surplus funds distributed among members after deducting maintenance and operational expenses. The total investment amounts to almost BGN 156,000, with individual members contributing between BGN 500 and BGN 5,000 each through crowdfunding.

The genesis of the second initiative arose from a small group of citizens addressing a pressing local issue. The concept of establishing an energy community emerged from extensive research into potential solutions for the primary concern of residents of Belozem village - reliance on electricity for local water supply, leading to recurring shortages during power outages, especially affecting domestic water needs supplied through water pumps. Inspired by successful strategies in Western Europe, the viability of an energy community model became evident. Led by two visionary brothers, the energy community "Izgrei.BG" was established nearly two years ago, currently comprising four members. Structured as a Limited Liability Company (LLC) in accordance with national regulations, the community embarked on a journey toward self-sufficiency. Despite its small size, once completed, the project will provide autonomy, securing access to electricity, water, and the capacity to cultivate food crops. The investment involves refurbishing two adjacent structures and installing a 4kW solar array tailored for self-consumption, with surplus energy capable of being fed back into the grid.

5.4 Support Schemes

Bulgaria has not yet adopted financial measures or incentives specifically for collective actions or energy communities. Currently, negotiations are underway for single schemes, rather than a comprehensive policy, to provide technical assistance under the Territorial Just Transition Plan for regions identified as coal-dependent. However, this chapter outlines the general policy framework supporting renewable energy.

According to the latest legislation preferential tariffs apply only to small producers of electricity from renewable sources which is injected into the public grid. The amount of the tariff is determined annually by the Energy and Water Regulatory Commission by the end of June. For the current regulatory period, covering 01.07.2023-30.06.2024, the following FITs were determined (all values exclusive VAT):

- ▶ Rooftop or building-integrated photovoltaic power plants with installed capacity up to 5kW: 106.77 Euro/MWh for the first 1406 kWh/kWp.
- ▶ Rooftop or building-integrated photovoltaic power plants with installed capacity up to 30kW: 88.40 Euro/MWh for the first 1406 kWh/kWp.

The Regulator determines also annually feed-in-premium rates for renewable energy producers which used to receive preferential prices and are a contractual party with the Bulgarian Fund “Energy system security” since 2018. As of 1 July 2018, the statutory obligation of NEK and the other off takers to purchase the energy output of renewable energy producers under feed-in-tariffs is terminated. Renewable energy producers who have used long-term power purchase agreements and feed-in-tariffs are offered to execute premium contracts with ESSF by July 1, 2018. Furthermore, the Bulgarian Regulatory Commission updates annually preferential prices for electricity produced from biomass, considering the pricing elements such as costs of raw materials for energy production, costs of transport fuels.

The amended Energy Act regulates those projects put into operation after January 1, 2021, are exempted from paying 5% of revenue to the Electricity System Security Fund. The levy was originally introduced on FIT projects in 2015 as a measure to fund the Energy System Security Fund. The rule doesn’t apply for rooftop solar power installations which are entitled to preferential prices.

The National Recovery and Resilience Facility, which is the main component of NextGeneration EU financial package plans incentives for decentralised generation and consumption of renewable energy, as well the introduction of alternative business models. The proposals include one-stop shops for operators of renewable power plants, a simplification of the administrative procedures, and an evaluation of other countries’ existing mechanisms for financing energy efficiency. They introduce the so-called “low-carbon energy self-consumption models in combination with the energy bills”. The design of the latter model resembles the net-metering scheme that is widely applied in Europe, although it is not explicitly formulated as such. The document anticipates that there will be more use of renewable energy in households (the Green Bulgaria Pillar) and in business sectors (the Innovative Bulgaria Pillar) aiming at the introduction of renewable energy auctions. However, specific rules for energy communities are not mentioned and the action seems to give advantage to larger plants judging by the proposed the auctions’ design.

From an administrative perspective, amendments to the Spatial Development Act in 2019 removed the requirement for rooftop and façade solar PVs up to 1 MW to have an approved investment plan in order to obtain a building permit. Furthermore, such installations do not require a formal commissioning if they are not connected to the grid. Simplification of the procedures of connecting distributed renewable energy sources are foreseen by the Ministry of Energy as stated in a public discussion in February 2022.

5.5 Conclusions for Bulgaria

Policy documents and legislative proposals recognize the importance of community energy and citizen empowerment in Bulgaria. The National Integrated Energy and Climate Plan encourages the promotion of local energy communities and their active participation in the energy market. However, the Bulgarian energy policy still follows a top-down planning approach of centralized energy generation. Large scale projects are encouraged instead of citizen actions. The legislative framework for community energy is missing and the concept of energy

communities – as provided by the EU legislation – has been introduced very broadly not allowing citizen energy models to deploy all possible benefits. Financial support for collective actions is still very limited encompassing EU level instruments for technical assistance and learning by peers.

Improving the transposition of the Internal Energy Market Directive (IEMD), Renewable Energy Directive II (RED II), and upcoming RED III is crucial for establishing an effective legal and supporting framework that enables citizens to form energy communities, thereby leveraging renewable energy potential and alleviating energy poverty. The lack of well-defined legal status for prosumers, energy communities, and collective action initiatives, alongside unclear delineation and legal practices concerning their rights and obligations, constitutes a significant obstacle. This ambiguity hampers these entities from providing supplementary services to their members and effectively contributing to the broader energy system.

Furthermore, while energy sharing is theoretically permitted, several complications arise in practice. Restrictions often limit sharing to customers of the same traders, and opportunities to optimize grid and network costs are missed. A significant challenge for energy sharing lies in the absence of virtual/net metering. Key regulatory requirements governing Renewable Energy Communities (RECs) are currently lacking, including defining technical specifications and standards for commercial measurement devices to ensure accuracy and reliability in energy measurement. Additionally, functionalities that measuring devices must possess to accurately measure and report energy production and consumption within the community need to be outlined. Moreover, protocols for data transmission between energy measurement devices and relevant stakeholders, as well as for ensuring data security and integrity against unauthorized access, must be established. Furthermore, determining the types of data to be collected and reported by measuring devices, and establishing a centralized database of energy consumption and production data, are crucial aspects. These barriers not only hinder the efficient utilization of renewable energy resources but also impede access to public and bank financing avenues.

Furthermore, Bulgarian households still purchase electricity at regulated prices, which are subsidized and kept low, reducing their incentive to share locally generated power. Consequently, the potential annual savings from energy sharing may not justify the formation of a community. Additionally, there is a lack of established practices for energy communities to develop internal rules for energy sharing. In practice, self-consumers seeking to feed surplus energy into the system must have special contracts with electricity traders. When part of a REC, energy sharing is only possible if all members have contracts with the same trader. Therefore, energy sharing in Bulgaria requires greater attention from policymakers to become a viable option, especially as the household segment becomes liberalized in the upcoming years.

Moreover, in line with IEMD, Bulgaria should determine criteria for identifying households in a position of energy poverty, taking into account the criteria in the Directive, such as low-income, high-energy costs as a share of the available income, and low energy efficiency. This shall allow to make an estimation of the number of households in a position of energy poverty, possibly setting an indicative target to reduce this number as well as designing and enabling adequate instruments.

Bulgarian energy legislation needs further amendments and changes which address the issues of unclear pricing conditions for surplus renewable generation, combined with the imposition of numerous fees, taxes, and surcharges on owners/developers of distributed solar PV projects. The implementation of virtual/net metering concepts is hindered by inconsistencies in the framework designed to incentivize the distribution of smart meters and the standardization of electrical equipment for metering installed by the Distribution System Operators (DSOs).

6 | Croatia

6.1 Introduction

For the last few years, the energy sector in Croatia has seen an increase in distributed energy production from renewable energy sources (RES). At the same time, participation in the electricity market is increasingly opening with continuous removal of various barriers, either through the inclusion of citizens in investments (crowdfunding) or through encouraging the development of innovative approaches, new services, technologies and organizational forms such as energy cooperatives and communities.

RED II and IEMD requirements on energy communities have formally been transposed in 2021. Energy communities have been introduced in the Croatian legislative system via two main laws, that were further amended in July 2023. The first one is the Law on the Electricity Market (Official Gazette nr 111/21, 83/23), defining citizen energy communities (CEC) which was adopted in October 2021 and amended in 2023. The second one is the Law on Renewable Energy Sources and High-Efficiency Cogeneration (Official Gazette nr 138/21, 83/23), defining renewable energy communities (REC) which was adopted in December 2021 and amended in 2023. Both acts define jointly active customers, with some overlaps in this segment.

The current legal and regulatory framework, although formally recognizing energy communities and their different forms of market participation, is unclear in some segments with overlaps, and the procedure it defines for setting up CECs and RECs is complex and costly.

6.1.1 List of relevant laws and regulations

As already mentioned in the introduction, in Croatia there are two laws which mention energy communities directly:

- ▶ [Electricity Market Act \(Official Gazette nr 111/21, 83/23\)](#) - gives the definition of citizen energy communities and their rights and obligations as well as jointly active consumers
- ▶ [Renewable Energy Sources and High-Efficiency Cogeneration Act \(Official Gazette nr 138/21\), 83/23-](#) defines renewable energy communities and jointly active consumers using RES for self supply

Other laws/regulations important for the field of energy communities are:

- ▶ [Act on Regulation of Energy Activities \(Official Gazette nr 120/12, 68/18\)](#) - regulates the establishment and implementation of the system of regulation of energy activities, the procedure for establishing a body for the regulation of these activities, as well as other issues of importance for the regulation of energy activities
- ▶ [Regulation on General Terms for the Grid Use and Electricity Supply \(100/22\)](#) – establishes the rules and conditions for the use of the electricity grid and provisions of electricity supply.
- ▶ [Strategy of energy development of the Republic of Croatia until 2030 with a look at 2050 \(Official Gazette nr 25/20\)](#) - represents a wide range of energy policy initiatives, which will strengthen security of energy supply, gradually reduce energy losses and increase energy efficiency, reduce dependence on fossil fuels, increase domestic production and use of renewable energy sources.
- ▶ [The Energy Act \(Official Gazette nr NN 120/12, 14/14, 95/15, 102/15, 68/18\)](#) - regulates measures for secure and reliable energy supply and its efficient production and use, acts determining energy policies implemented and energy development planning, performing of energy activities (on the market or as public services) and basic issues related to performing energy activities

- ▶ [Integrated National Energy and Climate Plan for the Republic of Croatia for the period 2021-2030 \(NECP\)](#) sets key strategic goals for RES and EE for the upcoming period. It does not, however specifically mention energy or renewable communities while NECP was prepared prior to introduction of energy communities in the Croatian legislation.
- ▶ [Low Carbon Development Strategy by 2030 with overview by \(Official Gazette 63/2021\)](#) sets goals for Croatia to become a low-carbon country. Similar to NECP, it does not specifically mention energy of renewable communities.

6.1.2 Structure and actors of the energy market

The enactments of the key related legislation mentioned in previous chapters were prerequisites for the continued opening and further development of the electricity market and the implementation of renewable energy sources in the electricity market.

There are two types of electricity markets in Croatia. In the initial phase of its opening, a model of the bilateral market was selected, which was upgraded with the Rules of Organization of the Electricity Market with the model of balance groups in which electricity trading is conducted by bilateral agreements. The second electricity market is the organized electricity market (CROPEX). The rules for organizing the electricity market determine the obligations and responsibilities of balance groups and regulate the relations and activities in the bilateral electricity market. Market rules are binding for all participants in the electricity market (Source: <https://www.hrote.hr/trziste-elektricne-energije>).

6.1.2.1 Legislators and regulators of the energy market

The enactments of the key related legislation mentioned in previous chapters were prerequisites for the continued opening and further development of the electricity market and the implementation of renewable energy sources in the electricity market.

There are two types of electricity markets in Croatia. In the initial phase of its opening, a model of the bilateral market was selected, which was upgraded with the Rules of Organization of the Electricity Market with the model of balance groups in which electricity trading is conducted by bilateral agreements. The second electricity market is the organised electricity market (CROPEX). The rules for organizing the electricity market determine the obligations and responsibilities of balance groups and regulate the relations and activities in the bilateral electricity market. Market rules are binding for all participants in the electricity market (Source: <https://www.hrote.hr/trziste-elektricne-energije>).

6.1.2.2 Electricity market structure

Electricity market in Croatia consists of producers, suppliers, traders, and end customers. Adoption of the Energy Act, the Act Amending the Energy Act, the Electricity Market Act, the Act Amending Electricity Market Act, the Energy Activity Regulation Act and the Law on renewable energy and high-efficiency cogeneration created necessary conditions for the continuation of opening, further development and the implementation of renewable energy in the Croatian electricity market.

The organisation of the electricity market and the transmission and distribution of electricity are regulated activities performed as public services (source: <https://www.hrote.hr/trzisni-sudionici>):

- ▶ HERA (Croatian Energy Regulatory Agency) - issues licenses for performing energy activities in the Republic of Croatia

- ▶ HROTE (Croatian Energy Market Operator) - in charge of organizing the electricity market
- ▶ HOPS (Croatian Transmission System Operator)- in charge of electricity transmission, maintenance, development and construction of the transmission system and management of the electricity system
- ▶ HEP-Distribution System Operator- in charge of electricity distribution, maintenance, development, and construction of the distribution system

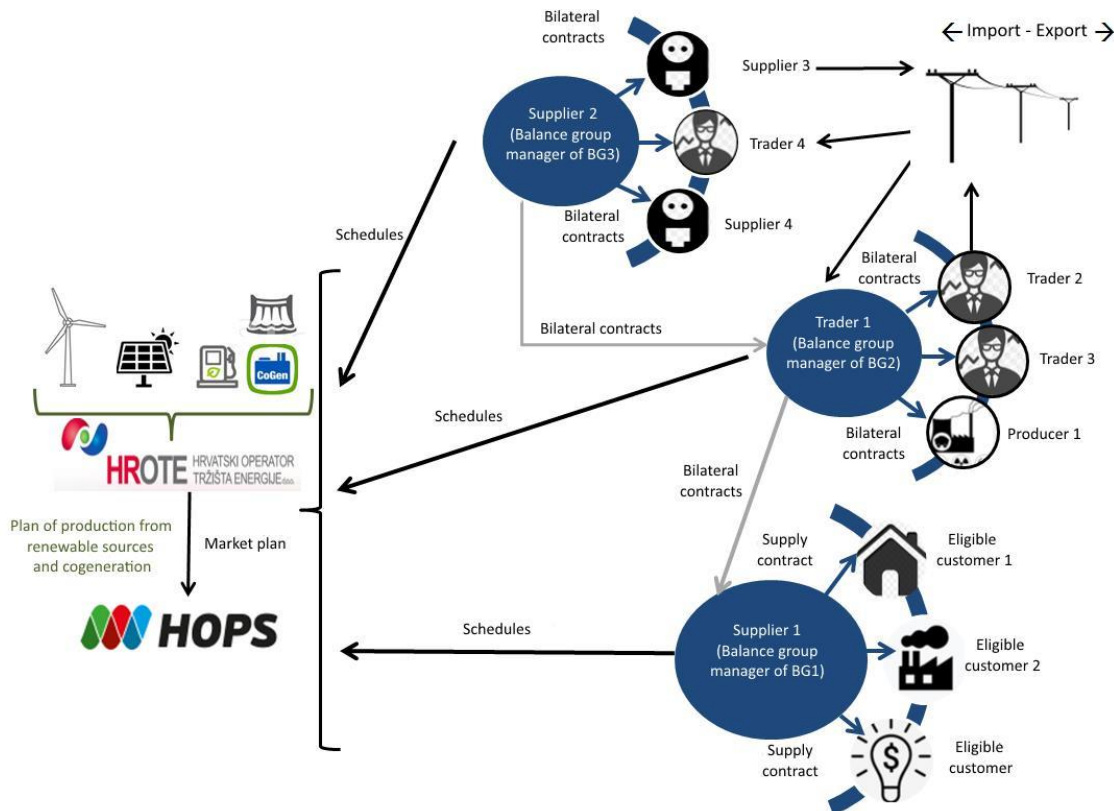


Figure 8: Electricity market structure in Croatia (source: <https://www.hrote.hr/market-model>)

The producer of electricity is an energy entity that performs the activity of electricity production and has a license, then also an energy entity that produces electricity exclusively for its own needs and last, an energy entity that produces electricity in production facilities up to 500kW. There are two categories of producers in Croatia: privileged producer and independent producer. Producers who produce electricity from renewable energy sources and cogeneration can acquire the status of an eligible producer.

The trader/supplier may buy or sell electricity to the producer, supplier, other trader, electricity exchange, Croatian Transmission System Operator for the purpose of providing ancillary services, providing balancing services, compensation plan and to cover losses in the transmission network, HEP-Distribution System Operator for the purpose providing ancillary services and to cover losses in the distribution network or by importing or exporting it across the borders of the Republic of Croatia. Currently in Croatia there are 7 active suppliers. The largest one is HEP.

The status of the end customer gives the customer the right to choose his supplier and negotiate the price of electricity with him. The total price of electricity for end customers consists of the following components:

- ▶ the price of electricity agreed with the supplier
- ▶ transmission network usage fee and/or distribution network usage fee
- ▶ fees for encouraging the production of electricity from renewable energy sources and cogeneration

-
- ▶ other fees defined by the Energy Act or a special law

6.2 Community energy and collective actions

6.2.1 Legal framework for community energy and collective actions

Prior to the formal recognition of energy communities in national legislation, most activities related to energy collective actions and inclusion of citizens in investments in Croatia were initiated through energy cooperatives and crowdfunding campaigns since the laws on energy and renewable communities have been adopted recently.

Energy cooperatives represent associations of individuals, companies, public institutions, local governments connected according to the key location, which together develop renewable energy projects which contributes to the reduction of investment risk and shares project profits. They are organized in such a way that a democratic way of deciding on all issues of cooperative management. The goal of such cooperatives is to promote renewable energy sources owned by local communities. This enables easier implementation of energy efficiency measures aimed at the local community, because cooperatives can achieve greater bargaining power, greater trust in knowledge and operate at a higher level than the individual (source: <https://www.enu.hr/ee-u-hrvatskoj/tko-je-tko-ee-rh/energetske-zadruge/>).

Currently in Croatia there are 9 energy cooperatives, and interest for starting new cooperatives or joining the existing ones has been steadily growing over the past few years. Their primary focus has been mostly on PV projects. The largest and largely recognized energy cooperative in Croatia is Green Energy Cooperative (ZEZ) which, among their other projects, has initiated two RES projects in combination with crowdlending (CF) model. On their own CF platform, they have initiated two projects related to installation of PV systems on the roofs of 2 public buildings (entrepreneurial center and city library) through crowdlending model where they were offering to citizens 4,5-5% of interest rates for the return of their investments for the period of 10 years. The campaigns were very successful, and they gathered the money in only few days. Also, in cooperation with Energy Cities and Croatian Association of cities and municipalities, they have organized *Good Energy Tour* for Croatian cities with the purpose of using of professional support of the cooperative in educating citizens and developing renewable energy projects. In 2021 they initiated a new digital platform called *On the sunny side* where citizens can get all the key information about home solar power plants, perform a free check of the conditions for installation and assessment of investment and cost-effectiveness, as well as prepare the main electrical project of the solar power plant and connect with proven system contractors. ZEZ is also one of the initiators of the Energy Communities Forum in Croatia that was introduced in the April 2024. The Forum brings together organizations and initiatives actively involved in establishing their own energy community or anyhow contributing to the development of energy communities in Croatia.

