Practical Guidelines for Enabling the Regulatory Framework on Energy Communities

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Practical guidelines for enabling the regulatory framework (policies and supporting mechanisms) to facilitate the deployments of Energy Communities at national and local level.

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Executive summary

This report informs and supports emerging energy communities (ECs), local authorities and stakeholders who are interested in understanding legal and regulatory components as well as obstacles hindering EC initiatives in the three focus countries Bulgaria, Denmark and Spain. For this purpose, authors gathered and systematized information through a country profile form, distributed to LIFE-BECKON partners in the respective focus countries (see Annex I), and screened the latest updated information available at relevant European Union (EU) and national programmes and initiatives. This report is structured in the following sections:

- **Introduction and Objectives** informs about the scope of the project and the contribution of this report to the project's activities.
- **Comprehensive analysis of the contemporary regulatory and policy frameworks for ECs** in the EU assesses the implications for the implementation of ECs (obstacles, opportunities, gaps and corresponding needs) in the three focus countries.
- **Practical guidelines to enable the regulatory framework** (policies and supporting mechanisms) at the national and regional or local level to facilitate the deployments of energy communities.
- **Assessment of the current state of transposition of relevant provisions for deployment of ECs contained in the Clean Energy Package** - the revised Renewable Energy Directive (RED II), the Internal Electricity Market Directive (IEMD), and the Energy Efficiency Directive (EED).
- Specific **electricity market design**, its rules, its key actors and its barriers for ECs in the focus countries.
- **Updated and expanded information and data from the focus countries that support the creation of a regulatory and policy framework** at the national and regional level.
- **Guidelines for implementation in the national regulation** of the participating countries.

The results of this investigation found that the transposition of the key EU legislative framework remains very fragmentics across the Member States, resulting in distinct starting conditions for ECs or initiators of such collective energy actions. Even where key legislations have found their way into national law, major challenges were identified associated with the complex permitting procedures and uncertainties in national law concerning the most suitable legal entities for ECs. In addition, it was analyzed that Member States will need to further strengthen the enabling framework to build capacities in municipalities and public authorities to support the deployment of ECs. The results of the analysis have been formulated as recommendations to improve the regulatory frameworks in Spain, Bulgaria and Denmark as well as underlying EU legislative framework.

The table below summarizes the main legal and regulatory components and obstacles hindering EC initiatives in Spain, Bulgaria and Denmark.

Table 1. Summary of legal and regulatory components and obstacles for EC initiatives in Spain, Bulgaria and Denmark

	SPAIN	BULGARIA	DENMARK
REDII transposition	- REDII implemented on a minimum level.	- REDII still not fully transposed.	- REDII implemented on a minimum level.
IEMD transposition	- IEMD partially transposed in the national legislation.	- IEMD partially transposed in the Bulgarian Energy Act.	- IEMD obligatory parts are implemented.
EED transposition	- EED completely transposed.	- EED completely transposed.	- EED completely transposed.
Definition of EC	- No explicit definition of CECs. - Definition of REC fully transposed into national law. - No definition of a legal entity of RECs provided in national law.	- No legal definition of REC and CEC. - Proposed REC definition in line with EU definition.	- Definition of REC follows the EU definition of REDII. - Definition of CEC according to IEMD.
Legal and regulatory frameworks for ECs in place	- Definition of RECs. - Rules on self-consumption including provisions on (collective) self-consumption.	- National laws on ECs are still not in place. - ECs are promoted through the National Energy & Climate Plan. - Some sectoral laws have a direct effect on establishment and operation of ECs.	- Definitions of RECs and CECs. - Guidelines and procedures for the establishment and operation of RECs and CECs. - Rules and procedures for the supply of electricity.
Capacity building frameworks	- Partly in place through Community Transformation Offices, but overall lack of support to build sufficient capacities in local authorities.	- Through EU projects. - Obligations expected for municipalities to provide information and consultancy for the establishment of ECs.	- Only for financial support (cf. “individual grants” below).
Subsidies / incentives offered to actors setting up an EC	- National funding and support programmes implemented by the national energy agency but barriers exist to access funding.	- No subsidies / incentives available. - Financial support schemes for solar roof installations.	- Individual grants for ECs (approx. 540k €) annually from 2022 to 2025 - Calculating local tariffs
Biggest barriers for setting up and running an EC from a legal / regulatory perspective	- Complex and lengthy bureaucratic procedures. - Lack of a defined legal entity for ECs. - Lack of standardization between provisions for self-consumption and ECs.	- Lack of transposition of EU directives and legal definition. - Regulation is not customer-centric. - Missing national/regional competent authorities on EC. - Lack of info on EC, OSSs, platforms. - Lack of experience in EC, lack of self-organization.	- Complex and expensive process to set up ECs. - Unclear regulation, e. g. regarding cooperation between grid companies and ECs. - Lack of specification of proximity for RECs. - Lack of method for calculating a tariff model for transportation of electricity inside the EC.
Barriers for establishing and running ECs from electricity market perspective	- Lack of information, experience and expertises on ECs. - Municipalities are not ready to consult and advise. - Limited opportunities to trade energy.	- Lack of information, experience and expertises on ECs. - Municipalities are not ready to consult and advise. - Scarce attitude for community self-organization. - Smart meters are not available. - Lack of technical information shared by the electricity distribution companies. - Lack of favorable conditions to access financing and enter the free market.	- Difficulty for ECs to make benefits in the electricity sector. - Reluctance of DSOs to mix new EC business with their monopoly business. - Lack of specification of and permission to offer service of metering and settlement to EC by DSOs within their monopoly business area. - Lack of a specific model and stimulus for calculating a local tariff for EC by DSOs.