Other interesting initiative in 2021 was the establishment of a cooperative among two islands in Croatia, Cres and Lošinj, called Apsyrtides, which is the first of such kind on Croatian islands. They have also developed the Programme for the Transition to Clean Energy of the Cres - Lošinj Islands. These island communities were selected by the Secretariat for Islands of the European Commission as a part of the EU's Clean Energy Initiative

and provided assistance in drafting the transition programme²². The programme was signed by the 40 stakeholders and one of the horizontal strategies is establishment of an energy community.

First and only energy community which was formally registered as per Croatian legislation is My Energy Community, which got regulator's approval in April 2024. There are several other similar initiatives in the pipeline at the moment (May 2025), including Energy Community Špičkovina initiated via SHAREs, however, they are still pending regulator's approval due to complex requirements, which amongst other criteria, require every CEC to have at least one full time employed person.

6.2.2 Contractual relations of community energy/collective actions

Energy cooperatives in Croatia are not recognized as a separate type of cooperatives in national legislation but are defined through general Law on cooperatives (Official Gazette nr 34/11, 125/13, 76/14, 114/18, 98/19). In this law, cooperative is defined as a voluntary, open, independent and autonomous society managed by its members, and through its work and other activities or use of its services, based on community and mutual assistance, achieve, promote and protect their individual and joint economic, economic, social, educational, cultural and other needs and interests and achieve the goals for which the cooperative was founded.

The relations between its members are regulated by the cooperative on the basis of cooperative principles:

- ▶ voluntary and open membership- membership in a cooperative is voluntary and open to all persons who use its products, services and who are willing to accept the responsibilities of membership, without any sexual, racial, social, political, religious or any other discrimination,
- ▶ supervision of business by members- a cooperative is a democratic society whose work is supervised by its members and who actively participate in the creation of business policy and decision-making. Elected members' representatives correspond to the membership. Members have equal voting rights (one member - one vote),
- ▶ economic participation of cooperative members and distribution- the duty of cooperative members is, according to their interests and capabilities, participation in the work and contribution to the development of the cooperative. Members distribute the profit of the cooperative for one or more of the following purposes: development of the cooperative, increase in reserves, members - in proportion to business with the cooperative and to support other activities of the cooperative,
- ▶ autonomy and independence- as an independent and autonomous legal entity, the cooperative relies on the work of its members and cooperative resources in legal transactions with other legal entities and state bodies, under the direct supervision of its members,
- ▶ education, professional training and informing the members of the cooperative- the cooperative conducts education and professional training of its members, elected representatives, managers and employees to contribute to the development of its cooperative. It informs its members and the public, especially young people, about the nature, benefits and advantages of cooperatives,

²² <https://euislands.eu/document/clean-energy-transition-agenda-cres-losinj>

- ▶ cooperation between cooperatives - cooperatives most effectively serve their members and strengthen the cooperative system by connecting and cooperating at the local, regional, national and international levels,
- ▶ care for the community- the cooperative operates in a way that contributes to the sustainable development of the environment and the local community.

6.3 Energy communities

Croatia has transposed the requirements of RED II and IEMD on energy communities in 2021 by setting up basic legal framework for energy communities in Law on Electricity Market (Official Gazette nr 111/21, 83/23) - transposition of IEMD requirements, and by defining renewable communities within the Law on Renewable Energy Sources and High-Efficiency Cogeneration (Official Gazette nr 138/21, 83/23) – transposition of the RED II.

6.3.1 Legal framework for energy communities

Law on Electricity Market (Official Gazette nr 111/21, 83/23) defines **energy community** as a legal person based on voluntary and open participation and under the actual control of members or unit-holders who are natural persons, local governments or small enterprises, and whose primary purpose is to provide environmental, economic or social benefits to its members or unit-holders or local areas in which it operates, **not generating financial gain**, and which may participate in production from, inter alia, renewables, supply, consumption, aggregation, energy storage, energy efficiency or charging services for electric vehicles or provide other energy services to its members and shareholders. The owner of a share or a member of the energy community may be a natural or legal person, including local self-government units, a micro-enterprise or a small enterprise whose place of residence, establishment or business premises is in the local self-government unit. The owner of a share, or a member of the energy community, may not have more than 40% of the share owned by a legal entity of another share owner, or a member of the same energy community.

The energy community may participate in the production of electricity for the needs of shareholders or members of the energy community, inter alia, from renewable energy sources, supply electricity to shareholders or members of the energy community, management of electricity consumption, aggregation of shareholders or members of the energy community, energy storage for shareholders or members of the energy community, energy efficiency services for share owners or members of the energy community, charging services for electric vehicles of shareholders or members of the energy community or may provide other energy services shareholders or members of the energy community in accordance with the rules governing individual electricity markets.

According to the law, energy communities may not own or operate the electricity distribution network and they are entered in the register of energy communities kept by HERA. The register must contain at least information on the owners of shares or members in the energy community, the spatial coverage of the local community in which the energy community operates and other information. Data on the energy community from the register are published on the HERA's website.

Law on Renewable Energy Sources and High-Efficiency Cogeneration (Official Gazette nr 138/21, 83/23) defines **renewable energy communities** as legal entities that meet the following conditions: which, in accordance with applicable national law, are based on open and voluntary participation, independent and effectively supervised by shareholders or members located in the vicinity of renewable energy projects owned or operated by that legal entity, whose shareholders or members are natural persons, small and medium-sized enterprises or units of local or regional self-government, and whose primary purpose is to provide environmental, economic or social

benefits to the community for its shareholders or members or local areas in which it operates, and not financial gain. According to the 2023 Law amendments, renewable energy communities also need to obtain a permit from Croatian Energy Regulatory Agency to conduct market activity of organizing REC, but also one new model available for multi-apartment buildings became available – “consumers acting collectively” where no legal entity is required. Such model is related to a group consisting of at least two consumers acting collectively in sharing the self-produced renewable energy and located in the same building or residential complex. The decision to conclude a self-supply agreement in a multi-apartment building with the supplier is made by the co-owners of the building based on a minimum majority of votes calculated according to the co-ownership shares. The procedure for this type of community does not require the establishment of a new legal entity, only the sharing of keys and the selection of an authorized person, with the rest procedure being identical to the usual process for self-supply.

According to the Law on Renewable Energy Sources and High-Efficiency Cogeneration (Official Gazette nr 138/21, 83/23), an incentive framework is intended to be established in order to promote and facilitate the development of renewable energy communities, ensuring, inter alia, the following:

- ▶ removing unjustified regulatory and administrative barriers for renewable energy communities
- ▶ renewable energy communities supplying or providing aggregation or other commercial energy services shall be subject to the provisions relevant to such activities
- ▶ the distribution system operator shall cooperate with renewable energy communities to facilitate energy transfers within renewable energy communities
- ▶ renewable energy communities shall be subject to fair, proportionate and transparent procedures, including registration and licensing procedures, and network fees that reflect costs, as well as relevant fees, charges and taxes, ensuring an appropriate, fair and balanced contribution to the distribution of total system costs. transparent cost-benefit analysis of distributed energy sources carried out by the competent authorities
- ▶ renewable energy communities shall not be treated in a discriminatory manner with regard to their activities, rights and obligations as final customers, producers, suppliers, distribution system operators or other market participants.
- ▶ participation in renewable energy communities is available to all consumers, including those in low-income or vulnerable households
- ▶ tools are available to facilitate access to finance and information
- ▶ public bodies are provided with regulatory and capacity building support in enabling and establishing renewable energy communities and in helping bodies to participate directly
- ▶ rules are in place to ensure equal and non-discriminatory treatment of consumers participating in the renewable energy community.

Some of main barriers which might hinder take up of energy communities in Croatia are:

- ▶ limiting CEC legal form to non-profit
- ▶ requirement for each CEC and REC to obtain permit from the regulator regardless of their size, scope and type of project
- ▶ requirement of proof of technical, financial and expert capacity to become CEC/REC
- ▶ unclear legal framework and different interpretations of some law statements

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- ▶ missing parts of secondary legislation
 - ▶ dynamic key for sharing energy is still not possible as there is no adequate software provided by DSO
 - ▶ no discounts for network fees and distribution/transmission fees for shared energy within CEC/REC
 - ▶ lack of information and awareness on benefits of forming energy/renewable communities and lack of information on the differentiation between those two forms
 - ▶ lack of step-by-step guidance for CEC, REC and jointly active consumers and no publicly available templates for contracts with different stakeholders and with members

6.3.2 Contractual relations and liabilities of energy communities

Contractual relations of energy communities are governed by the laws aforementioned:

- ▶ Law on Electricity Market (Official Gazette nr 111/21, 83/23)
- ▶ Law on Renewable Energy Sources and High-Efficiency Cogeneration (Official Gazette nr 138/21, 83/23)

As discussed in the previous chapter, some contractual relations are defined by those laws, while more detailed relations are to be defined by the secondary legislation which is still not fully adopted.

6.3.2.1 Contracts of members of CEC/REC

According to the Laws:

Renewable energy communities:

- ▶ produce, consume, store and sell renewable energy, inter alia through renewable energy purchase agreements
- ▶ share, within the renewable energy community, renewable energy produced in production units owned by that renewable energy community
- ▶ access all relevant energy markets directly or through aggregation in a non-discriminatory manner.

Consumers of self-produced renewable energy:

- ▶ produce energy from renewable sources, including for their own consumption, store, and sell excess electricity produced from renewable sources through renewable energy purchase agreements, electricity suppliers and mutual trade agreements, without being subject to discriminatory or disproportionate procedures and fees and grid fees that do not reflect costs, regarding the electricity they consume or feed into the grid, and regarding the electricity from renewable sources they produce themselves, which remains within their premises, discriminatory or disproportionate procedures and any charges or fees.
- ▶ install and use energy storage systems in combination with facilities that produce renewable energy for their consumption, without paying any double charges, including grid fees when it comes to stored electricity that remains on their premises.
- ▶ retain their rights and obligation as end consumers.
- ▶ receive compensations, among other things, when applicable, through support programs for electricity from renewable sources that they produce and feed into the grid, which reflects true value of that electricity and may include its long-term value for the grid, the environment, and society.

Citizen Energy Communities:

- ▶ The owner of a share or a member of the citizens' energy community may be a natural or legal person, including local self-government units, a micro-enterprise or a small enterprise whose place of residence, establishment or business premises is in the local self-government unit.
- ▶ Actual control in the energy community of citizens may be exercised by shareholders and members of the energy community of citizens who are not medium-sized enterprises and large enterprises, while shareholders and members of the energy community of citizens exercise voting rights independently of ownership in the energy community of citizens. One member - one vote.
- ▶ The owner of a share or a member of the energy community of citizens may not have more than 40% of the share owned by a legal entity of another owner of the share or a member of the same energy community of citizens.
- ▶ Participation in the energy community of citizens is open and voluntary in accordance with the conditions of participation in the energy community of citizens that the energy community of citizens is obliged to adopt no later than 15 days before the start of its activities in any electricity market.

Consumers acting collectively

- ▶ consume or store electricity produced within their own premises located within defined boundaries, or who sell electricity they produced themselves or participate in providing the flexibility or energy efficiency programs, provided that these activities are not their primary commercial or professional activities.
- ▶ they can participate in all electricity markets.
- ▶ a generation/storage facility delivers energy to the grid at the same metering point where it is taken.
- ▶ they are not subject to double charges, including network fees, for stored electricity that remains within their premises or providing flexibility services to the system operator.
- ▶ they may provide several services, including flexibility services, balancing services, demand response, voltage regulation, simultaneously if technically feasible.

6.3.2.2 Contracts of CEC/RECs with other market participant

According to the Law, CEC contracts with other market participants are regulated as follows:

- ▶ At the billing metering point of the owner of the share or member of the energy community of citizens, the rights and obligations of the end customer or active customer or network user apply.
- ▶ Tariffs for electricity transmission shall be applied at the metering point of the shareholder or member of the energy community of citizens in accordance with the methodology for determining the amount of tariffs for electricity transmission and the decision on the tariff for electricity transmission and distribution
- ▶ At the billing metering point of the shareholder or member of the energy community, electricity delivered to the grid and electricity taken from the grid shall be considered and taken into account separately, in accordance with the law governing the energy sector and the law governing area of regulation of energy activities, and Article 18 of Regulation (EU) 2019/943 ensuring an appropriate and balanced contribution to the distribution of total system costs
- ▶ The CEC may participate in all electricity markets directly or through aggregation in accordance with the rules governing individual electricity markets.

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- ▶ The CEC has the right to regulate the distribution of electricity from generation and energy storage facilities of the CEC or an active customer who is a member of the CEC in accordance with the general conditions for network use and electricity supply.
 - ▶ CEC cannot own or manage distribution systems.

6.4 Support Schemes

A dedicated support mechanism, including both financial and technical aspects that can help energy communities to emerge, is still missing. Regarding the information support, the established SHAREs Gateway provide all the interested parties with necessary information regarding EC, how to establish them and ensure proper operation. Since there are no similar platforms in Croatia, especially on national level, the platform has a great potential to serve as an important one-stop-shop for those who either want to gain information and develop collective energy actions, or those who already have successfully running energy community and wish to expand and staying up to date with the latest information available on energy communities in Croatia.

Further development of support schemes is expected in the forthcoming period.

6.5 Conclusions

Energy communities, and their establishment, in Croatia are still in the early stage of recognition and definition of all accompanying laws and regulations. Considering the fact that in the last years energy cooperatives were getting more popular and were pioneers in implementation of citizen driven initiatives and projects, it can be concluded that the energy communities as such have a great potential in Croatia.

Republic of Croatia President's Council for Energy Transition has issued guidelines for speeding up energy transition in Croatia, where they have also reflected on the issue of CEC in Croatia. The published guidelines have noted that the Electricity Market Act adopted in 2021 recognizes energy communities, although according to the description in the new law, the Citizen Energy Community (CEC) is closer to the Renewable Energy Community (REC) from the EU. Directive 2018/2001 on the promotion of the use of energy from renewable sources RED II.

The term "Renewable Energy Communities" is a narrower term than the CEC under the EU Directive 2019/944 on common rules for the internal market in electricity. Also, President's Council has noted that the CEC should not be limited by spatial parameters. In the Electricity Market Act from 2021, it was stated that CEC is a legal entity established to achieve the benefits of energy exchange produced and consumed limited to geographical coverage of a single local community. what significantly limited the CEC because only the possibility of energy exchange is mentioned, and according to EU Directive 2019/944 Article 2, paragraph 11, point C, the CEC means a legal entity that can participate in production, including from renewable sources, distribution, supply, consumption, aggregation, energy storage, energy efficiency or charging services for electric vehicles or provide other services to its members or shareholders, which is a much larger area of activity. Fortunately, with the amendments to the law in July 2023 Law, this limitation to a geographical coverage of a single local community has been removed and it is now possible to have members of the same CEC from the entire territory of the Republic of Croatia.

Also, the Electricity Market Act states that CECs operate based on the law governing the financial operations and accounting of non-profit organizations, which creates another significant restriction in relation to the definition of CEC from the directive that allows CEC to be of any legal form. (Source: <https://www.predsjednik.hr/vijesti/vijece-predsjednika-republike-za-energetske-tranziciju-predstavilo-smjernice-za-ubrzanje-energetske-tranzicije/>).

Overall, it can be concluded that the first key prerequisite for taking up CEC/REC in Croatia has been set up by transposing RED II and IMED into national legislation. However, many barriers still remain, and the transposition was in some segments unnecessary limited, thus restricting the options for potential members/investors to form communities according to the Croatia legislation.

Some parts of the secondary legislation is still missing. While this is currently also one of barriers, it is also a potential lever as it still provides an opportunity to advocate a better and more supporting framework for energy communities in Croatia.

These kinds of initiatives are one of the key areas when it comes to energy transition and the path to a climate-neutral Europe. Projects like SHAREs which is focused on support to local heroes in establishing their energy community and enabling them to motivate and target consumers directly, as well as the development of SHAREs Gateway for local heroes to help them initiate action and grow are of utmost importance.

7 | Germany

7.1 Introduction

Nowadays the energy provision, grid operation and energy distribution in Germany are mainly the business of large corporations. But at the beginning of the 20th century, a nationwide supply of electricity to rural regions was unthinkable. It was a matter of setting up an energy network in the first place, which was accompanied by a wave of founding of municipal energy utilities. The first small hydroelectric power stations were built. Wooden poles with wires transported electricity for the first light bulbs in the houses.

With improved gas supply and large coal-fired power plants, the smaller actors were increasingly squeezed out or merged into larger companies. But there are still many regional grid operators. Even today with around 900 local network operators (700 of them municipal utilities) the distribution grid is much smaller than the transmission grid. There are even some of the cooperative players left that are over 100 years old. They show that energy supply by citizens for citizens is also possible in the long term and on a larger scale.

Similar to electrification at the beginning of the 20th century, the energy transition in Germany was and is calling for regionally-based companies. The anti-nuclear and climate protection movement was very important for the development of collective actions for a renewable energy supply. Starting with protests in the 1980s, people came together in numerous citizens' groups, local councils or local businesses to implement alternative energy projects in their region. This activism formed the basis for the decentralized collective projects. But while only a few collective projects could be implemented in the 80s and 90s, the 2000s brought a rapid expansion. The energy transition in Germany became a collaborative effort that was not only done by a few large energy suppliers and institutional investors. It was realized regionally by municipalities, municipal enterprises, and local citizens.

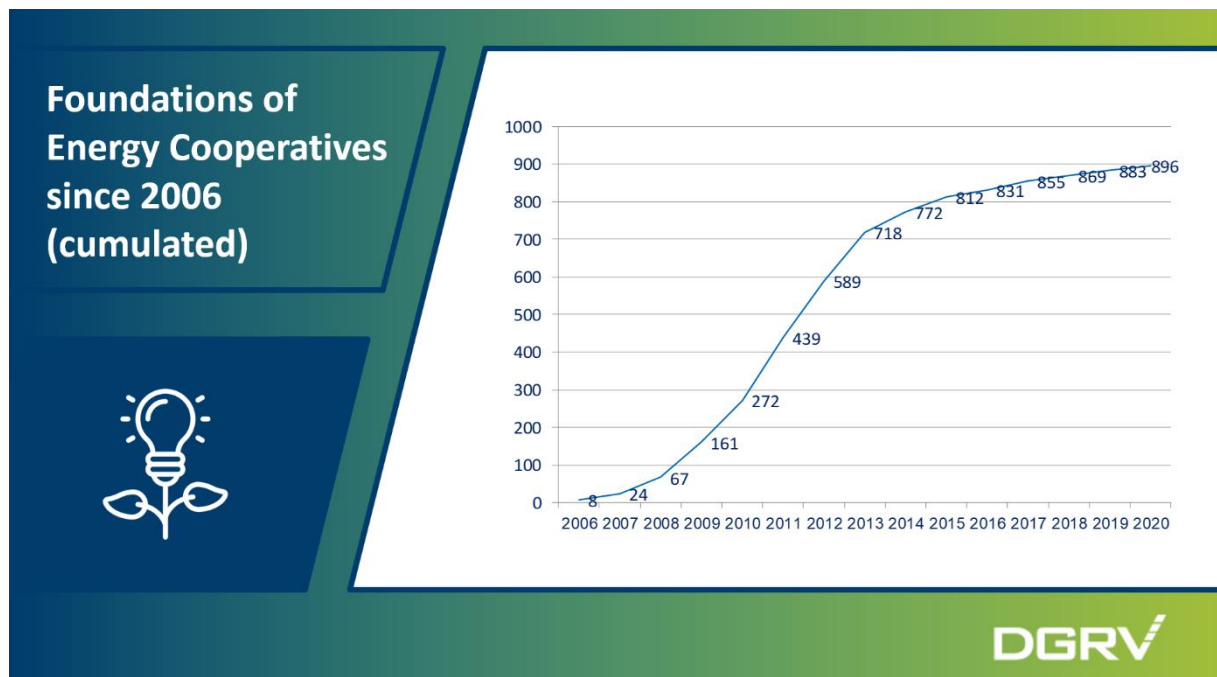


Figure 9: Foundation of Energy Cooperatives since 2006 (cumulated), Source: DGRV

7.1.1 List of relevant laws and regulations

- ▶ **Bundes-Immissionsschutzgesetz (BImSchG)** (Federal Immission Control Act)
The purpose of the Act is to protect humans, animals and plants, the soil, water, the atmosphere as well as cultural and other material assets from harmful effects on the environment (caused by air pollution, noise, vibrations, light, heat and radiation).
<http://www.gesetze-im-internet.de/bimschg/index.html>
- ▶ **Bundesbedarfsplangesetz (BBPlG)** (Federal Requirements Plan Act)
The Act specifies which grid reinforcement and expansion projects in the area of extra-high voltage grids - in addition to those projects specified in the Energy Line Expansion Act - are necessary for the energy industry in the next 10 to 15 years.
<http://www.gesetze-im-internet.de/bbplg/index.html>
- ▶ **Elektromobilitätsgesetz (EmoG)** (Electric Mobility Act)
The law regulates the preferential participation of electric vehicles in road traffic in order to promote their use to reduce the climate and environmentally harmful effects of motorised private transport.
<http://www.gesetze-im-internet.de/emog/index.html>
- ▶ **Energie- und Klimafondsgesetz (EKFG)** (Energy and Climate Fund Act)
The Energy and Climate Fund (EKF) was established to finance the additional tasks associated with the energy concept of 28 September 2010. This special fund can be used to finance measures in the areas of renewable energies, energy efficiency and national climate protection, among others. In government resolutions of June and July 2011, the proceeds from the auctioning of CO2 emission certificates were established as the sole source of revenue.
<http://www.gesetze-im-internet.de/ekfg/index.html>
- ▶ **Energiedienstleistungsgesetz (EDL-G)** (Energy Services Act)
The Energy Services Act promotes the development of the market for energy services and ensures better education of end customers.
<http://www.gesetze-im-internet.de/edl-g/index.html>
- ▶ **Energieleitungsausbaugesetz (EnLAG)** (Energy Line Expansion Act)
The law deals with the construction of the extra-high voltage grids. It defines specific line projects that serve to integrate electricity from renewable energy sources, improve interconnection in the European energy market, connect new power plants or avoid structural bottlenecks in the transmission grid.
<http://www.gesetze-im-internet.de/enlag/index.html>
- ▶ **Energiesicherungsgesetz (EnSiG)** (Energy Security Act)
The law regulates the supply of vital energy needs in the event that the energy supply is directly endangered or disrupted and this disruption cannot be remedied in time.
http://www.gesetze-im-internet.de/ensig_1975/index.html
- ▶ **Energiesteuergesetz (EnergieSTG)** (Energy Tax Act)
The law regulates the taxation of energy products used as heating or motor fuels and also the reduction or exemption from the tax under certain conditions.
<http://www.gesetze-im-internet.de/energiestg/index.html>
- ▶ **Energieverbrauchskennzeichnungsgesetz (EnVKG)** (Energy Consumption Labelling Act)
The Act regulates the enforcement powers and duties of the Länder in market surveillance for product labelling. In addition, the framework conditions for the implementation of the national efficiency label

for old heating systems are regulated.
http://www.gesetze-im-internet.de/envkg_2012/index.html

- ▶ **Energieverbrauchsrelevante-Produkte-Gesetz (EVPG)** (Energy Consumption Relevant Products Act)
In conjunction with EU law, the Act regulates the placing on the market and putting into service of products with regard to their energy consumption. It creates the necessary powers for the corresponding market surveillance by the Federal States.
<http://www.gesetze-im-internet.de/ebpg/index.html>
- ▶ **Energiewirtschaftsgesetz (EnWG)** (Energy Industry Act)
The Act defines the framework conditions for a secure, affordable, consumer-friendly and environmentally compatible supply of electricity and gas. It regulates the electricity and gas supply networks to ensure effective and undistorted competition. At the same time, it implements European Community law in the field of grid-based energy supply.
http://www.gesetze-im-internet.de/enwg_2005/index.html
- ▶ **Erneuerbare-Energien-Gesetz (EEG)** (Renewable Energy Sources Act)
The law is intended to promote the further development of technologies for electricity generation from renewable energies and to achieve cost reductions.
https://www.gesetze-im-internet.de/eeg_2014/
- ▶ **Gebäudeenergiegesetz (GEG)**
Building Energy Act
The law regulates the switch to renewable heating systems. A subsidy system has been developed for households.
- ▶ **Kleinanlegerschutzgesetz** (Small Investor Protection Act)
The Small Investor Protection Act aims to better protect consumers from dubious and non-transparent financial products.
https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBI&start=//*%255B@attr_id=%27bgbl115s1114.pdf%27%255D#_bgbl_%2F%2F*%5B%40attr_id%3D%27bgbl115s1114.pdf%27%255D_1642697678193
- ▶ **Kraft-Wärme-Kopplungsgesetz (KWKG)** (Combined Heat and Power Act)
The Act regulates support for the joint and particularly efficient generation of electricity and heat in low-CO2 CHP plants, especially on the basis of natural gas. It also provides for surcharges for the new construction and expansion of heating and cooling networks as well as heat and cold storage facilities.
http://www.gesetze-im-internet.de/kwkg_2016/index.html
- ▶ **Messstellenbetriebsgesetz (MsbG)** (Metering Point Operation Act)
The Act regulates in particular the installation and operation of intelligent metering systems ("smart meters") and the energy-related communication of metered values.
<http://www.gesetze-im-internet.de/messbg/index.html>
- ▶ **Netzausbaubeschleunigungsgesetz (NABEG)** (Network Expansion Acceleration Act)
The law contains procedural regulations for the expansion of transnational and cross-border extra-high voltage lines. It also applies to high-voltage lines with a nominal voltage of at least 110 kV. The concrete expansion projects are defined in the Federal Requirements Plan Act. The aim is to accelerate the planning and approval procedures.
<http://www.gesetze-im-internet.de/nabeg/index.html>
- ▶ **Stromsteuergesetz (StromStG)** (Electricity Tax Act)
The law regulates the taxation of electricity and also the reduction or exemption from the tax under

certain conditions.
<http://www.gesetze-im-internet.de/stromstg/index.html>

- ▶ **Treibhausgas-Emissionshandels-Gesetz (TEHG)** (Greenhouse Gas Emissions Trading Act)
The trading of allowances for the emission of greenhouse gases in an EU-wide emissions trading system is based on this law. The aim is to contribute to global climate protection through a cost-effective reduction of greenhouse gases.
http://www.gesetze-im-internet.de/tehg_2011/index.html

- ▶ **Umweltverträglichkeitsprüfungsgesetz (UVPG)** (Environmental Impact Assessment Act)
The law regulates which measures must be taken for certain public and private projects to ensure effective environmental precautions.
<http://www.gesetze-im-internet.de/uvpg/index.html>

- ▶ **Wasserhaushaltsgesetz (WHG)** (Federal Water Act)
The law regulates the use and protection of water bodies. Energy supply is mainly dependent on the use of surface waters, including cooling and electricity generation from hydropower.
http://www.gesetze-im-internet.de/whg_2009/index.html

- ▶ **Gesetz für die kommunale Wärmeplanung (WPG)** Law for municipal heat planning

The law obliges cities and municipalities to carry out analyses and plans in order to provide a renewable heat supply in the future. Together with the building energy law, the law forms the central package for the heat transition in Germany.

- ▶ **Windenergie-auf-See-Gesetz (WindSeeG)** (Wind Energy at Sea Act)
The purpose of this Act is to expand the use of offshore wind energy, in particular in the interest of climate and environmental protection.
https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl#_bgbl_%2F%2F*%5B%40attr_id%3D%27bgbl116s2258.pdf%27%5D_1642696340174

7.1.2 Structure and actors of the energy market

Compared to the rest of the EU, the German electricity market is already largely liberalised. The diversity of players and the use of dynamic trading and forecasting procedures allow for liquid and efficient wholesale trading.

The liberalisation of the electricity supply and the completion of the European internal electricity market have been driven forward since the end of the 1990s. This also includes the "unbundling" of the market players, i.e. the separation of electricity generation, transmission and distribution.

The market mechanisms and the high dynamics of wholesale play a central role in the success of the energy transition. Before liberalisation, the electricity market was dominated by rigid planning models and a few participants. Thanks to sophisticated, agile forecasting and trading procedures and the new diversity of players, it is now possible, for example, to react flexibly and efficiently to volatile electricity generation from renewable energy sources. Among other things, the option of trading electricity on the exchange on a quarter-hourly basis

also contributes to this. The short lead time here allows a high degree of prognose accuracy, so that supply and demand can be very precisely balanced (intraday trading).

7.1.2.1 Legislators and regulators of the energy market

The shaping of energy transition policy in Germany takes place within a federal negotiation system between the federal government and the Länder, which is characterised by a large number of mutual dependencies. Although key legislative competences in German energy and climate protection policy lie with the federal government, the federal states exert influence in various ways.

Firstly, the federal states must participate in federal legislation if it directly affects their fiscal and administrative affairs - as was the case with the introduction of emissions trading, among other things. In the case of such laws requiring their consent, they are able to veto them via the Bundesrat.

Secondly, the federal states have the possibility to make independent legal regulations on nature conservation and spatial planning policy that deviate from federal regulations (e.g. state planning laws, wind power decrees) - both important fields of action for promoting or hindering the expansion of renewable energies. For example, the requirements defined in the wind energy ordinances of the Länder for the planning and approval of wind energy plants differ. At the same time, most federal states have designated suitability areas for wind energy with simultaneous exclusion effects at other sites, while individual states (Saarland, Baden-Württemberg, Bavaria, Hesse) have recently granted municipalities significantly greater freedom in defining wind suitability sites.

Thirdly, diffusion research shows that the federal states can also act as innovators in energy and climate policy outside of legal requirements. Partly on the initiative of the federal states, partly also in "energy regions" of different spatial and institutional configurations or by promoting local initiatives, the federal states are implementing and testing new policy instruments such as climate protection programmes, energy concepts, economic cooperations, voluntary commitments. At the same time, regional economic promotion is essentially shaped by the Länder. More than half of the direct support for companies or company settlements and business-related infrastructures (e.g. competence centres, energy agencies, innovation networks) as well as the financing of the innovation-relevant areas of education and research is borne by the federal states.

The ministries important for the energy market are

- ▶ the Federal Ministry of Economics and Climate Protection
- ▶ the Federal Ministry of Digital Affairs and Transport
- ▶ the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
- ▶ the Federal Ministry of Housing, Urban Development and Construction.

Important authorities are

- ▶ the Federal Network Agency
- ▶ the Federal Office for Goods Transport
- ▶ the Federal Railway Authority, the Federal Environment Agency
- ▶ the Federal Office for Building and Regional Planning including the Federal Institute for Building, Urban Affairs and Spatial Research.

7.1.2.2 Electricity market structure

In no other country in Europe are there as many energy supply companies as in Germany. In addition to several large companies, there are also a large number of small and medium-sized energy suppliers, the majority of which are owned by municipalities. In total, around 2,250 companies are active in the German energy market in 2020 - from the generation or production of electricity, heat and natural gas to the operation of energy storage facilities, pipeline and pipe networks, to supplying customers at the local and regional level.

Despite many mergers, especially at the regional level, there are significantly more companies in the German energy market today than before liberalisation in 1998. Among the utilities, which mainly supply private customers, the so-called cross-utility companies dominate, offering their customers various product packages for natural gas, district heating, electricity and often also water.

Electricity is traded on the exchange and over the counter (OTC). On the power exchange - for Germany the European Energy Exchange EEX in Leipzig and the European Energy Exchange EPEX SPOT in Paris - standardised products are bought and sold in a transparent procedure. For the most part, however, companies continue to conclude direct supply contracts with electricity producers. Trading takes place on the futures, day-ahead and intraday markets. On the futures market, companies can agree on deliveries up to six years in advance, with the next three years in particular being traded very liquidly. The corresponding products are called "futures" on the exchange, and "forwards" in OTC trading. The spot market consists of the day-ahead and the intraday market. On the day-ahead market, electricity deliveries for the coming day are auctioned. Suppliers and demanders must submit their bids by 12 noon the day before. The closer the time of the agreed electricity delivery, the better the market participants can estimate the actual feed-in and the real consumption. In order to keep shortfalls or surpluses as low as possible and to use the available generation plants in a cost-efficient manner, the market participants can therefore trade electricity quantities for periods ranging from quarter hours to hourly blocks on the intraday market at very short notice after the end of the day-ahead auction. On the exchange, intraday trading ends 45 minutes before delivery ("gate closure"). OTC, companies can trade up to 15 minutes before delivery.

The exchange price is the intersection of supply and demand. On the electricity market, the generation plants with the lowest variable costs are the first to benefit ("merit order"). This minimises the costs of electricity supply. As a rule, the exchange price for electricity corresponds to the variable costs of the most expensive generation plant in use. This plant is called a "marginal power plant". The exchange price is then also called the marginal cost price.

7.2 Community energy and collective actions

7.2.1 Legal framework for community energy and collective actions

In Germany, currently 14 different business models can be identified that are already being successfully implemented in practice. In addition to the production of renewable energies, there are also individual business models for energy efficiency and electro mobility:

- ▶ Photovoltaics – Feed-in tariff < 100 kWp
- ▶ Photovoltaics – Leasing model < 750 kWp
- ▶ Photovoltaics – land based < 750 kWp
- ▶ Tenant model/Electricity supply/Member supply

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- ▶ Renting Balcony modules
 - ▶ Wind turbines
 - ▶ Electricity tariff/Direct selling
 - ▶ LED contracting
 - ▶ CHP + heat storage (electricity / heat contracting)
 - ▶ Wood pellet heating + PV + electricity storage (electricity / heat contracting)
 - ▶ Local district heating based on waste heat and biogenic substrates
 - ▶ Solar district heating
 - ▶ Charging infrastructure for Electric cars
 - ▶ Electric car sharing
 - ▶ Shared building supply

The framework conditions on the financial market make direct participation in citizen energy projects under company law in particular an interesting investment opportunity, and not only for environmentally conscious savers. At the same time, however, regulations in investor and consumer protection have been tightened, making the development of citizen participation models for municipal utilities more difficult. For example, the most recent regulation, the Small Investor Protection Act (Kleinanlegerschutzgesetz), dubbed the "Lex Prokon" as a result of the Prokon insolvency, came into force on 10 July 2015. Further legal regulations for the protection of the consumer are the (amended) Investment Act and the Capital Investment Code. In addition to the Investment Companies Act (KAGG), the Investment Code draws its regulatory content from the Foreign Investment Act of 1998, the Investment Act of 2004 and the EU Directive 2011/61/EU on Alternative Investment Fund Managers. The Capital Investment Code thus transposes the strict European regulations on investor protection into German law and bundles almost 60 years of investor protection legislation into one piece of legislation. Unfortunately, the new regulation places a heavy burden on investors and initiators of renewable energy projects. This is because, apart from a few exceptions, these players are now subject to the obligation to publish a prospectus. This means that anyone who relies on addressing a broader public for the acquisition of their equity or quasi-equity funds (for example, the raising of limited partnership contributions or the acceptance of subordinated loans) must have their sales prospectuses checked for completeness and approved by the Federal Financial Supervisory Authority (BaFin). The prospectus preparation costs can amount to six-figure sums and become a hurdle for small and medium-sized players in particular. Municipal utilities that engage in financial management for the purpose of citizen participation are also affected. Municipal utilities may be able to cope with this additional organisational and financial burden, but they should be aware of it. There is a danger that municipal companies will no longer implement smaller projects together with citizens because the effort is too great.

For the majority of energy cooperatives founded in recent years, which recruit and accept new members for their refinancing and accept financial investments (= cooperative shares) from them, the blanket application of the German Investment Code (KAGB) would have meant the end of their business activities. The authorisation requirements of the KAGB are aimed at professional asset managers. Hardly any energy cooperative would have been able to meet the requirements. Therefore, to the great fortune of the energy cooperatives, the legislator created exemptions at the last minute. Operationally active companies outside the financial sector" are now exempt from the Capital Investment Code. Under certain conditions that can generally be met, "energy cooperatives" can therefore be considered "operationally active". One of the decisive factors for the relaxation of the regulations was the great confidence in the legal form "cooperative", which is due, among other things, to the strict foundation audit and the monitoring of business operations by the auditing bodies of the cooperative association.

The municipal economic and municipal constitutional law of the federal states subjects the economic activity of municipalities and municipal enterprises in the energy sector to certain conditions and limits under municipal and budgetary law. The regulations, which vary from state to state, are primarily intended to protect municipalities from disproportionate risks. In almost all municipal ordinances of the Flächenländer, economic activity is subject to the so-called "barrier triad". According to this, the economic or entrepreneurial activity must be justified by the public purpose, the economic activity must be in an appropriate relationship to the municipality's capacity and to the foreseeable need, and the economic purpose may not be fulfilled better or more economically by a private party (so-called subsidiarity clause). In the meantime, some federal states are making an exception to this triad for activities in the energy supply sector, in order to better take into account the requirements of the European energy market, but also the energy transition in Germany. In the areas of electricity, gas and heat supply, among others, it is assumed that a public purpose is being pursued and only an appropriate ratio of the municipality's capacity to the economic activity is taken into account. This is intended to improve the competitiveness of municipal energy supply companies in times of deregulated markets. The public purpose presupposes that the economic activity or the establishment of or participation in a municipal company serves the municipal task. This means needs and interests that are rooted in or have a specific connection to the local community. In principle, the nature and scope of how municipalities fulfil their tasks for the common good are broadly defined. In the case of local renewable energy production, this requirement does not pose any problems, as energy supply is recognised as a matter for the local community. In order to be able to ensure that the public purpose is also safeguarded in the case of participation or foundation of a company in private law form, the municipality has to secure an appropriate influence on the company.