1. Introduction to regulatory & legal aspects and objectives

LIFE-BECKON delivers support mechanisms for public authorities, developers and local action groups to set-up, maintain and spread ECs across Europe. One of these mechanisms is the creation of a One-Stop-Shop (OSS) platform for relevant stakeholders to support them in the process. This platform will be developed under LIFE-BECKON WP3 and will include several functionalities and hubs for knowledge, training and matchmaking to shape technical assistance offices' services to blend and complement them with the digital OSS services. This report develops a comprehensive analysis of the contemporary regulatory and policy frameworks for EC in the EU - which also includes subsidies, incentives and support mechanisms - with regard to the three focus countries to assess their implications for the implementation of the pilot projects (obstacles, opportunities, gaps and corresponding needs) and to define practical guidelines to enable the regulatory framework at the national and regional or local level to facilitate the deployments of ECs. The aim of this report is to facilitate the deployment of ECs at national and European level. Therefore it contains:

- Comprehensive analysis of the contemporary **regulatory and policy frameworks for ECs in the EU** with regard to the three focus countries in order to assess their implications for the implementation of ECs (obstacles, opportunities, gaps and corresponding needs).
- Practical guidelines to enable the regulatory framework (policies and supporting mechanisms) at the **national and regional or local level** to facilitate the deployment of ECs.
- Assessment of the current **state of transposition** of relevant provisions for deployment of Energy Communities contained in the Clean Energy Package - the revised Renewable Energy Directive, the Internal Electricity Market Directive, and the Energy Efficiency Directive.
- Specific **electricity market design**, its rules, its key actors and its barriers for ECs in the pilot countries.
- Updated and expanded **information and data from the pilot countries** that support the creation of a regulatory and policy framework at the national and regional level.
- **Guidelines for implementation in the national regulatio**n of the participating countries.

The technical assistance cookbook is primarily addressed to public authorities supporting potential ECs (e.g. promoters, developers) in their areas looking for support, especially in Spain, Denmark and Bulgaria. It gives them a practical overview of the most important existing national regulation and of possible regulatory and policy frameworks which should be transposed into national legislation in the near future - either derived from existing EU legislation or from best practices which the authors identified in this analysis. Overall, this report helps to understand which are the **most effective policies and regulations** to facilitate the deployment of ECs in the EU. It therefore gives **recommendations for changes in the national regulation** of the focus countries as well as for potential future regulation of ECs on EU level. Finally, this report provides information for:

- The technical assistance cookbook (WP1)
- The knowledge hub of the OSS (WP3)
- Adapting cookbook strategies to pilots' areas and increasing effectiveness during demonstration stage (WP4)
- Recommendations on policy and regulation (WP5)

2. Overview of EU regulatory framework for energy communities

This chapter provides an overview of the EU's regulatory framework on energy communities (ECs). Firstly, this report focuses on the distinction between the different types of ECs that are mentioned in the directives. Secondly, it delves into the three main legislative acts that concern them. Namely, the **Renewable Energy Directive II, the Internal Electricity Market Directive (IEMD) and the Energy Efficiency Directive** are briefly introduced and articles relevant to ECs are explained. All three directives belong to a larger legislative package, the Clean Energy for all Europeans package (CEP), which was adopted in 2019 by the EU, with the goal to move quicker from fossil fuels to cleaner energy.[1] In the following chapters, the transposition of the directives into national law in Spain, Denmark and Bulgaria is analyzed.

2.1 Methodology & Definitions

The information displayed and analyzed in this report was mainly collected from local partners in the three focus countries, namely Spain, Denmark and Bulgaria. A questionnaire (see Annex I) was set up to gather local insights as well as the latest changes in legislation concerning ECs. Based on this knowledge, together with the latest updated information available on relevant EU and national programmes and initiatives on ECs, the country assessment took place and recommendations were identified.

2.1.1 Citizens Energy Community vs. Renewable Energy Community

There are two types of ECs that are mentioned in the European legislative framework of the CEP: **Renewable Energy Communities (REC)** and **Citizen Energy Communities (CEC)**. The definitions of both ECs are similar, but not totally identical. RECs are mentioned in the Recast of the Renewable Energy Directive, while CECs are contained in the IEMD. Both definitions are laid out in the respective legislation below. With regard to their main differences, it is important to acknowledge the differing geographical scope of the ECs, as **RECs' participants must be located in the vicinity of the projects which is not the case for CECs**. Furthermore, RECs restrict the membership of participants to natural persons, local authorities and micro, small and medium-sized enterprises (MSME) whose membership is not their primary economic activity. In **CECs any actor can participate**, even though large stakeholders whose primary activity is related to energy cannot make decisions. Therefore, control is also different, that medium-sized enterprises are not able to exercise control in CECs, while in RECs they may, if located in the proximity of the installation.[2] In this report the term 'Energy Communities' is used throughout, only referring to a specific type of EC when there is a difference made in legislation and the regulatory framework.

[1] https://energy.ec.europa.eu/topics/energy-strategy/clean-energy-all-europeans-package_en
[2] A detailed overview of the similarities and differences between EC, REC and CEC you also find here: https://rural-energy-community-hub.ec.europa.eu/energy-communities/what-energy-community_en

Figure 1. Shared core between Citizen Energy Communities (CECs) & Renewable Energy Communities (RECs). Source: EC, 2023

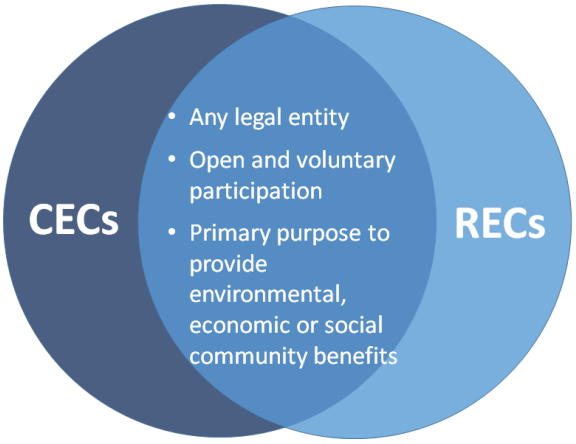
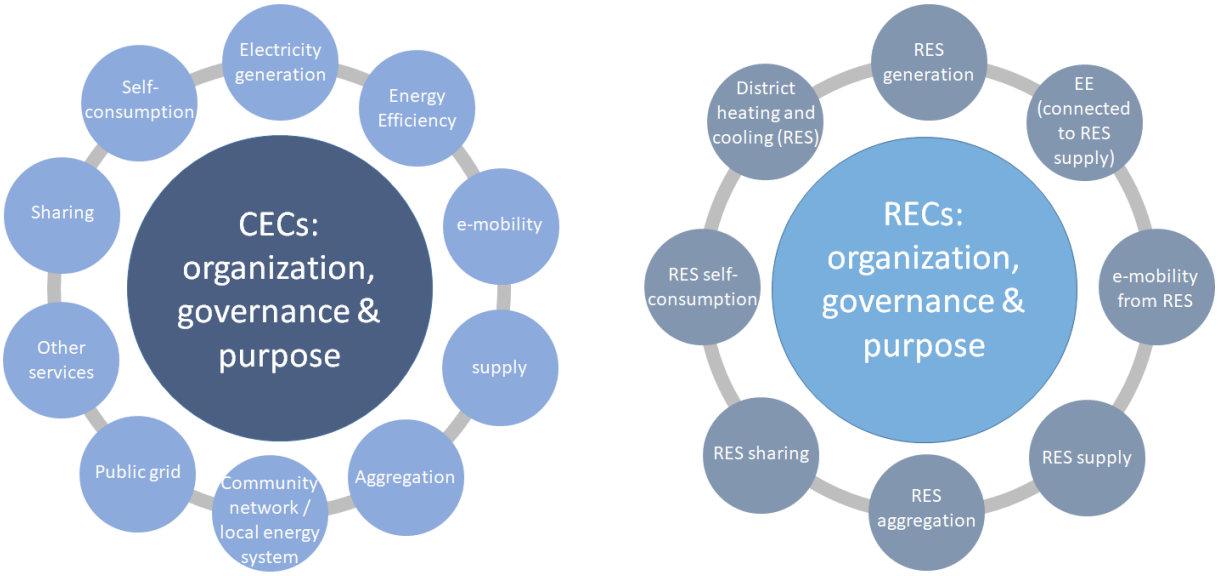