The commitment to the public purpose also requires that the company's services are predominantly located within the municipality's sphere of influence ("principle of locality"). In the case of a municipal enterprise, the shareholding should therefore roughly correspond to the proportion with which the enterprise develops its business activities in the municipal area. Municipalities planning to involve municipal enterprises of neighbouring municipalities in their energy projects and in their own operating company must therefore check whether the public purpose is maintained. The commitment to the public purpose also means that the company must pursue a goal oriented towards the common good. A purely commercial objective is excluded. However, this does not exclude any profits made by the municipality through its participation in the renewable energy sector. Profits may only be a consequence of the provision of services of general interest. This must be explained in each individual case. The participation of the municipality must fulfil a public purpose. The more serious the intervention in the market associated with the participation, the more important the public purpose must be. In order to assess this, the scope of the participation, the competitive situation on the market and the influence of the municipality associated with the participation are considered, for example. The performance reference prohibits the municipality from taking economic risks that exceed local needs and thus its financial capacity. The background for the legal requirement is the protection of the municipality's finances. Local requirements must be taken into account. When establishing or participating in a company under private law, municipalities must above all ensure limited liability to protect municipal assets. The municipality can promote its performance by involving private investment funds. The requirements of the performance reference vary from municipality to municipality and from project to project - in any case, the energy generation project must be reasonably designed. The requirements of the third criterion, the so-called "subsidiarity clause", differ between the federal states. Most of them stipulate that the public purpose of the enterprise is not or cannot be fulfilled better and more economically by a private third party ("simple subsidiarity clause"). On the one hand, the requirements refer to criteria such as reliability and sustainability, and on the other hand, to economy and efficiency. In some Länder, the "strict" subsidiarity clause applies. This sets much stricter limits. It stipulates that economic activity outside of municipal services of general interest is only permissible if the purpose is not or cannot be fulfilled just as well and economically by another party. Unless a legal exception is defined, a particularly careful case-by-case assessment is required. An examination and justification may be unnecessary if the subsidiarity clause is only

applicable outside of municipal services of general interest. Since the energy transition, this includes decentralised local renewable energy generation, as this service has become indispensable for a secure energy supply. A violation of the subsidiarity clause can result in private competitors being able to take legal action against the violation.

In addition to the municipal economic regulations, budgetary requirements must be observed when a municipality engages in energy-related activities and when establishing, taking over and participating in municipal enterprises. This applies in particular if the municipality requires outside capital in the form of loans for this purpose. The taking out of loans must be approved by the competent legal supervisory authority. Municipalities must base each of their activities, whether economic or non-economic, on the principle of economical and efficient budget management. Every entrepreneurial activity must be based on an economic efficiency calculation in which the entrepreneurial risk and the burden on the municipal budgets must be assessed. As part of the approval procedure, the legal supervisory authority assesses the municipal budgets and evaluates the municipality's long-term performance.

7.2.2 Contractual relations of community energy/collective actions

Today, practically all renewable energy projects in Germany are realised as so-called "project financing". Many projects are financed by 20% equity capital and 80% loan capital. For the lender, the lower complexity of the single-purpose company's activities and the associated easier forecasting of the income stream that is decisive for loan repayment are the main advantages over traditional corporate financing. In practice, financial citizen participation manifests itself in the following ways

- ▶ the possibility in principle for local citizens to acquire shares in a project relevant to participation, or
- ▶ the possibility for citizens to participate indirectly/ideally ("citizens' savings", "climate savings bonds") or
- ▶ the opportunity to participate in the project's profits or
- ▶ fixed payments (interest) from the investment, and/or
- ▶ the possibility of personally influencing or being consulted on company decisions.

Investor and consumer protection is ensured by various requirements and regulations, including prospectus obligations, the auditing of investment assets, registration / authorisation or the auditing of asset managers. The prospectus should enable the investor to form a complete and accurate picture of the offer and to make his investment decision on this basis. The prospectus requirement applies to all forms of investment that are subject to the German Investment Code (Kapitalanlagegesetzbuch, KAGB), primarily so-called investment assets. In addition, there may be a prospectus requirement under the German Investment Fund Act (VermAnlG) or the German Securities Prospectus Act (WpPG). Overall, there is a prospectus requirement in many cases, at least on the basis of one of the aforementioned laws. However, the laws also contain a number of exceptions. Whether a prospectus obligation exists must always be examined on a case-by-case basis.

Table 10: Requirements for different legal forms

	Cooperative	GmbH & Co. KG	Loan/ Savings Bond
Foundation expenses	At least three members; articles of association (no notarial certification); formation audit and	At least two partners; articles of association for the limited partnership and for the general partner GmbH (the latter	No prospectus requirement for loans, prospectus requirement for savings bonds

	entry in the register of cooperatives	with notarial certification); entry of the GmbH and the KG in the commercial register	
Organs	Executive Board, Supervisory Board, General Assembly	Managing Director and Shareholders' Meeting	-
Administrative expenses	Higher, legally required audits by cooperative federation for large cooperatives, advice and support by cooperative federation	Depending on the object and size of the company	-
Entry and exit	Open structure, i.e. free entry and exit at any time	Dependent on articles of association; consent of other shareholders may be required	Entry at any time or at the beginning of certain projects, usually fixed term, in the case of indefinite term basically ordinary right of termination
Capital/ Assets	No fixed capital and no minimum amounts for shares (unless specified accordingly in the articles of association), total assets belong to the cooperative	Minimum share capital of the GmbH 25,000 euros, total assets of the KG belong to partners	-
Voting rights	Head voting rights - no preponderance of individuals possible	Voting rights in proportion to the amount of the financial contribution	No right of co-decision or Voting rights
Profits	Profits in the case of retained earnings	Profit allocation after Capital contribution	Interest and dividends
Liability for losses/risk	The assets of the cooperative are liable	Limited partners are liable up to up to the maximum amount of the contribution	No loss participation, but no interest payment and defaulting loan disbursement
Deposit amounts	Usually smaller financial amounts (amount of the cooperative shares or minimum or minimum and maximum number often predetermined)	Dependent on articles of association; amount of contribution Basically free within the scope of the capital requirement	Free choice

7.3 Energy communities

The transpositions of the energy communities into German law required by the EU Commission did not take place in 2021. The new coalition agreement and the "opening balance sheet on climate protection" of the Federal Ministry of Economics and Climate Protection of 11 January 2022 provide a first insight into the energy and climate policy until 2025.

7.3.1 Legal framework for energy communities

A first legislative package (so-called Easter package) with particularly urgent measures, in which many points in the EEG are also to be reformed, is to be adopted by the cabinet around Easter and pass the Bundestag by the summer break. The second half of 2022 is then to be used for the state aid notification process with the EU Commission, so that the measures can enter into force on 1 January 2023. Further measures are to be summarised in a summer package that is to pass through the cabinet by the summer break and through the Bundestag by the end of the year.

Further energy policy changes have been defined as part of the so-called first solar package that came into force in May 2024. These include extensive bureaucratic and economic simplifications for PV expansion. Energy communities will also benefit from this. However, in the new laws, there have been hardly any direct changes for communities that fall under the definition of a renewable energy community ("Bürgerenergiegesellschaft").

Citizen energy is to be strengthened as an important element for more acceptance. For example, it is planned to improve the framework conditions for citizen energy through the introduction of energy sharing, the examination of a risk hedging fund and the utilisation of the de minimis regulations. It is not yet clear whether the introduction of energy sharing will be accompanied by a definition of energy communities. Within the framework of the "Klimaneutrales Stromsystem" platform, concrete proposals are to be developed in 2022 on how the framework conditions for citizen energy can be improved. Participation of local and neighbouring municipalities in ground-mounted photovoltaic and onshore wind power plants should be extended to existing plants and become mandatory for new plants.

In the area of PV, grid connections and certification are to be accelerated, remuneration rates adjusted, the tendering obligation for large rooftop systems and the caps examined. Innovative solar energy such as agri- and floating PV are also to be strengthened. Furthermore, the promotion of tenant electricity and neighbourhood concepts is to be simplified and strengthened as part of the revision of the tax, levy and apportionment system. In the Easter package, among other things, the subsidy rates and tendering limits are to be raised, tenant electricity is to be improved, and the area envelope for ground-mounted systems is to be opened up, taking into account nature conservation criteria. Tenant electricity and neighbourhood concepts could be strengthened by putting community supply on an equal footing with self-supply and removing the overall personal identity between system operator and end consumer.

Hidden in the coalition agreement in the chapter "Kohleausstieg" is a link between the coal phase-out and the promotion of renewable energies via the EEG. Due to the current electricity market design, in particular the merit order effect, and the lack of possibilities to forecast exchange electricity prices for 10 to 20 years, an economic investment in many RE projects is not possible without support from the EEG. Moreover, without an EEG remuneration, a market premium or another instrument to refinance capital costs, only corporate financing (instead of project financing) is possible, i.e. debt financing becomes much more difficult. Further market concentration would be the inevitable consequence of simply abolishing support for renewable energies.

A new electricity market design is to be developed in the legislative period 2021-2025. According to the opening statement, these include the reform of levies, surcharges, taxes and charges, the increased use of decentrally

generated green electricity in the generating region, and how to improve the framework conditions for citizen energy. The EEG levy is to be financed from 1 January 2023 via the budget from the revenues from emissions trading and a subsidy from the federal budget. In this context, it must be waited and seen whether sufficient financial resources will be available to abolish the EEG levy completely. However, the political will to abolish the EEG levy in Berlin is very high and is a first step towards relieving citizens of the burden of electricity prices. If the EEG levy is then reduced to zero, this must also be taken into account in the economic planning of future new plant leasing and self-supply projects.

The construction of heating networks is to be made more long-term and better funded by significantly increasing BEW's funding. Two legislative packages, the GEG and the WPG have entered into force by the beginning of 2024. The new framework for the heating transition, offer great potential for energy communities to participate in the expansion of local heating networks and the supply of heat from renewable sources.

7.4 Support Schemes

On 1 August 2014, the EEG 2014 introduced mandatory direct marketing for plants of a certain size. With subsidised direct marketing, the system operator sells his electricity himself and also receives the market premium from the grid operator. The technology-specific market premium is calculated from the difference between a fixed subsidy rate (the so-called "value to be invested") and the average technology-specific monthly market value on the exchange. Since the plant operator receives the market premium in addition to the revenue he generates, he can make a profit if he markets the electricity skillfully. In this way, the market premium is intended to stimulate the market- and system-oriented generation and sale of electricity from renewable energies. In return for the grid-side privileges and financial support, operators of renewable energy systems must comply with a whole range of legal obligations, which relate in particular to the technical equipment of their systems and various notification obligations to the grid operator and the Federal Network Agency. If these obligations are not complied with, there is a risk of (possibly considerable) economic losses due to the EEG's extremely severe catalogue of sanctions.

The system change from guaranteed feed-in tariffs to the tendering model with the EEG 2017, increased the requirements for RE projects. Up to the EEG 2017, the amount of financial support has always been determined by the law through specific subsidy rates (feed-in tariff rate or applicable value). This was already changed for ground-mounted solar installations with the EEG 2014 and a tendering model was introduced for these installations. The EEG 2017 extended this system change to rooftop solar installations, onshore and offshore wind energy installations, and biomass installations. The amount of support for the above-mentioned energy sources is no longer be determined by law but will be determined competitively within the framework of tendering procedures. The obligation to participate in tendering procedures is to apply only to installations above more than 750 kW installed capacity. Correspondingly large projects commissioned after the entry into force of the EEG 2017 had to participate in the tendering procedure. First of all, the project must qualify for participation in the tender, for which, depending on the technology, the project must already have reached a certain degree of realisation and a security must be deposited. If the project is not realised after being awarded the contract, penalties become due. The Federal Network Agency invites tenders for a certain quota of installed capacity of new plants (tender volume). The participants bid on the "value to be applied", on the basis of which the amount of the market premium to be paid for the directly marketed electricity is determined (in cents/kWh and for 20 years). The legislator sets a maximum bid price. The price offered for which a kilowatt-hour of electricity is to be generated in the project and fed into the grid is to be the sole deciding factor for the award of the contract. All bids are taken into account, from the lowest bid upwards, until the tendered capacity is reached. The so-called "pay-as-bid procedure" is to be applied in the tenders: For the electricity awarded, a plant operator will receive the price for which he offered his electricity, irrespective of the level of the competitors' bids he has offered his

electricity for. For onshore wind turbines, the subsidy amount is adjusted to the quality of the site according to a future single-stage reference yield model. If a project is awarded a contract, it must be implemented within a certain period of time (for example, 30 months after the announcement of the contract for onshore wind turbines) in order to avoid penalties.

Small players, especially citizen energy projects, have difficulties in competing with larger companies in the tendering model. For this reason, special rules for citizens' energy companies in the EEG 2017 were implemented to ensure the diversity of actors in the energy transition. Due to aspects of acceptance of RE projects, the 2014 amendment to the EEG already brought the diversity of actors to the fore. During this specification, planning participation, which is regulated in formal processes, was supplemented by new informal processes in many municipal and national initiatives.²² The EEG 2017 also made a definition in this sense.²³ The special regulations apply to citizens' energy companies under the following conditions:

- ▶ The company must consist of at least 10 private individuals and the majority of voting rights must be held by local private individuals. No shareholder may have more than 10 percent of the voting rights.
- ▶ The project size must not exceed six wind turbines with a total capacity of no more than 18 megawatts.
- ▶ The municipality must be given the opportunity to participate in the investment with up to 10 percent.

These citizen energy projects could already bid in the tenders before the emission control approval. They could therefore bid at an earlier stage than all other bidders and therefore save themselves the high up-front costs for the emission control approval at this stage. Moreover, if they were successful and awarded the contract, they didn't receive the price they bid themselves, but the value of the highest bid awarded in the bidding round.

In 2017, citizen energy plants winning almost all tenders for onshore wind energy. In practice a few project developers came into the picture, acting as service providers for newly founded citizens' companies. According to the legislator, this led to economic distortions for non-privileged players. The privilege that was actually intended as an exception thus became the rule. The special rules had therefore been suspended for the first two tender rounds in 2018. With the adoption of the coalition draft (19/18964), the privilege for citizen energy companies to participate in tenders under the EEG 2017 without emission control approval, as well as the regulations based on it, was permanently deleted.

The EEG 2021 pursued the same goals as the previous amendments. RE projects are to be gradually introduced to the market. Without privileges for citizen energy projects a successful participation of small and medium-sized actors in the tenders are rare. Before a company can participate in a tender, it has to incur considerable project development costs - for expert opinions or permits, for example. These costs are lost if the company is not winning in a tender. Since for example most energy cooperatives only plan one larger project, e.g. a wind turbine, they cannot compensate for a total loss with other successfully awarded projects. In this respect, the risk of losing the citizens' capital entrusted to them is far too high for those responsible for the cooperative. Many small and medium-sized actors therefore only invest in small projects.

Instead of introducing fair regulations for small players, the EEG 2021 effectively set a low tendering limit for rooftop solar power plants. Although formally a tendering limit of 750 kilowatts (kW) applies as before, companies will only receive feed-in tariffs for 50 percent of the electricity generated for systems between 300 kW and 750 kW in size. The remaining 50 percent is to be either consumed by the company itself, supplied or marketed directly. However, the EEG 2021 does not provide for any practically usable options for collective consumption, delivery to members or direct marketing. This de facto reduction of the tender limit to 300 kW hits the energy cooperatives particularly hard. The EEG 2021 has at least improved the conditions for tenant electricity projects with regard to the level of remuneration. The problem for collective actions like energy cooperatives: they can rarely use the electricity from their solar power system directly from their own roof. The members often do not live in the same building but are widely scattered. The public grid cannot be used to

distribute the electricity either. Therefore, not only the generation, but also the communal supply of electricity from smaller local suppliers and thus the cooperative supply of members must be facilitated. The EU Commission's requirement for "energy sharing" (Article 22 para. 2b Renewable Energies Directive) were not implemented in a practicable way.

Without an implementation of energy sharing and privileges for small and medium actors, the economic scope for collective action will become more and more limited.²⁴ A definition of "energy communities" could be the basis for privileges. Due to the bad experience with the definition of citizen energy communities in the EEG 2017, the last federal government refrained from another attempt of a definition. Alternative marketing options, as specified by the EU, have not been taken into account so far. In the Renewable Energies Directive, for example, "energy sharing" - the joint generation, distribution and consumption of energy - was stipulated. Unfortunately, the EEG 2021 is silent on such "cooperative member supply". It does not provide for any practically usable options for collective consumption, delivery to members or direct marketing.

But the new federal government has already announced a new EEG for Easter. Even if there will probably be no definition of "energy communities", the exemptions already announced in the coalition agreement, such as a higher de minimis limit or a proposal for "energy sharing", could be included.

7.5 Conclusions for Germany

Energy Communities and collective actions follow a trend that is becoming increasingly important for consumers. The electricity should not only come from renewable plants, but ideally from the region. And the operating company should not be an anonymous corporation or fund, but a company with regional roots. Regional electricity brands and providers that stand for investments in RE plants are therefore becoming increasingly popular. The decentralized character of renewable energies opens up new opportunities for regional energy suppliers. Similar to electrification at the beginning of the 20th century, which was accompanied by a wave of founding of municipal energy utilities, the energy transition in Germany is calling for regionally based companies. Many municipal utilities have long relied on regional potential, for example through run-of-river power plants or reservoirs. Renewable energies are once again drawing on natural and regional potentials and leading to a renaissance of decentralized energy supply. From an economic perspective, the reversal of energy flows means an opportunity for many municipalities. Expenditures by citizens, businesses, and commercial enterprises as well as the municipalities themselves are not spent on imported resources and thus flow out of the municipality but remain in the local economic cycles. For the local energy suppliers, the diversity of the new players and the convergence of the electricity, heat and mobility sectors are accompanied by new challenges. At the same time, however, it offers new business areas and a common objective: to work for a sustainable, innovative, and environmentally friendly energy supply from the region and for the region. Municipal companies in particular are the right partners for citizen energy.

Citizen participation requires openness on the part of municipal decision-makers and planners. Because it can happen that politically made decisions are not only questioned, but even overturned. Many municipalities are taking the expansion of renewable energies into their own hands and involving their citizens in the process. They support the local people to participate ideally or financially in plants or even to operate them themselves. And empirical studies have shown that financial citizen participation can significantly increase the acceptance of regional projects. In which organisational form this takes place is shown in practice in different facets. Due to the different approaches and models for citizen participation, the definition of citizen participation and the question of what constitutes citizen participation have been discussed in recent years.

Citizen energy thus ensures acceptance of individual energy transition measures, promotes the diversity of actors and citizen participation, and strengthens the regional anchoring of energy transition measures.

8 | Georgia

8.1 Introduction

In Georgia, IEMD and RED II regulations have not been transposed yet. Georgia, as a member of the European Energy Community has committed itself to transpose the third energy package and respective regulations according to its accession protocol to the Energy Community. It should be noted that the Energy Community Ministerial Council adopted the Clean Energy for all Europeans Package in late November 2021.

Even though IEMD and RED II regulations have not been transposed yet in Georgia, in general, the national legislation allows the establishment of collective actions/energy communities. However, the respective legal and regulatory framework are not solid and do not incentivize consumers.

8.1.1 List of relevant laws and regulations

- ▶ Law of Georgia on Energy and Water Supply, საქართველოს კანონი „ენერგეტიკისა და წყალმომარაგების შესახებ“, act of the Parliament, in force since 20/12/2019; available at: <https://matsne.gov.ge/document/view/4747785?publication=6>. It provides legal basis for the functioning and operation of energy markets in Georgia as well as roles, functions and responsibilities of different types of market participants, market and network operators.
- ▶ Electricity Market Concept Design, ელექტროენერჯის ბაზრის მოდელის კონცეფცია“, act of the Government of Georgia, in force since 16/04/2020; (EMCD), available at: <https://matsne.gov.ge/document/view/4852064?publication=2>. EMCD defines the market segments of the wholesale electricity market as well as market participants and the main event calendar for a transitory period, including the periods for imposing public service obligation on relevant electricity sources and steps of market liberalisation – market opening (in case of consumers).
- ▶ Electricity Market Rules, ელექტროენერჯის ბაზრის წესები, act of the Commission, in force since 16/04/2020; (EMR), available at: <https://matsne.gov.ge/document/view/4966631?publication=3>. EMR encompasses rules of electricity day ahead and intraday markets, together with balancing and ancillary services markets. The resolution foresees the price calculation principles on the above-mentioned markets, registration as a participant, exchanging information on trading, placing application/tender application and terms and procedures of financial settlement. The period of electricity trading is set at an hour (60 minutes) therefore the electricity price and volume are to be defined hourly.
- ▶ Electricity Retail Market Rules, ელექტროენერჯის საცალო ბაზრის წესები, act of the Commission, in force since 13/08/2020; (ERMR), available at: <https://matsne.gov.ge/document/view/4963325?publication=5>. ERMR encompasses Electricity Supply Rules, Universal Service Supply Rules and Supplier switching rules.
- ▶ Transitory Measures to be implemented in the Electricity Sector, ელექტროენერჯის სექტორში განსახორციელებელი გარდამავალი ღონისძიებები, act of the Commission, in force since 12/11/2020; available at: <https://matsne.gov.ge/document/view/5034413?publication=3>.

8.1.2 Structure and actors of the energy market

Electricity trading on the wholesale market is mostly carried out through direct contracts. Electricity is sold by electricity producers, importers, wholesale suppliers, the electricity system commercial operator (ESCO) and bought by electricity distribution licensees (in the supply and purchase of network losses parts), direct consumers, exporters, electricity producers (for power plant consumption), electricity suppliers, ESCO and the dispatch licensee (for covering losses within the transmission network). In order to trade on the wholesale market, it is necessary to be registered at ESCO as qualified undertaking. The overview of the existing market structure is provided below:

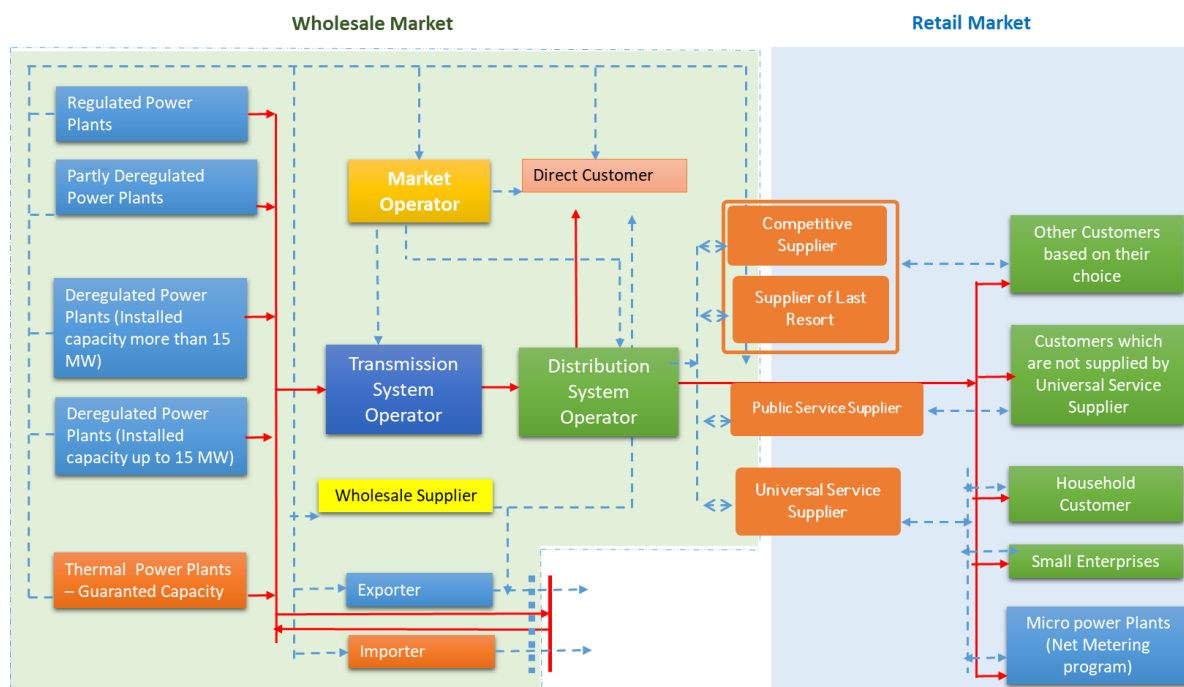


Figure 10: Georgian electricity market structure, Source: GNERC

For the regulatory purposes electricity generators are classified as:

- ▶ Regulated power plants which are licensed and GNERC sets fixed tariffs;
- ▶ Partly deregulated power plants which are licensed and GNERC sets marginal (upper margin) tariffs;
- ▶ Deregulated Power Plants (Installed capacity more than 15 MW) which are licensed and trade on the market with deregulated price
- ▶ Deregulated Power Plants (Installed capacity up to 15 MW) which do not require license and trade on the market with deregulated price
- ▶ Guaranteed capacity sources (Thermal Power Plants) for which the Commission sets guaranteed capacity fee and marginal tariffs (upper margin) of the electricity generation.

When it comes to guaranteed capacity sources, they are used for the purpose of ensuring sustainable, secure and reliable functioning of the electricity system of the country. The list of the guaranteed capacity sources is defined by the Government of Georgia according to their guaranteed capacity and period of providing system with the guaranteed capacity. In addition electricity import and export activities are deregulated and do not require licensing.

Supply side of the wholesale electricity market is also represented by the so-called traders who buy and sell electricity without supply to final consumers. Traders are authorised to trade electricity both inside and outside the country, including import and export. The final consumption side is fully liberalised, in compliance with the legislation. According to the data of the June, 2024, there are 65 direct consumers (in compliance with the Law on Energy and Water Supply – “large consumers”) on the wholesale market.

On the consumption side, the wholesale market also includes free suppliers, who are authorised to buy electricity on the organised market, as well as through bilateral contracts. The organised market also includes universal service suppliers, public service suppliers and suppliers of last resort, who supply electricity to relevant segments of the retail electricity market. As to the retail market, along with large consumers, eligible consumers also purchase electricity from free retail suppliers of electricity. The supplier of universal service supplies electricity to small enterprises and retail consumers, based on the tariff set for public service obligation by GNERC.

On the retail level, household and non-household are presented whereas they can also install renewable energy sources up to 500 KW of install capacity and engage in the net metering program. On the other hand, based on ongoing energy market reforms in Georgia, retail market is deregulated which implies that customer can choose the supplier. Furthermore, Government of Georgia imposed public service obligations for specific suppliers in order to protect customers and secure their electricity supply.

It should be noted that Georgian electricity market is in a transitional process and the targeted market model is defined in the Law on Energy and Water Supply (transposing the third energy package) and outlined in the Electricity Market Concept Design approved by the Government of Georgia based on the law.

The electricity day-ahead and intraday market operator ensures the operation of the day-ahead and intraday market, maintains registries of market participants and establishes transparent, accessible and reliable financial settlement systems for the relevant segment of the organised market. Under the Decision No. 39/2, of May 28, 2020, the Georgian National Energy and Water Supply Regulatory Commission (GNERC) has issued a license to the newly founded JSC Georgian Energy Exchange which will be responsible for the operation of the day-ahead and intraday markets.

The operator of the balancing and ancillary services market ensures operation of the relevant market, purchases products of the balancing and ancillary services market, calculates imbalance costs, defines the amount of financial guarantee for securing payment of the balancing and ancillary services and imbalance, as well as the financial liability for products purchased and establishes transparent, accessible and reliable settlement system for the relevant segment of the organised market. Under the Decision No. 39/2, of May 28, 2020, the regulator GNERC has issued the license for balancing and ancillary services to the Georgian State Electrosystem JSC.

Day-ahead and intraday, as well as balancing and ancillary services markets represent a monopolistic licensed activity, while bilateral contracts market, in the format of trade platform operation, as well as in the format of over the counter trade, do not require a license and can be carried out by any person.

A significant undertaking within the wholesale market structure is the wholesale public service organisation. The tasks of establishing this organisation’s system and making it operational are assigned to the electricity system commercial operator (ESCO). The purposes of the wholesale public service are:

- ▶ support to renewable energy and producers who are parties to guaranteed purchase contracts and facilitation of integration of the electricity, generated by them into the organised market;
- ▶ support to universal service suppliers through ensuring stable prices of the electricity to be purchased and facilitation of integration into the organised market;
- ▶ security of supply to the consumers existing on the occupied territory of Georgia (the Autonomous Republic of Abkhazia), through purchase of electricity on the organised market.

8.2 Community energy and collective actions

8.2.1 Legal framework for community energy and collective actions

Georgia is in the phase of energy market transition. In 2016, Georgia became a contracting party to the Energy Community and committed itself through the Accession Protocol to transpose the so-called third energy package principles and regulations into national legislation.

The primary legal act that indirectly regulates energy communities and collective actions is the Law on Energy and Water Supply that was adopted by the Georgian Parliament by the end of 2019. The Law is mostly based on 72/2009/EC and 73/2009/EC Directives and does not contain provisions of the clean energy package (CEP). Moreover, the Georgian Law on Promotion of Production of Energy from Renewable Energy Sources, that was adopted with the Law on Energy and Water Supply by the end of 2019 as one legislative package, is based on RED I – 2009/28/EC that does not contain provisions on energy communities and collective actions at all. It has to be noted that the Ministerial Council of the Energy Community adopted the clean energy package in the Energy Community acquis on 30th of November 2021, thus Energy Community contracting parties took commitment to transpose the clean energy package directives/regulations into national legislation, including RED II by the end of the year 2022. However, RED II is not transposed yet into national legislation.

Presently, there are no specific provisions in the Georgian legislation that explicitly regulate main terms and conditions for the operation of energy communities. The elements supporting energy communities are scattered across different legislative acts. The Law on Energy and Water Supply defines the concept of micro-generators and allows end user or group of end users to construct own micro generators that use renewable energy up to 100 KW installed capacity, unless the national energy regulator (NRA) defines a higher threshold, not exceeding 500 KW installed capacity. The Law stipulates that an end user or a group of end users owning a micro-generating power plant shall be authorised to connect the micro-generating power plant to an electricity distribution network, and to supply the surplus electricity produced by this power plant to an electricity distribution network. The surplus electricity produced by a micro-generating power plant and supplied to an electricity distribution network shall be purchased by the universal service supplier in whose service area this plant is located. The terms of use of surplus electricity by an end user or a group of end users, and the cost of the surplus electricity purchased from the end user or group of end users, is determined by GNERC.

In above mentioned cases, the operation of micro-generators is not considered as an electricity production activity and an economic activity and the end user or the group of end users are exempted from any fees and payments on the netted energy such are grid fees, system service fees, market service fee, regulatory fee, VAT and income tax. The total installed capacity of micro-generators in the distribution system is defined by GNERC to ensure the sustainability and stable operation of the electricity system. The maximum capacity which is determined by GNERC currently increased up to 8% of the distribution grid's peak load in the previous year.

Furthermore, the Distribution Grid Code adopted by GNERC on 18th of July 2021 by №19 Resolution, defines the maximum eligible (allowed) capacity for micro-generators at the level of 500 KW. Besides, the Distribution Grid Code determines that a group of end users can install a micro-generator at the premises of one of group member or at another location of the distribution grid and use energy generated by the micro-generation equally by all group members or based on pre-defined formula. There is no geographical restriction applied to such collective usage of micro generators except that all end users must be the customer of one and the same distribution system operator (DSO). All consumers are authorised to participate in this scheme despite of their type (household, commercial) or voltage level.

Another issue is the state support for households in high mountain regions in Georgia. The Law on the Development of High Mountain Regions, adopted in 2015, aims to promote social and economic progress in the

mountainous region. According to the law, the government must compensate household customers for 50%, up to 100 kWh, of monthly consumed electricity charges in high mountain settlements.

These are all the provision that are currently available in Georgia for end users to group up virtually (at wider locations) or physically (in one geographical area) and share energy generated by micro generators. There are no other principles provided for creating a group for collective action or for a local energy community. A contract between members of the group or between group members and the DSO is not required. The only requirement for micro generators is that a member of a group, or all members collectively, apply to the DSO and request that the micro generators is connected to the distribution network and used for energy sharing, indicating a formula for sharing the energy and the number of customers. The DSO acts as one-stop-shop and in case the application contains all required information, it executes the order. The same procedure applies for prosumers. The legislation sets the same procedure regardless of whether a micro generator connection and usage is requested individually, by one end user or by a group of end users. This regulation greatly contributed to the increase of installed capacity and number of micro generators in Georgia, as it is very beneficial for end users due to the increased maximum allowed capacity up to 500 KW (see graph bellow). 1,213 micropower plants with a total installed capacity of 73.6 MW were registered as of first quarter of 2024.

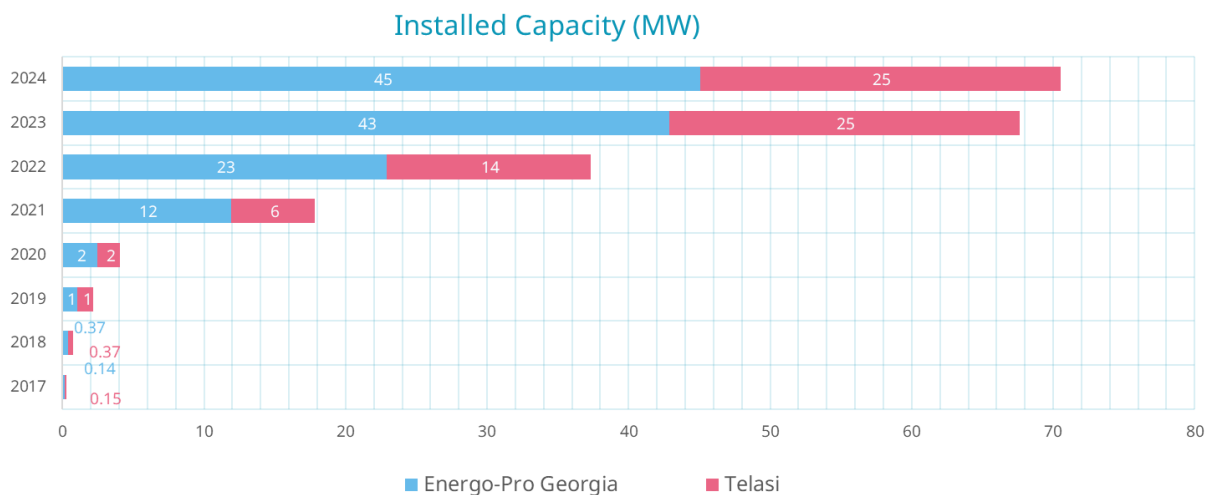


Figure 11: Total Installed capacity and number of consumers in the Net Metering Program Source: GNERC

There is no construction permit needed for micro generators up to 50 KW but construction permits for higher capacities are regulated by the №255 Decree of the Government of Georgia on Construction Permits of 31 May of 2019. According to the Decree:

- ▶ Hydropower plants up to 50 kW, solar power plants, and biogas installations does not require a construction permit.
- ▶ Hydro power plants above 50 KW up to 1 MW installed capacity, also all wind power are subject to permission procedures of local authorities.
- ▶ Larger hydropower plant construction permits are mostly approved by the central authority as they are mostly construction projects with high risks due to derivation pipes, penstocks, dams and underground tunnels.

The general rules for construction permit issuing stages are as follows:

- ▶ I stage: Approval of the terms for the use of the land plot for construction - 12 working days;
- ▶ II stage: Agreement on the construction architecture of the project, construction and/or technological scheme and environmental impact assessment (EIA) - no more than 18 working days.

- ▶ III stage: Issuance of the construction permit - not more than 10 working days.

The project promoter is authorised to request simplified permitting procedure that will consist of the two stages (Stages II and III are united in the simplified procedure):

- ▶ I stage: Approval of the terms for the using land plot for construction - 15 working days
- ▶ II stage: Issuance of the construction permit - 20 working days.

The permit issuing entity is authorised to prolong the administrative proceedings up to 3 months for the first and third stages if it sees necessary for the thorough examination of the application documents. In case of a positive conclusion on the readiness for exploitation, the applicant will receive a commissioning certificate.

There is no environment impact assessment needed for power plant constructions up to 2 MW installed capacity and GNERC does not issue an electricity generation license for this kind of plants.

As regards to grid access, micro generators are connected only to the distribution grid and the one-stop-shop approach for end user(s) is used which means that the end user submits the application and pays the charges directly to the DSO, while the DSO must complete connection work (either change the ordinary meter to a bi-directional meter or arrange the extension to the distribution grid entirely) within the schedule established by GNERC's regulations. The Distribution Grid Code includes two possible regimes of the connection procedure:

- ▶ the end user connects the micro-generator at own premises (internal network of the consumer)
- ▶ the micro generator's connection point is located at the distribution grid.

For the first case, the existing meter has to be changed by the DSO to a bi-directional smart meter. The fee for the meter change is set at a range from 85 Euros (10KW) to 570 Euros (KW) and the DSO has to complete the work in 15 to 25 working days. As for the second case, the DSO is required to construct an entire extension to the distribution network for which the end user pays a fee in the range of 170 to 2500 Euros.

8.2.2 Contractual relations of community energy/collective actions

The civil code of the Republic of Georgia authorises group of citizens to make agreement and undertake collective action of any type. There are no specific legal or regulatory rules established for the relation of energy community members or for any collective action. End user(s) who own micro generators and group up for collective usage (under net metering scheme – explained in section 8.4) of it, are not required to have special contractual relationship with the supplier(s) or DSO, except normal standard contracts which are approved by GNERC. Standard contracts are the collection of existing norms and do not contain energy community/collective action specific requirements. The application, which is submitted by the end user or a group of end users to the DSO is considered as the legal setting and includes GNERC approved terms and conditions for connection and usage of micro generators.

8.3 Energy communities

As explained above, the Georgian energy legislation does not include RED II and IEMD requirements on energy communities. Transposition of RED II and IEMD is necessary in order to fulfil the commitment of the Ministerial

Council decision²³ as well as promote energy community large scale development in Georgia. The same deadline for transposition applies to the [Directive on common rules for the internal market for electricity](#) (EU) 2019/944²⁴

8.3.1 Legal framework for energy communities

Answers are provided in the section above.

8.3.2 Contractual relations and liabilities of energy communities

Answers are provided in the section above.

8.4 Support Schemes

There are no special support schemes available for energy communities in the legislation of the Republic of Georgia. The only support scheme that is available for collective action of is net metering.

Any end user or group of end users who is the owner of solar, wind, hydro and/or other renewable energy micro generator(s) with a capacity of up to 500 kW, can apply for connection to the electricity distribution network and feed the excess electricity to the distribution grid.