Figure 2. Comparing activities of Citizen Energy Communities & Renewable Energy Communities. Source: RESCoop.eu, 2023[3]



2.2 Renewable Energy Directive (RED II)

The recast of the Renewable Energy Directive[4] 2018/2001 (RED II) represents the legal framework for the development of renewable energy across all sectors of the EU economy to meet 2030 and 2050

[3]https://www.rescoop.eu/uploads/rescoop/downloads/QA-What-are-citizens-energy-communities-renewable-energy-communities-in-the-CEP.pdf

[4] The ambition and measures in the directive have been reviewed several times in order to deliver the urgent emission cuts (at least 55% by 2030) that are required to achieve the EU's increased climate ambitions. In July 2021, the Commission proposed a revision of the directive (COM/2021/557 final) with an increased 40% target as part of the package to deliver on the European Green Deal. The proposed revision of the directive is now being considered by the Council and the European Parliament, along with the rest of the legislation aiming to deliver on the European Green Deal. The adoption is expected by the first quarter 2023.
https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:52021PC0557

EU climate objectives. Among several RE specific topics, it includes new provisions and rules to ensure the rights to enable citizens, consumers and businesses to play an active role in the development of renewables by enabling renewable energy communities and self-consumption of renewable energy. In RED II, RECs are understood as **'grassroots' innovations initiated by citizens**, small and medium enterprises (SMEs) or local governments. RECs should be autonomous and controlled by shareholders or members close to the renewable energy projects they promote. Their primary purpose is to provide environmental, economic or social benefits for their members and the localities where they operate, rather than financial profit. Article 2 'Definitions', paragraph 16 of the directive defines the concept of RECs in the following way:
'renewable energy community' as a legal entity:

(a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity;
(b) the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities;
(c) 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.[5]

This definition of REC is similar to the definition of CEC in IEMD, yet differs in several ways and details (cf. 2.3, p.11). Furthermore, the article 22 'Renewable energy communities' establishes that Member States should identify specific policies and measures which give effect to new rights of RECs, and put in place an enabling national framework for their development. The **Directive establishes that Member States** shall:

1. Ensure that final customers, in particular household customers, are entitled to participate in a REC while maintaining their rights or obligations as final customers, and without being subject to unjustified or discriminatory conditions or procedures that would prevent their participation in a REC, provided that for private undertakings, their participation does not constitute their primary commercial or professional activity.
2. Ensure that RECs are entitled to:
    - produce, consume, store and sell renewable energy, including through renewables power purchase agreements;
    - share, within the REC, renewable energy that is produced by the production units owned by that REC;
    - access all suitable energy markets both directly or through aggregation in a non-discriminatory manner.
3. Provide an enabling framework to promote and facilitate the development of RECs, ensuring that:
    - unjustified regulatory and administrative barriers to RECs are removed;
    - RECs that supply energy or provide aggregation or other commercial energy services are subject to the provisions relevant for such activities;

[5] https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:52021PC0557

- the relevant distribution system operator (DSO) cooperates with RECs to facilitate energy transfers within RECs;
- RECs are subject to fair, proportionate and transparent procedures, including registration and licensing procedures, levies and taxes, ensuring that they fairly contribute to the overall cost sharing of the system in line with a transparent cost-benefit analysis of distributed energy sources developed by the national competent authorities;
- RECs are not subject to discriminatory treatment with regard to their activities, rights and obligations as final customers, producers, suppliers, DSOs, or as other market participants;
- the participation in the RECs is accessible to all consumers, including those in low-income or vulnerable households;
- tools to facilitate access to finance and information are available;
- regulatory and capacity-building support is provided to public authorities in enabling and setting up RECs, and in helping authorities to participate directly;
- rules to secure the equal and non-discriminatory treatment of consumers that participate in the REC are in place.

Furthermore, the RED II addresses grid connection for new producers of gas from renewable sources, e. g. from biomass: "The costs of connecting new producers of gas from renewable sources to the gas grids should be based on objective, transparent and non-discriminatory criteria and due consideration should be taken of the benefit that embedded local producers of gas from renewable sources bring to the gas grids."[6]

2.3 Internal Electricity Market Directive (IEMD)

The Internal Electricity Market Directive[7] 2019/944/EU (IEMD) also mentions and defines the concept of Energy Communities with a particular definition and purpose. In particular, CECs are defined and provisions are laid down. At EU level, the IEMD establishes common rules for the internal electricity market, aiming to create an integrated, competitive, consumer-centered and transparent electricity market. This includes rules for generation, distribution and storage of electricity as well as ensuring that rights of consumers are protected. Provisions for the protection of small and vulnerable consumers are specifically mentioned. In 2019, **the concept of Energy Communities was introduced in an attempt to include citizens, local authorities and SMEs** more actively in the energy transition and to provide a level-playing field for them on energy markets. Article 2 'Definitions', paragraph 11 of the directive defines the concept of CECs in the following way:

"'citizen energy community' means a legal entity that:

(a) is based on voluntary and open participation and is effectively controlled by members or shareholders that are natural persons, local authorities, including municipalities, or small enterprises;

[6] 2018 DIRECTIVE (EU) 2018/2002 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 amending Directive 2012/27/EU on energy efficiency (21.12.2018), p. 15

[7] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32019L0944

(b) has for its primary purpose to provide environmental, economic or social community benefits to its members or shareholders or to the local areas where it operates rather than to generate financial profits; and

(c) 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."[8]

This definition of CEC is quite similar to the definition of REC in RED II, in particular paragraph b) whereas c) is not mentioned in RED II. However, it **differs in terms of "proximity"**: RECs are effectively controlled by shareholders or members located in the proximity of the renewable energy projects which are owned and developed by that legal entity. Furthermore, it differs in the fact that RECs have a restricted membership, excluding large-scale enterprises, for instance.
Furthermore, Article 16 details the provisions applicable to CECs, and establishes that Member States shall provide an enabling regulatory framework for such ECs to ensure the rights and obligations of its members. The article also mentions the right to electricity sharing within a CEC. In addition to setting up an enabling framework, Member States and their regulatory authorities have the duty to monitor the "removal of unjustified obstacles to and restrictions on the development of consumption of self-generated electricity and citizen energy communities."[9]
At the time of writing, a reform of the EU's Electricity Market Design is underway as part of the Commission's 2023 work programme[10] with the aim to counteract the pressure of increasing electricity prices for final consumers, as a direct consequence of the energy crisis. The reform seeks to improve resilience to price volatility and to secure social well-being of consumers, while also protecting the competitiveness of businesses and industry through affordable electricity. Addressing the shortcomings the market design will likely result in amendments to the IEMD. This opens the opportunity to also review the provisions made for ECs in the directive.

2.4 Energy Efficiency Directive (EED)

The main purpose of the Directive (EU) 2018/2002[11] is to amend and improve the Directive 2012/27/EU[12] on energy efficiency, which established a framework for promoting energy efficiency in the EU. The new directive aims to accelerate the EU's transition to a low-carbon economy by increasing energy efficiency and reducing greenhouse gas emissions. The Directive (EU) 2018/2002 includes the following:

- **Energy efficiency targets**: The directive sets a binding EU target for energy efficiency of at least 32.5% by 2030 with PRIMES 2007 baseline; in 2023 this target was increased to 37.9% by 2030.[13]
- **Energy efficiency obligation schemes**: It requires member states to implement energy efficiency obligation schemes to encourage energy efficiency improvements, including measures such as energy audits and energy management systems.