As a first step self-generated and consumed energy is netted monthly (one billing period). In case excess energy was generated the credit rolls over to the next month and netted again. Credits can be retained up to 12 months. This is a classical net-metering scheme which is a process of reverse metering of outflows of excess electricity generated by micro generators and the electricity received from the network, whereby the generated and consumed electricity offset each other (ratio 1:1). An overview of the net metering scheme is provided in the figure bellow:

²³ Decision 2021/14/MC-EnC: amending Article 20 and Annex I to the Treaty establishing the Energy Community and incorporating Directive (EU) 2018/2001, Directive (EU) 2018/2002, Regulation (EU) 2018/1999, Delegated Regulation (EU) 2020/1044, and Implementing Regulation (EU) 2020/1208 in the Energy Community acquis communautaire

²⁴ Decision 2021/13/MC-EnC amending Annex I to the Treaty Establishing the Energy Community and incorporating Directive (EU) 2019/944 and Regulation (EU) 2019/941 in the Energy Community acquis communautaire

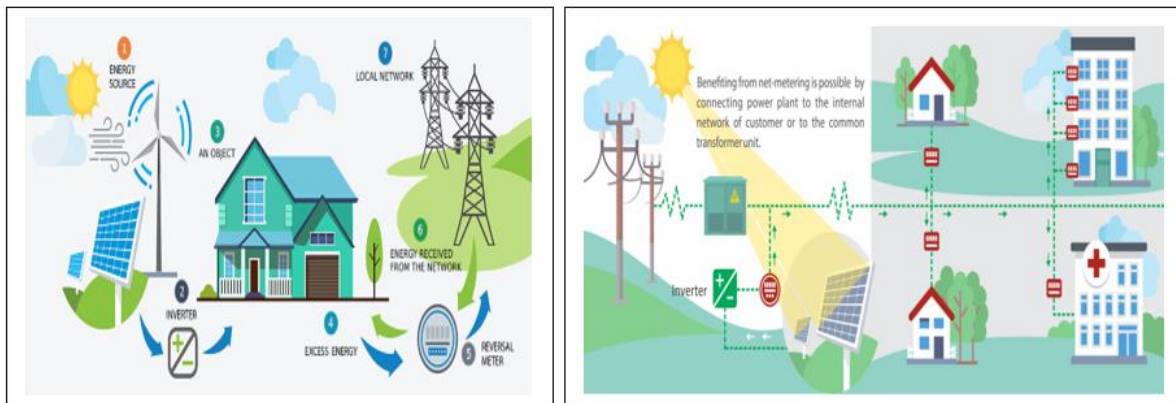


Figure 12: On the left: group connection, on the right individual connection in net metering, Source: GNERC

Any natural or legal person, house-owner, partnership, urban or rural resident can use the net metering mechanism as it is not considered an entrepreneurial activity. The micro-generating power plant may not be the property of the end user or the group of end users, it can be under his/her (their) temporary ownership in the form of lease, rent or other type of agreement. Electricity generation by the micro generator and consumption of the generated electricity can take place at different places. In latter case it is necessary that the micro generator and the end user or group of end users are connected to the same distribution company. If the generation and consumption points are different from each other smart reverse meters are installed to each end user for settlement purposes.

Metering, netting and financial compensation:

The electricity supplied by the owner of the micro-generating power plant to the electricity network and the electricity received from the distribution network are metered separately by a smart reverse meter.

- ▶ If the micro-generating power plant generates an excess energy and the amount of electricity supplied to the network exceeds the amount of energy received from the network, the difference, i.e. excess energy will be deemed as the energy supplied by end user to the network and will be credited to the bill of the next month.
- ▶ If the total amount of electricity generated by the micro-generated power plant and billed to the end user (supplied to the network) as a credit is lower than the amount of electricity received from the distribution network, the difference will be deemed as electricity purchased from the network and will be billed by using the end user tariff of the relevant voltage/level set by GNERC;
- ▶ The electricity reflected as a credit in the bill of the final month at the end of the reporting year (from May to May) will be deemed as electricity purchased by the distribution network. Respectively, the universal supplier who supplies to the end user will issue the final bill in accordance with the electricity purchase tariff set by GNERC.
- ▶ After the end of each calendar year (May-May in this case), the amount credited for the electricity supplied to the network may be reflected on the end user bill (as monetary value and not as kWh) and used for the next bill or upon request of the end user, the universal supplier transfers it to the bank account specified by the end user within three working days.

In case of a group of end users, the distribution license holder will bill each member of the group individually. Electricity generated by the micro-generating power plant will be distributed equally to the group members, unless otherwise agreed among the group members.

Another advantage of end users participating in the net metering scheme is that the operation of a micro-generator is not considered as electricity production activity and as an economic activity and the end user or group of end users are exempted from any fees and payments on the netted energy, such as grid fees, system service fees, market service fee, regulatory fee, VAT and income tax.

8.5 Conclusions for Georgia

The legal and regulatory framework in Georgia is underdeveloped in regard to energy communities and collective actions of self-consumers. The Georgian primary and secondary legislation are based on the third energy package provisions. Collective actions of self-consumers using micro generators up to 500 KW is feasible in Georgia as the Law on Energy and Water Supply and GNERC regulations contain respective rules and regulations. Net metering regulation is the only mechanism used. Although it is not the most efficient and market oriented mechanism, it provides a minimum framework for end users to utilise benefits of micro-generation monetary. The interests in participating in self-consumptions schemes and in collective actions rose significantly in recent years. Georgia has significant potential to arrange collective actions by using off-grid technologies including interesting solutions for production, agriculture and tourism in remote areas where the extension of the public grid is economically not justified. Construction of off-grid communities in Georgia are deregulated and solely dependent on the developer/participants.

As a major support schemes for this endeavour of end users may be deemed:

- ▶ The connection of micro generators to the distribution grid is streamlined, the connection procedure is well established including the one-stop-shop approach and connection fees/deadlines are regulated;
- ▶ Utilising production from micro-generation is possible via net-metering regulation accompanied with financial compensation for excess energy (explained in detail above);
- ▶ The creation of a virtual group of end users is allowed regardless of the geographical location and number of members;
- ▶ End users are exempted from grid charges, taxes and other levies on energy consumed without using public grid, physically or virtually;

Despite abovementioned, Georgia faces major updates of its energy legislation in terms of energy communities and collective actions of self-consumers.

9 | Hungary

9.1 Introduction

In Hungary, the transposition of the IEMD and RED II on community energy started with the amendment of the existing national legislation governing the national electricity market. As amended in December of 2020 and June of 2021, the provisions of Act LXXXVI of 2007 on Electricity - and its implementing decrees - stipulate the most relevant provisions defining CECs and RECs and their activities.

At first, RECs were defined by national law as a sub-type of CECs and the scope of their activity was limited to electricity. By the end of 2023, a new definition for RECs was adopted in the field of heating and cooling. From this point of view, the transposition of Art. 2(16) RED II cannot be regarded as complete yet.

9.1.1 List of relevant laws and regulations

- ▶ Act LXXXVI of 2007 on Electricity (2007. évi LXXXVI. törvény a villamos energiáról, act of the Parliament, in force since 15.10.2007, abbr.: VET, available at: <https://njt.hu/jogszabaly/2007-86-00-00>). The VET provides the most important rules on the operation of the national electricity market, the rights and obligation of its actors and establishes the system of electricity administration.
- ▶ Gov.Decree 273/2007. (X. 19.) on the implementing rules of certain provisions of Act LXXXVI of 2007 on Electricity, (273/2007. (X. 19.) Korm. rendelet a villamos energiáról szóló 2007. évi LXXXVI. törvény egyes rendelkezéseinek végrehajtásáról, in force since 1.1.2008, abbr.: VET VHR., available at: <https://njt.hu/jogszabaly/2007-273-20-22>). This Decree governs the implementation of the VET, for instance, the registration of energy communities.
- ▶ Act XXII of 2013 on the Hungarian Energy and Public Utility Regulatory Authority (Magyar Energetikai és Közmű-szabályozási Hivatalról szóló 2013. évi XXII. törvény, <https://njt.hu/jogszabaly/2013-22-00-00>)
- ▶ 1/2014 (III. 14.) MEKH Decree on the administrative service fees of the Hungarian Energy and Public Utility Regulatory Office and on the rules for the collection, management, registration and refund of administrative service fees, supervisory fees and other revenues (1/2014. (III. 14.) MEKH rendelet a Magyar Energetikai és Közmű-szabályozási Hivatal igazgatási szolgáltatási díjainak mértékéről, valamint az igazgatási szolgáltatási, a felügyeleti díjak és egyéb bevételek beszedésére, kezelésére, nyilvántartására és visszatérítésére vonatkozó szabályokról, <https://njt.hu/jogszabaly/2014-1-20-5Z>)
- ▶ 10/2016 (XI. 14.) MEKH Decree on the electricity system charges, connection charges and special charges (10/2016. (XI. 14.) MEKH rendelet a villamos energia rendszerhasználati díjak, csatlakozási díjak és külön díjak alkalmazási szabályairól, <https://njt.hu/jogszabaly/2016-10-20-5Z>)
- ▶ Act LIV of 2013 on the execution of utility price cuts (2013. évi LIV. törvény a rezsicsökkentések végrehajtásáról, <https://njt.hu/jogszabaly/2013-54-00-00>)
- ▶ Act XL of 2008 on Gas Supply (2008. évi XL. törvény a földgázellátásról, act of the Parliament, in force since 26.06.2008, abbr.: GET, available at: <https://njt.hu/jogszabaly/2008-40-00-00>). The GET provides the most important rules on the operation of the national natural gas market, the rights and obligation of its actors and establishes the system of administration.

9.1.2 Structure and actors of the energy market

9.1.2.1 Legislators and regulators of the Hungarian energy market

In Hungary, the acts adopted by the Parliament are at the top of the legislative hierarchy and the Government is authorised to issue decrees and controls the state administration. Within the Government, **the primary responsibility for energy policy (including renewable energy sources) and for the transposition/implementation of European energy legislation is delegated to the Ministry for Energy (EM).**

The *Magyar Energetikai és Közmű-szabályozási Hivatal* (**Hungarian Energy and Public Utilities Office – the MEKH**) is an **autonomous regulatory authority** of which decrees have the force of law. For instance, distribution tariffs are subject to regulation. Tariffs are prepared and distributed by the MEKH, which details the calculation methodology (taking into account the principle of efficiency at the lowest cost, appropriate incentives for system operators, return on investment, etc.).

The legislation is supported by a framework of industry instruments, such as the Grid Code, the Trading Code, the Distribution Code and the **Data Exchange Code** (Electricity Supply Codes), which are prepared by MAVIR and approved by the MEKH. These codes specify the detailed rules of the day-to-day operation of the electricity system, cross-border electricity transmission and the relationship between network licensees and system users within the wholesale and retail sectors. The Electricity Supply Codes also set out the detailed technical requirements and standards to be observed by licensees.

The TSO develops the Operating Code containing the rules, procedures and methods pertaining to the technical functions of the electricity system and the transmission network, and the Commercial Code containing the essential provisions relating to the supply of electricity, the mandatory content elements for the collection, processing and disclosure of metering data for billing purposes, the cross-border transmission of electricity, ancillary services.

Distributors, upon consultation with the authorised operators and, via their representative organisations, with the customers and other network users, including energy communities and aggregators, shall develop the Distribution Code to regulate the functions of the distribution network, the scope of distribution flexibility services, including the procurement and allocation thereof, and demand-side management.

The Data Exchange Code covering the description of data exchange processes and the technical, content and formal requirements of data exchange, and the international business and trading code is prepared by the distribution network operators in consultation with electricity traders.

9.1.2.2 Electricity market structure

The national law on active customers, renewables self-consumers, CECs and RECs applies in the electricity sector and RECs can be established in the field of heating and cooling, but does not cover other areas of energy.

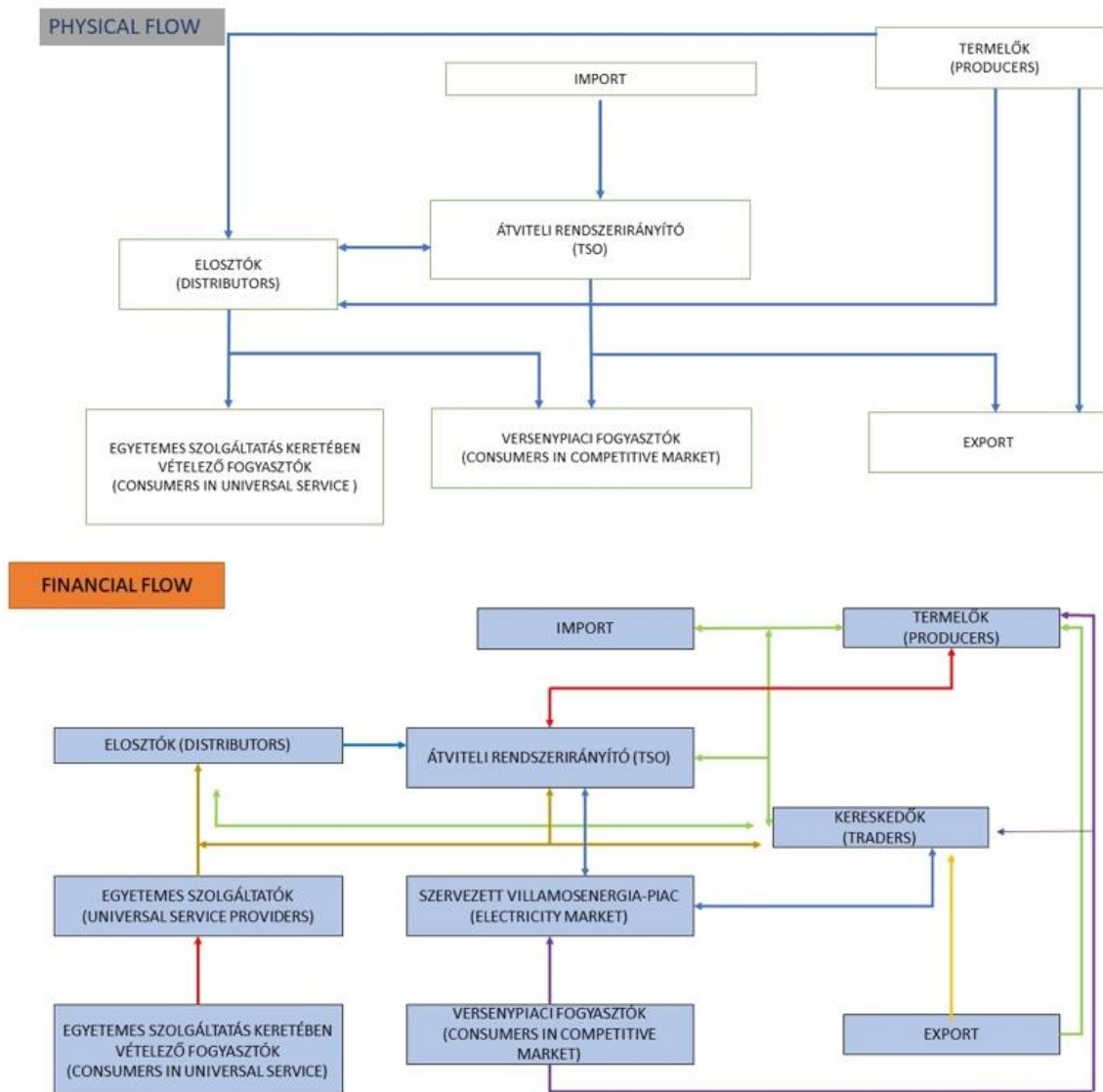


Figure 13: Model of the operation of the Hungarian electricity market (source: The Electric Power System -Hungary - www.cigre.org)

The MVM Group (Hungarian Electricity Works) is a vertically integrated, state-owned energy group active in the entire domestic energy system. The MVM is taking a key role in the electricity and natural gas market and is now present in all key areas from infrastructure through trading to providing universal service.

Following the restructuring and partial privatisation of the vertically integrated state-owned MVM Ltd., several generating companies, six distribution companies and a transmission company were established. The MVM Group is a dominant electricity wholesale trader in Hungary, and it also holds considerable interests in the retail market (MVM Partner Zrt.). As a power generator company, the MVM Group operates the Paks Nuclear Power Plant and the Matra Power Plant (the two largest power plants of the country).

The first level of the electricity system is MVM's national core network, which consists mainly of 400 kV transmission lines and the associated base-load power plants. The second level is the main distribution network, operated by the electricity distribution companies, which is 120 kV and delivers energy to the consumer nodes (cities, districts, large consumers). The substations transform the high voltage of 120 kV to the third level, the local distribution network voltage level, which is the medium voltage of 20 and 10 kV. The medium voltage

network is used for the operation of the distribution network transformers, usually located in the street, which provide the low voltage distribution network, the population and other consumers with the voltage level of 400/230 V.

High-voltage networks (primary and main distribution networks, 400 kV, 220 kV, 120 kV) are installed for the transmission of high power over long distances. These networks feed the high/medium voltage transformer stations. Medium-voltage networks (distribution networks, 10 kV, 20 kV and 35 kV networks) are the medium/low voltage transformer stations installed near consumers supply electricity to the distribution network. Low voltage networks (0.4 kV networks) supply energy directly to consumers direct supply of electricity.

The MVM owns the only transmission system operator (TSO) MAVIR (Hungarian Electricity System Operator Ltd.) which is also the administrator for the wholesale market. The distribution networks are operated by six DSOs. Authorised network operators (TSO and DSOs)

- ▶ operate and maintain the transmission and distribution systems, execute the maintenance, repair and renovation works and improvements,
- ▶ organize the management of data and
- ▶ have in place systems in due compliance with the rules laid down in electricity supply codes and have in place processes for the exchange of data and information to ensure that data for the planning, procurement and settlement of systemic trading and flexibility services are made available under the principle of equal treatment.

According to VET Art. 21(2), producers, electricity suppliers, providers of universal services, customers, aggregators, energy communities, and authorised distributors are required to set up a **balancing group**, or to join an existing group. This balance unit is represented by the balance unit manager (usually a trader or generator) responsible for settling the balancing charges with MAVIR. MAVIR is balancing generation and demands over the entire transmission system and procures balancing actions from market participants, to match supply and demand.

The TSO and the DSOs are under a legal obligation to grant access to the distribution network to third parties on a transparent and non-discriminatory basis. Art. 35 of the VET requires that authorised network operators shall make available the transmission and distribution networks they control to network users in exchange for the network access fee, subject to contracting obligation.

The DSO manages the distribution network, transmits electricity through those, prepares of quantitative settlements as specified in the Electricity Supply Codes, provides connection and access to the transmission network, and maintains a data transmission and information system with facilities for data exchange.

The exchange of data between the DSO and an electricity supplier of service locations connected to the distribution network is governed by the Data Exchange Codes, except where the authorized distribution network operator and the electricity supplier carry out their authorized activities in a common IT system.

At the beginning of 2024, the rules on the regulated electricity market have been also changed. Currently purchase transactions may be conducted by users, or purchase and sales transactions on the intraday and day-ahead markets operated by a regulated electricity market, and **active customers may conclude purchase and sales transactions**, purchase and sales transactions may be conducted by aggregators and energy communities as well. As a prerequisite, they must satisfy the conditions prescribed in the internal regulations of the regulated electricity market, and subject to an agreement concluded with the operator of the regulated electricity market with respect to trading, and also with a body providing settlement services for the settlement of transactions.

These rights of users, active customers – if member of an energy community - might be exercised by the energy community on the regulated market.

9.2 Community energy and collective actions

9.2.1 National legal concept of community energy/collective actions

Before the transposition of the IEMD and RED II, the possibility to produce and consume renewable electricity by customers has already been regulated by the VET under the term of household sized power plants (HMKE). An HMKE - which might be considered as precursors to active users (IEMD), as the user feeds its surplus electricity into the grid - can generate electricity from RES.

The amendment to the VET – which entered into force on 1 January 2021- adopted the interpretative provisions of 'active customer' (IEMD) and 'jointly acting active customers' (REDII) - Art. 3 pts. 17a and 17b of the VET.

Active customer is a customer who consumes or stores self-generated or self-stored electricity at his own connection point, feeds it into the public utility system, passes on or shares through a private line or who offers to participate in flexibility or energy efficiency schemes in terms of consumption or in-put, provided that those activities do not constitute its primary commercial or professional activity.

Jointly-acting active customers mean a group of customers connected to the public utility system through a common connection point, where they consume or store electricity generated or stored by themselves or by a member of the jointly acting group at their own connection point, feed it into the public utility system, or they offer to participate in flexibility or energy efficiency schemes in terms of consumption or in-put, provided that those activities do not constitute their primary commercial or professional activity.

As of 1 July 2021, several transposing definitions of RED II terms entered also into force. The new Art. 3 pt. 17c) and 17d) and Art. 66/B(2) define 'renewables self-consumer', 'jointly-acting renewables self-consumers' and REC.

Renewables self-consumer is defined as an active customer who produces electricity for self-consumption from renewable energy sources, or who is engaged in the storage and sale of electricity self-generated from renewable energy sources.

Jointly acting renewables self-consumers are at least two renewables self-consumers engaged in the activity of renewables self-consumer in the same building and agreed to act jointly in that respect.

Several existing domestic examples of community energy initiatives with strong corporate involvement can be mentioned in the electricity market:

- ▶ pilot project of the Social Solar Power Plant programme of the Hungarian Maltese Charity Service in cooperation with E.ON (<https://www.szocialisnaperomu.hu/>)
- ▶ the MVM (Hungarian Electricity Works Ltd. – see below) is implementing the tender project "Energy Communities in Hungary - A model project for the establishment of energy communities and community solar parks owned by them and the development of their sustainable operating models (<https://nkfih.gov.hu/palyazoknak/egyeb-tamogatas/energiakozossegek>)

9.2.2 National legal framework for the establishment of community energy/collective actions

An HMKE is a micro power plant connected to a low voltage system with an interconnection capacity of less than 50 kVA at any given connection point (Art. 3 pt. 24 of VET). Under the VET, establishment and operation of this type of small power plant is not subject to authorisation, but the intention to install and operate an HMKE must be agreed upon and approved by the DSO.

The electricity generated by the HMKE must be taken over by the electricity trader or universal service provider selling the electricity at the connection point, and the HMKE's operator with time series settlement may sell the electricity to any market operator under an electricity purchase contract.

The relations of the HMKE with the DSO and electricity trader are set out in **the network connection agreement, the network use agreement, the balancing group membership agreement and the electricity purchase contract.**

It has to be noted that HMKEs may be installed or operated at a given connection point up to the capacity available to the user at the same connection point without any modification of the network connection contract.

An active user does not lose other rights, such as his right to the universal service, by operating a household-scale small power plant (HMKE) or participating in an energy community if he is otherwise entitled to it.

9.3 Energy communities

9.3.1 National legal concept of energy communities

The term of CEC was transposed as 'energy community' ("energiaközösség") by a new article of the VET (Art. 66/B(1)). In the national legislation, energy community is

- ▶ a legal entity set up as a cooperative society or non-profit business association,
- ▶ of which primary purpose to provide environmental, economic or social community benefits to its members or in the field specified in the energy community's instrument of constitution,
- ▶ carrying out at least one of the following activities: engage in generation, storage, consumption of electricity, provide distribution flexibility services, electricity sharing, aggregation, provide electro-mobility service.

In addition, the domestic legislation provides two different REC definitions. The first has been inserted among the provisions of the VET in its Art 66/B(1a) and defined **REC as a sub-type of CEC (e-REC).**

Therefore, in Hungary, an e-REC is an energy community (CEC) that

- ▶ produces electricity from renewable energy sources, and consumes, stores or sells such electricity,
- ▶ shall be directed by a member or members whose connection points are in the same high or medium-voltage transformer station zone as the connection points of the electricity storage facility and power plant owned by the renewable energy community.

In other respect, e-RECs are subject to the provisions on energy communities.

Possible legal forms for CEC/e-RECs: cooperative society, non-profit business associations (i.e. general partnership, limited partnership, private limited-liability company, public limited company, private limited company) which entities can be established under the provisions of the Civil Code.

Membership: the transposing law does not restrict the membership of CEC/e-RECs in Hungary, even one natural or legal person can establish an energy community

Activities allowed:

- ▶ CEC has to carry out at least one of the activities listed by Art. 66/B(1) of VET
- ▶ REC is determined via its activity relating to RES (production, consumption, storage and/or selling)
- ▶ after obtaining authorisation from the MEKH, CEC and REC may (Arts. 66/B(2) and 74(1) VET)
 - establish a micro power plant with a nominal generation capacity of 0.5 MW or more, generate electricity;
 - implement, expand private lines (with the exception of private lines within a building);
 - install and decommission direct lines, exclusive of the direct lines supplying electricity to customers on the premises of the power plant;
 - operate public light fixtures, excluding the light fixtures of the public lighting distribution network;
 - operate electricity storage facility with a nominal output capacity of 0.5 MW or more.

Activities excluded (Arts. 66/B(2), (3) and 74(1) VET):

- ▶ transmission system control;
- ▶ the distribution of electricity;
- ▶ provision of universal supply service;
- ▶ the operation of the regulated electricity market;
- ▶ participate in cross-border cooperation under the VET.

Solving the legal – and the technical - questions on sharing on legislative level is essential in spreading of energy communities formed by citizens and NGOs. Provisions on electricity sharing have been changed and it became slightly more detailed since 2022. The term of “electricity sharing” is defined by the VET as

- the supply of electricity generated or stored by an active customer or energy community,
 - directly to another user or energy community through the public utility system, a private line or customer connection system, or
 - to a final customer through a private line;
- the supply of electricity generated or stored by a final customer through a private line directly to the authorized operator of the private line,

Electricity sharing can be carried out with or even without consideration. It must be noted that electricity sharing is possible in principle, however, it does not work in practice, neither within condominiums nor through the public network between different points of use.

Management and control of CECs and e-RECs: The provisions of the Civil Code laying down the most important rules of legal persons have to be taken into account. The mandatory and dispositive requirements of the domestic company law were not affected by the transposition of the IEMD and RED II and the rules for certain types of legal entities do not fully comply with the requirements of RED II. For instance, in the case of cooperative societies and for limited-liability companies, the Civil Code lays down the prohibition of public invitation, i.e. members may not be solicited by public means.

On the other side, the VET introduced conditions in management and control of CEC/e-RECs to comply with the EU law.

With regard to control rights, Art. 66/B (5) and (6) of the VET stipulates that certain persons shall not be a member who manages the energy community (both CECs and RECs) by self, or under majority:

- ▶ who operates in the field of electricity, gas supply under Regulation (EC) No. 1893/2006, provided that those activities constitute its primary commercial or professional activity, or
- ▶ who is the sole or majority owner of or holds a dominant influence in a legal person, or is the executive officer or affiliated company of a legal person that operates in the field of electricity, gas supply as its main activity.

Such persons may not participate in the decision-making body of the energy community to the extent required for exercising control rights.

(Note: Therefore, if the mentioned activities are not the main activity in the articles of association, Art. 66/B(5) and (6) does not apply.)

In the case of e-RECs, the condition of “proximity” has been transposed into national law so as that the controlling members’ connection points are in the same high or medium-voltage transformer station zone as the connection points of the electricity storage facility and power plant owned by the renewable energy community.

Rights of members: the VET requires that participating in an energy community should not be detrimental to the customers rights and obligations accrued under that act.

The domestic concept of an e-REC is not in line with EU requirements in several respects. The RED II’s renewable energy community category covers not only electricity (and heating/cooling) but all energy types (e.g. heat, biofuels), while the Hungarian legislation defines the renewable energy community as a sub-type of citizen energy community and does not exclude large companies from its membership, contrary to EU requirements.

The spread of energy communities may also be hindered by specific rules of the district building codes. Some district building regulations stipulate that a power plant the size of a HMKE can only be installed when it has a capacity which matches the intended purpose of the building. This may be an obstacle to the installation of RES investments with a capacity larger than the HMKE size, as well as an obstacle to sharing excess energy generated.

Since 1 January, 2024 RECs can be established in the field of heating and cooling, as already mentioned above. The interpretative provisions of GET have been amended with the definition of Renewable heat energy community (hereinafter referred to as h-REC). Unlike e-RECs, h-RECs can be established in any form of legal entities existing in Hungary. The shareholders or members might be natural persons, small and medium-sized enterprises and local municipalities. The primary purpose of h-RECs is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profit. According to the GET, the h-REC produces energy from renewable energy sources, uses, stores or sells such energy, and it shares the heating and cooling energy produced by a renewable energy project it owns or developed by others within the renewable heat community. Specific rules on establishment, registration of h-RECs and on how the energy produced by it can be shared has not been enacted yet.

Establishment and registration

Legal entities (both e-REC and CEC) can be **cooperatives** or **non-profit business associations** in Hungary.

The **first procedural step** – required by the Civil Code – is the **registration by the court of registry**.

The second stage of establishment is the **registration at the MEKH**. After the legal person is established, it can initiate its registration as an energy community/renewable energy community at the MEKH. The MEKH is a one-stop shop authority for energy licensing, including for electricity, gas and district heating and responsible for the registration of energy communities, including renewable energy communities. The VET does not require a licence

for energy community operation per se, but the applicant is required to apply for registration 75 days before the start of the activity.

At present, 4 energy communities (CEC) are already registered by the MEKH²⁵, however, these are not operating yet.

Authorisations

As a main rule, production, trade, distribution, provision of universal service, aggregation, storage of energy and establishment of grids fall under permitting obligation according to the VET and the VET VHR.

For power plants with a rated capacity of 50 MW or more, electricity may be produced with a production operating licence. In small power plants with a rated capacity of 0.5 MW or more, only a simplified licence is needed.

A construction permit is not required by electricity law:

- ▶ for the construction of a micro power plant with an interconnection capacity of 50 kVA or less at any given connection point, with the proviso that the combined interconnection capacity at that connection point may not exceed 50 kVA;
- ▶ for the construction of a micro power plant with a nominal generation capacity not exceeding 0.5 MW if it is not connected to an electrical installation for the purpose of input, and so long as it is not a protected site or a Natura 2000 area.

Even if exempted from construction permit, the facility must still comply with technical safety requirements and building regulations, including local building codes and regulatory plans and national planning and building requirements.

A construction permit is not required for solar panels with a size of an HMKE, so the regulation should be taken into account for solar plants with a size above this. Small power plants of less than 0.5 MW, which are not isolated plants or set up with a reverse power protection system, are subject to a building permit (see above), similar to power plants with a capacity of more than 0.5 MW.

The National Development Requirements and Building Standards²⁶ stipulates that in all building zones or other zones, equipment for renewable energy (except wind power) may be installed, provided that their use does not restrict or require protection from use in accordance with the basic purpose of the zone, and unless otherwise provided for in the local building code or structural plan.

It is also important to note that electricity generating plants with a rated capacity of less than 0.5 MW (except wind power) may be located in certain areas regardless of the provisions of the local building code that define the intended use and the maximum permitted building density.

Further authorisation obligations depending on the characteristics of the activity the energy community pursues or plans to pursue:

²⁵ Hungarian Energy and Public Utility Regulatory Authority

²⁶ <https://nit.hu/jogszabaly/1997-253-20-22>

-
- ▶ environmental permit procedure;
 - ▶ water permits, if surface or groundwater bodies are concerned;
 - ▶ if agricultural land is affected, the permit of the land protection authority is required (exemptions for small power plants and agro-photovoltaic systems);
 - ▶ activities affecting a real property that is subject to archaeological heritage protection or monument protection;
 - ▶ townscape notification procedure or consultation provided by the national and the local townscape protection legislations.

Administrative costs of the establishment consist of the procedural fees in the court registry procedure, the authorisation proceedings (where necessary) and the MEKH registration fee.

As of 1 January 2024, the minister in charge for energy may designate facilitated areas to increase the built-in capacity of renewable power plants. A facilitated area may be designated in geographically defined locations considered the most favourable in terms of the geographical characteristics for the use of specific renewable energy sources, where

- the average annual global irradiance on the district exceeds 4,900 MJ/m² in the case of the installation or extension of solar power plants,
- the wind energy density at a height of 150 metres exceeds 500 W/m² in the case of wind farms are built or extended, or
- the wind farm already has a valid combined small power plant authorisation and a network connection contract.

The time limit to carry out the environmental and construction permit procedure for a weather-dependent renewable energy plant in an acceleration area may not exceed 50 days.

9.3.2 Contractual relations and liabilities of energy communities

9.3.2.1 Contracts of members of CEC/REC

Rights and obligations of members in an energy community as a legal person are determined in the Civil Code governing the main rules of cooperative and business associations. With regard to energy communities or other collective actions, e.g. jointly acting self-consumers or group of active customers, the civil law does not provide specific rules.

9.3.2.2 Contracts of CEC/RECs with other market participants

The national legislation does not stipulate specific rights or obligations for the contracts of energy communities. CECs or e-RECs may participate in the energy market and may enter into contractual relations as other participants via contracts already provided by the existing legislation.

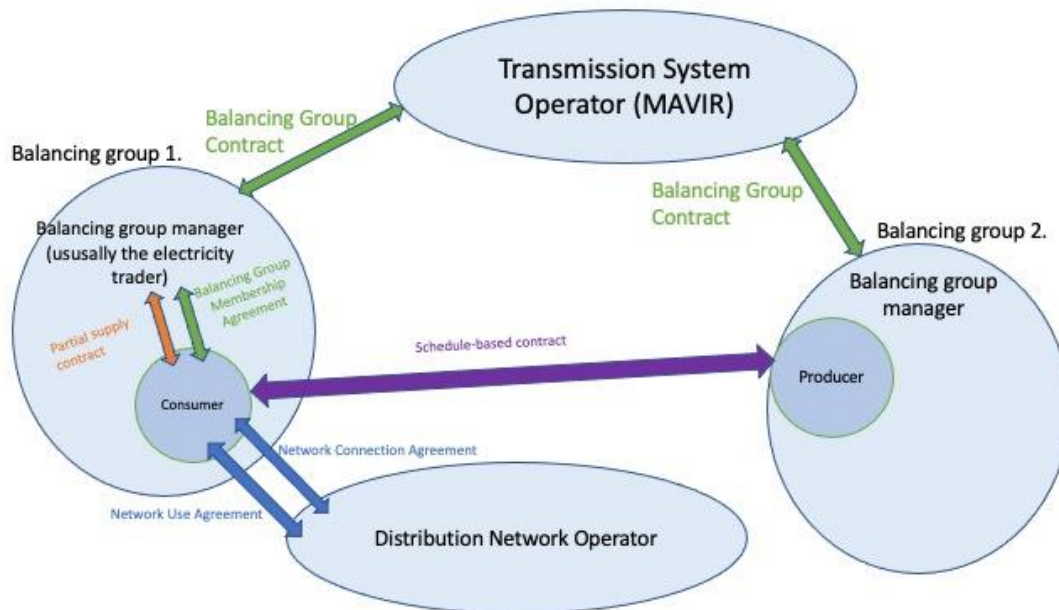


Figure 14: Contractual relations between market participants (source: Áramár Portál, <https://rnr.hu/?q=node/49>)

Network access contract: authorised operators make available the transmission and distribution networks they control to network users in exchange for the network access fee and enter into network connection and network use agreements with network users, in writing (Arts 35 and 58(1) VET).

The network connection contract and the network use contract are concluded between the network user and the network operator. The first document sets out the technical arrangements and conditions for connection to the network, the property boundaries, the details of the connection points, the metering data, and the power available at the point of consumption. The network use contract ensures the continuous supply of the purchased electricity and energy, the installation and commissioning of the metering equipment in accordance with the specifications, the continuous reading of the meter and the transmission of the data to the system operator.

Obligations of the network operator:

- ▶ to make available the networks they control to network users,
- ▶ to set out non-discriminatory conditions of access to transmission and distribution networks,
- ▶ to give priority to generating installations using technologies free of emissions of carbon dioxide or RES or waste or producing combined heat and power.

Obligation of network users is to pay network access fee.

Commercial relations between market participants are supply-based contracts, schedule-based contracts, balancing group contract and balancing group membership contracts.

A supply-based contract obliges the seller to settle the accounts of the buyer in the event of purchases or entries by the buyer other than those notified by the seller, even if they are not schedule-based contracts. The supply contract shall ensure that the seller shall provide the buyer with the power and electricity it wishes to use at any time, up to the limit of the capacity available to it. In this respect, the partial supply contract for a given settlement point allows the buyer to enter into schedule-based contracts for the provision of its supplies.

The schedule-based contract specifies the amount of electricity covered by the contract, broken down by metering period for the period specified in the contract. In a schedule-based contract, the seller or the buyer commits to supply or use the amount of electricity specified in the agreement.

Any market participant is entitled to perform the function of balancing group manager and to conclude a balancing group contract with the TSO. Producers of electricity for which aid is granted as a premium (METÁR) have to conclude a contract with the TSO as provided for in its standard service agreement.

Balancing group contract:

Responsibilities of the balancing group manager

- ▶ reporting of schedules: aggregation and transmission of consumption and production schedules to the TSO,
- ▶ settlement: settlement of balancing energy with the system operator, and allocation of costs to the balancing group members,
- ▶ obligation to take over electricity subject to purchasing obligation (KÁT).
- ▶ Responsibilities of the TSO in relation to the balancing group:
- ▶ receipt and processing of schedules: operation of the schedule manager,
- ▶ provision of balancing energy,
- ▶ quantitative allocation and settlement of balancing energy.

A market participant that does not form a balancing group has to join a balancing group by means of a balancing group membership contract with the balancing group manager. Each consumption point must belong to one balancing group. The contract is concluded between the consumer and the responsible balancing group. This contract ensures that the consumer in the balancing group can deviate from his previously submitted or fixed schedule and still receive the electricity he needs at any time, despite the deviations. Users eligible for universal services automatically gain membership in the balance group of the authorised provider of universal services with which they are engaged under contract, or of the authorised electricity supplier, and may not be compelled to enter into a balancing group membership agreement. Membership in the group is free of charge to customers eligible for universal services.

Producers of electricity subject to purchasing obligation are required to enter into a balancing group membership agreement and join the networked meter-balancing account created by the TSO for accounting concerning the electricity subject to purchasing obligation. This networked meter-balancing account is balanced by the transmission system operator (KÁT balance group).

New type of contract has been adopted by the transposition of the IEMD. The VET lays down the main rights and obligations in relation to aggregator contracts in its Article 66/D.

Customers may enter into an aggregation contract without the consent of the electricity supplier or balance responsible party with whom they have a contract. The aggregator notifies the electricity supplier with whom the customer has a contract, the customer's balance responsible party and the authorised network operator.

The aggregator may engage in the aggregation of market participants engaged with various balance groups at the same time subject to the conditions set out in the electricity supply codes.

The customer's electricity supplier contracted may not take any detrimental action against the customer based on the aggregation contract concluded between the customer and the aggregator.

Prior to the conclusion of the aggregation contract, the aggregator informs the customer, the producer and the owner or operator of the electricity storage facility concerning the contractual terms and conditions of the services offered.

The aggregator has financial responsibility for any imbalance caused in an alien balance group reduced or increased by the imbalance adjustment. The settlement methodology relating to the financial responsibility is contained in the electricity supply codes.

Connection to and use of private lines

As of 2024, the provisions on private lines have been significantly amended in the VET to facilitate decentralisation. A network user who is directly connected to the public utility system may install a private line inside his own service location, e.g., for supplying electricity for his own purposes or for supplying electricity to final customers within the service location.

An electricity producer or electricity storage facility may also be connected to a private line. In that case, the operator of the private line and the electricity producer or the operator of the electricity storage facility enter into an agreement laying down the conditions for connecting to the private line. The agreement contains the economic and technical conditions stipulated by the network operator.

The operator of the private line and the producer and/or the operator of the electricity storage facility must submit a request for network use to the network operator before the installation of the production equipment or electricity storage facility and the conclusion of their agreement. The network operator lays down the economic and technical conditions for connection to the public utility system through the private line.

The private line operator and the producer or operator of the electricity storage facility submit the network user request even if the injection capacity for the given connection point is not to be modified by the electricity produced by the production equipment connected to the private line or stored by the electricity storage facility.

If located on a property other than the service location, only a power plant or electricity storage facility installed on a property directly adjoining the place of the service location is allowed to connect to the private line. In that case, more than one service location and real property may not be interconnected with a power plant or electricity storage facility. The electricity produced by the power plant or injected from the electricity storage facility may also be used through a private line located within the service location where the power plant or the electricity storage facility is located.

The producer or electricity storage facility connected to the private line may sell electricity exclusively through the public utility system and to the authorized operator of the private line.

The operator of the private line is required to conclude a contract with the customers and users supplied through the private line, laying down the rights and obligations pertaining to the use of the private line.

The authorized operator of the private line operates and maintains the private line in due observation of safety requirements, environmental protection and the relevant technical specifications and delivers electricity to customers and users from the connection point through the private line.

The authorized operator of the private line must provide access to final customers, users and producers for non-discriminatory and reasonable charges, and shall make available their private lines to producers.

The authorized operator of the private line is allowed to pass on the charges payable for use of the electricity system under a network use agreement entered into with the authorized network operator, without adding any profit, to the users and final customers supplied through the private line.

The liability of authorized network operators to final customers and users supplied through a private line shall cover the transmission of electricity to the public utility system connection point and to metering the consumption of users connected to the private line.

A final customer who wishes to purchase electricity through a private line as a user enters into a network use agreement with the network operator covering the connection point of the private line and the public utility system, and enters into an agreement with the operator of the private line. The operator of the private line cooperates with the authorized network operator and the final customer and collaborates with the network

operator regarding the installation of metering equipment and establishing proper facilities for metering. The agreement between the final customer and the operator of the private line, for the resale of electricity and for use of the private line, terminates at the time the network use agreement between the authorized network operator and the final customer enters into effect.

9.3.2.3 Other contractual issues

With regard to contractual relations among energy communities or other collective actions with other persons/entities, no specific national requirements were identified.

Producer-consumers/active users acting together will initially face several administrative difficulties. An agreement is needed between the participants to regulate their internal and external legal relations, including representation.

Joint action can be based on several possible situations where the applicable legislation must be taken into account when reaching an agreement. In a condominium (which may also be a two-apartment building), where the consumers are the individual apartments or the condominium itself, the provisions of the Condominium Act apply concerning energy use of the common property. The requirements of the Housing Cooperatives Act also apply to a housing cooperative, which requires at least seven members. When several apartments, each with their own metering, are within the same building, but the building is not legally a condominium, the rules of joint property must be taken into account.

In the case of jointly owned property, unanimous decision-making by the owners (i.e. the express consent of all owners) is required for investments in the property with expenses exceeding the scope of standard operating procedures. This unanimity requirement may cause difficulties in the case of RES investments.

The appointment of a representative is also essential for joint action. In the case of condominiums, representation is regulated by law, as it is for housing associations. However, if not all the owners of the building are involved in the joint action of producer-consumers, it is possible to appoint a representative who can act on the basis of a power of attorney instead of the legally appointed representative.

In the case of jointly owned property, these conditions can be laid down in a separate agreement. In the case of condominiums or housing cooperatives, the articles of association or the rules of organisation and operation can contain the relevant rules. In this context, setting up clear guidelines, model documents and cost calculations for the general public would also facilitate the widespread adoption of the producer-consumer/ jointly acting producer-consumer model. As the main issues are not well developed yet and may pose barriers, those issues should be covered by the guidelines. The guidelines should cover possible forms of cooperation, notification/authorisation requirements, rights and obligations of members, rules of mutual accounting and clearing, rules of representation, and the essential elements of agreements with third parties (grant, sale or exchange agreements, leases, contracts of use, management contracts and aggregation contracts).

9.4 Support Schemes

9.4.1 From feed-in-tariff to market premium support scheme

The mandatory feed-in tariff (KÁT) scheme was open until the end of 2016, and the Renewable Support Scheme (METÁR) was launched in 2017. Under the KÁT system, the MAVIR takes the renewable electricity produced by generators over at a predetermined price for 20-25 years. The METÁR scheme is similar to market-based

generation, the producers have to sell the energy produced themselves, unlike under the KÁT system, and MAVIR no longer takes over the total amount of energy produced at a predetermined fixed price.

The METÁR system is built on three pillars based on the plant's installed capacity: a feed-in tariff (unchanged compared to the previous KÁT system; 50 kW-500 kW), a 'green premium' granted without tendering (0.5 MW-1 MW) and a 'green premium' granted through tendering procedures (>1 MW). Furthermore, a so-called 'brown premium' has been introduced for solid biomass and biogas plants; it serves as a technology-specific successor to the feed-in tariff. In the case of smaller power plants of less than 0.5 MW capacity (excluding wind energy) and demonstration projects, the electricity produced shall be purchased by MAVIR, the TSO, and sold by the TSO on the electricity wholesale market (HUPX). In case of power plants of medium capacity (between 0.5 MW and 1 MW), an administrative premium, at a level similar to the KÁT, will be paid to producers without any competitive bidding procedure (no tenders). As regards larger power plants (over 1 MW) and wind farms, premium support shall be granted only via competitive tendering procedures (except for demonstration projects).

Under METÁR, generators bear the costs of balancing needs due to deviations from the schedule, which is also an additional cost, and its magnitude is uncertain. Based on MAVIR calculations, the average unit cost of balancing energy for solar generation in 2019-2020 is 3 Ft/kWh.²⁷ High grid connection costs may compound the costs. According to the MNB's analysis, the scarcity of available grid capacity in Hungary may increase the total project cost, which will increase the need for investment and thus the need for financing.

In the third period of the METÁR, offers were submitted from July 1 to 30 2021, and majority thereof were for solar power. The weighted average offer price was HUF 18.41 per kWh. At the previous METÁR tender, in 2020, the average weighted offer price was HUF 20.66 per kWh. The two categories in the tender were (1) plants with capacity under 1MW with distributed capacity up to 50GWh a year, and (2) plants with capacity up to 20MW with distributed capacity up to 250GWh per year.

The trends of market prices and the lower amount of subsidy that can be applied for (max. 26 HUF/kWh) result in lower achievable revenues and extend the investment's payback period. Long-term power purchase contracts reduce the risk of market price volatility, but their duration in Hungary is less than ten years and does not cover the duration of bank loans for the construction.

This is combined with the problem of uncertainty of the balancing costs. In its decision, MEKH has also indicated that market participants have been subject to balancing energy charges of an unexpected magnitude based on market developments in the first months of the year.

9.4.2 Network access fee discount

With respect to grid connection, from a technical point of view, RES projects have to meet the same technical and administrative requirements as conventional generators. The costs to connect renewable energy plants to the grid and the grid's expansion are borne either by the plant operator or by the grid operator, depending on certain criteria. MEKH Decree 10/2016 provides for reduced distribution or network access fees for RES projects which meet the relevant legal criteria in Art. 20(4) of that decree.

²⁷ <https://mnb.hu/letoltes/20210121-hazai-megujulo-energiatermeles-finanszirozasa.pdf>

As a general rule, the tariff to be paid by the network user is based on the difference in the amount of electricity between two metering, read at least monthly by the distributor.

As of 1 January 2024, the distributor must correct the quantity of electricity - on which the tariffs of each of the parties concerned are based - with the amount of electricity produced and shared by jointly acting self-consumers according to 15-minute metering intervals. The correction is applied in accordance with the distribution rules, in the manner laid down in the agreement between the parties concerned. The corrected quantity for a given metering interval might not be negative.

9.4.3 Other state subsidy programmes and support schemes

Support for the use of renewable energy sources for generating electricity or heat are provided by subsidy programmes under the Environmental and Energy Efficiency Operative Programme (EEEOP) ('Környezet és Energiahatékonysági Operatív Program' – KEHOP) and other operative programmes financed through European Union funds in conjunction with funds provided by the Hungarian government. Furthermore, favourable loans are granted within the Economic Development Innovation Operative Programme (EDIOP) ('Gazdaságfejlesztési és Innovációs Operatív Program' - GINOP).

Two calls for applications were published in 2020 and 2021 to support establishment of pilot energy communities and their initial investments to produce, store and share renewable power from renewable energy sources, mainly PV plants. These support schemes are financed from the income realised in the EU ETS and from the Modernisation Fund.

9.4.4 Support of HMKEs

The energy from household-size generating stations with a connection capacity below 50kVA must be taken by the electricity trader servicing the relevant connection point and will principally be set off against the electricity consumed by the household end users. HMKEs are currently provided with favourable accounting through the annual balance settlement. The gross accounting system is gradually replacing this accounting method from 31 December 2023. The essence of gross accounting is that the electricity fed into the grid and the electricity purchased from the grid will have to be accounted for separately and will most likely be charged at different prices, which is likely to reduce the payback on the solar HMKE. The details of the gross accounting laid down by the VET Vhr.

9.4.5 Other financial factors affecting RES in Hungary

► *The cut of household utility costs ("rezsicsökkentés")*

In 2013 Hungary started to cut significantly household energy prices, costs of public utilities and raise energy prices for industrial users. In the framework of this initiative, the electricity prices for household consumers have been reduced with 10% as of January 2013, while a further reduction of 11.1% has been applied as of November 2013 and an additional 5.7% was introduced as of September 2014. The price of natural gas, electricity and heating for households dropped to levels under their actual cost, which discourages investments in energy efficiency and renewable energy.

► *RHD*

The use of the electricity system is subject to transmission fee, distribution fee and public lighting distribution fee (collectively as "network access fees" or "RHD") payable by the network users. Components of the various

network access fees, the principles, and the regulatory framework for determining and regulating network access fees is annually determined by the MEKH by 15 May of the year preceding the upcoming price regulation cycle. The RHD must be publicly available and proportionate, and applied objectively in a non-discriminatory manner.

The RHD shall be cost-reflective of cost-savings in networks achieved from demand-side and demand-response measures and distributed generation and other energy efficiency measures, including savings from lowering the cost of transmission, distribution or of network investment and a more optimal operation of the network.

► *Value-added Tax (VAT)*

Generally, the rate of VAT is 27% in Hungary, with a few exceptions. In relation to RES, district heating services, including those based on renewable energy sources under the VET, are taxed at 5%.

9.5 Conclusions for Hungary

Before the transposition of the EU Clean Energy Package, the possibility to produce and consume renewable electricity by customers has already been provided in the form of household-sized power plants (HMKE) in Hungary. An HMKE is a micropower plant connected to a low voltage system with an interconnection capacity of less than 50 kVA at any given connection point. The establishment and operation of this type of small power plant are not subject to authorization. Still, the DSO must agree upon and approve the intention to install and operate an HMKE.

The national legislation transposing IEMD/CEC and RED II/REC entered into force on 1 January and 1 July 2021. The Hungarian definition of CEC is in line with the EU law, while the e-REC is defined as a sub-type of CEC that generates/consumes/sells electricity generated from a renewable source and which entity is directed by a member or members whose connection points are in the same high or medium-voltage transformer station zone as the connection points of the electricity storage facility and power plant owned by the renewable energy community. In other respect, renewable energy communities are subject to the provisions on energy communities. In 2024, several changes entered into force in relation to the electricity market and another type of RECs has been defined for heating and cooling (h-REC).

Still, the domestic concept of a REC is not entirely in line with EU requirements. The RED II's renewable energy community category covers electricity and all energy types. At the same time, the Hungarian legislation defines the e-REC as a sub-type of CEC which does not exclude large companies from its membership.

The first procedural step to establish a CEC or RECs is registering the legal person by the court of registry under civil law. The legal forms for CECs or e-RECs are the cooperative society or non-profit business associations governed by the provisions of the Civil Code. H-RECs can choose any form of legal persons under the civil law. The Civil Code has not been modified, and it can be stated that specific rules in Hungarian company law can hardly reconcile with the concept of CECs/RECs. After registering at the court of registry, the second establishment stage is registration at the MEKH for CECs and e-RECs. The registration or authorisation rules for h-RECs have not been adopted yet.

The term of CEC and REC have been transposed into national law, however, relevant gaps in the legislation concerning their establishment and operation should be filled. For instance, electricity sharing as a possible activity of CECs/RECs is not regulated in sufficient detail, although significant steps have been taken by the legislation with the amendments that entered during the last 2 years.

Beyond the legal definition and provisions, the primary challenge is to bring real benefits to energy and renewable energy communities and build a supportive framework. At present, there is no advantage for a community energy initiative to register as an energy community and, therefore, no incentive. In addition to subsidies, specific financial measures need to be rethought and dismantled to promote community energy more effectively.

10 | Conclusions

In the six countries participating in SHAREs, the transposition of RED II and IEMD and the preceding legal and supportive environment for community energy initiatives show a somewhat different picture.

Before the transposition of the RED II and IEMD, Austria already had effective regulation on collective generation in place. The "collective generation plant" – introduced in 2017 in Austria – corresponds to the German "tenant electricity model". In 2017, special rules for citizens' energy companies were implemented to ensure the diversity of actors in the energy transition in Germany.

In Austria first energy communities have been in operation since the end of 2021. The number of energy communities in Austria has risen almost exponentially since July 2021, reaching 1,171 renewable energy communities and 147 citizen energy communities in 2024. Furthermore, membership of more than one energy community is possible too. Participation with a consumption or generation facility in more than one joint generation facility, CEC or REC is permitted from 1 January 2024. The market processes required for this went live on 8 April 2024. Multiple participation has been possible in practice since this date.

By transposing the terms of energy communities provided by the mentioned EU Directives, in Austria, Croatia, Bulgaria and Hungary, two types of new energy market actors, RECs (in Austria on a local or on a regional level) and CECs, can be founded since 2021.

Energy communities under Austrian and Croatian law may be organized in any form of legal entity. In Hungary, the possible legal forms for energy communities are cooperative society, non-profit business associations (i.e., general partnership, limited partnership, private limited-liability company, public limited company, private limited company), which entities can be established under the provisions of the company law.

In Bulgaria, a local municipality established the first energy community in the spring of 2024. However, numerous bottlenecks continue to hinder the broader replicability of citizen-led initiatives in the energy sector.

Energy communities, and their establishment, in Croatia are still in the early stage of development. The first and only citizen energy community was formally registered in April 2024, with only 4 kW installed PV power and the main aim of testing real-time energy sharing software and hardware.

In Croatia, CECs operate based on the law governing the financial operations and accounting of non-profit organizations, which creates another significant restriction concerning the definition of CEC from the directive that allows CEC to be of any legal form. Likewise, in Hungary, only one legal form (cooperative) available for CEC/REC is exempted from the criteria of being non-profit.

CECs can be established only at the level of the local self-government unit, which significantly limits the possibility of uniting citizens to benefit the community in Croatia. In Austria or Hungary, such geographical limitation for CECs does not exist, CECs can be formed and operated nation-wide; the locations of the generation and consumption units of their members can be in any grid areas within national borders.

Energy communities may not operate the electricity distribution network in Hungary and in Croatia. In Austria and Hungary, the formal establishment of an energy community takes place depending on the chosen corporate form. The establishment of a legal entity is also a prerequisite for registering the energy community with the grid operator (in Austria) or the competent authority (in Hungary and Croatia).

In Austria, RECs can only operate RES-E plants, while CECs do not have such a limitation. Contrary to CECs where only electricity-related services for their members are allowed, RECs can engage in businesses related to RES-H and green gas too. In both EC cases, existing generation plants can become electricity suppliers for its members.

REC is a narrower term than the CEC in Croatia, or in Hungary, REC has been defined as a sub-type of CEC and the scope of its activity is limited to electricity.

The transposition of RED II and IEMD is not carried out in a few countries yet, namely in **Germany and in **Georgia**;**

The legal framework is underdeveloped regarding energy communities and collective actions of prosumers in Georgia; legal provisions supporting energy communities are scattered across different legislative acts. Although Georgian legislation allows the establishment of collective actions, the respective legal and regulatory framework are not solid and do not incentivize consumers.

The support schemes for community energy actions and/or energy communities also vary in the countries involved in SHAREs. For instance, in Austria, newly built renewable energy generation plants can benefit from one-off investment grants or new market premiums depending on size and technology. The provisions on subsidies through investment grants are currently in force. However, the ordinance on the details of investment grants required for implementation and further information are not yet available.

In Hungary, green premium (with or without tendering) is available, specific network access fee discounts and subsidy programs are provided for energy generated from RE, but not specifically for energy communities. Although definitions for energy communities were adopted recently, there are no support schemes, guidance, information/technical support, mentoring schemes and financial support implemented related to the establishment and operation of energy communities in Croatia.

In Georgia, there are no special support schemes available for community energy, the only support available for collective action of self-consumers is net metering. Any natural or legal person, house-owner, partnership, urban or rural resident can use the net metering mechanism as it is not considered entrepreneurial activity.

Even if the term of CEC and REC have been transposed into Croatian and Hungarian law, relevant gaps in the legislation concerning their establishment, operation and support should be filled. Laws and regulations governing CECs and RECs in detail are still in the early stage of adoption or missing. There is also a lack of information and awareness on the benefits of forming such communities.

Furthermore, electricity sharing as a possible activity of CECs/RECs is not regulated in sufficient detail in Hungary, and this problem also occurs in Germany.

It can be stated that the introduction of the definition of energy communities (both CEC and REC) is essential for the development and implementation of community energy projects; the first key prerequisite for taking up CECs/RECs is to be set up by transposing the definitions of RED II and IMED into national legislation. However, based on the transposed legislations of Austria, Croatia, Bulgaria and Hungary, many barriers still remain, as the transposition was in some segments restricting the options for potential members/investors to form energy communities.

While the necessary legal framework is in place to establish and operate energy communities in Austria, there is still the need for additional regulations since the transposed legislation only tackle the basics of the energy communities (e.g., definition, membership, functions) in Croatia, Bulgaria or Hungary. In the latter countries, there is no advantage for a community energy initiative to register as an energy community and, therefore, no incentive. In addition to subsidies, specific financial measures need to be rethought and dismantled to promote community energy more effectively.

The lack of clear legal and regulatory framework is one of the main barriers which hinders large scale development of energy communities in the partner countries. However, it is also an opportunity to advocate a better and more supporting framework for energy communities.

11 | Abbreviations

CEC	<i>citizen energy community</i>
CEP	<i>Clean Energy Package</i>
EU	<i>European Union</i>
MSs	<i>Member States</i>
REC	<i>renewable energy community</i>
RED II	<i>Renewable Energy Directive</i>

Figure 1: Overview of SHAREs partner countries (Source: AEA)	9
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Tables

Table 1: Summary of implementation assessment and status of measures related to energy communities in Austria	11
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