[8] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0944&from=EN
[9] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0944&from=EN, p. L 158/182
[10] https://commission.europa.eu/strategy-documents/commission-work-programme_en#ref-2023-commission-work-programme
[11] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2002
[12] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012L0027
[13] 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 (recast); see also: Coalition for energy savings: Policy briefing: Revised EED: New rules, more savings, higher benefits, p.2 https://energycoalition.eu/wp-content/uploads/2021/03/Revised-EED-new-rules-more-savings-higher-benefits.pdf

- **Energy performance of buildings**: It shall strengthen the energy performance of buildings by requiring member states to establish long-term renovation strategies and improve the energy performance of public buildings.
- **Energy efficiency in industry**: It encourages the implementation of energy management systems and energy audits in industrial facilities, and the development of best practices and benchmarks for energy efficiency.
- **Energy efficiency financing**: It promotes access to financing for energy efficiency improvements.
- **Reporting and monitoring**: It obliges member states to report on their progress towards achieving energy efficiency targets and to monitor and evaluate the effectiveness of their energy efficiency policies.

"Energy Communities" are not explicitly mentioned in this Directive. However, the term "new producers" in the Directive may refer to ECs as well. There are some rules in which Member States are asked to establish a framework which facilitates grid connection to new producers who cogenerate[14] electricity:

- "Member States should establish, on the basis of objective, transparent and **non-discriminatory criteria**, rules governing the bearing and sharing of costs of grid connections and grid reinforcements and for technical adaptations needed to integrate new producers of electricity produced from high-efficiency cogeneration, etc.
- Producers of electricity generated from high-efficiency cogeneration should be allowed to issue a call for tender for the connection work. Access to the grid system for electricity produced from high-efficiency cogeneration, especially for small scale and micro-cogeneration units, should be facilitated."[15]

In the Directive of 2012 rules are defined (in Annex XII) concerning the role of transmission system operators and distribution system operators (DSO) in relation to "any new producers" which also concern ECs:

"Transmission system operators and distribution system operators shall:

(a) set up and make public their standard rules relating to the bearing and sharing of costs of technical adaptations, such as grid connections and grid reinforcements, improved operation of the grid and rules on the non-discriminatory implementation of the grid codes, which are necessary in order to integrate new producers feeding electricity produced from high-efficiency cogeneration into the interconnected grid;

(b) provide any new producer of electricity produced from high-efficiency cogeneration wishing to be connected to the system with the comprehensive and necessary information required, including:

(i) a comprehensive and detailed estimate of the costs associated with the connection;

(ii) a reasonable and precise timetable for receiving and processing the request for grid connection;

[14] "'Cogeneration' means the simultaneous generation in one process of thermal energy and electrical or mechanical energy" (EED 2012, p.11); "Guarantee of origin for electricity produced from high-efficiency cogeneration" (EED 2012, Annex X, p.45)

[15] 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 (recast), p.7

(iii) a reasonable indicative timetable for any proposed grid connection. The overall process to become connected to the grid should be no longer than 24 months, bearing in mind what is reasonably practicable and non-discriminatory;

(c) provide standardized and simplified procedures for the connection of distributed high-efficiency cogeneration producers to facilitate their connection to the grid.

The standard rules referred to in point (a) shall be based on objective, transparent and non-discriminatory criteria taking particular account of all the costs and benefits associated with the connection of those producers to the grid. They may provide for different types of connection."[16]

These non-discriminatory rules shall facilitate grid connection for new producers as well as improve and accelerate their access to the market. As a result, transposing these rules into national law could contribute significantly to ensure fair price conditions by TSOs and DSOs for the new players and support the new players' competitiveness and profitability in the market.

On July 14, 2021, the Commission published a "Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on energy efficiency (recast)"[17]. On March 10, 2023, negotiations between parliament and the EU countries with regard to this proposal were concluded with an agreement. This agreement contains explicit recommendations to the Member States for the treatment of ECs:[18]

- "The contribution of renewable energy communities, pursuant to Directive (EU) 2018/2001 of the European Parliament and of the Council90, and citizen energy communities, according to Directive (EU) 2019/944 towards the objectives of the European Green Deal and the 2030 Climate Target Plan, should be recognised. Member States should, therefore, consider and promote the role of renewable energy communities and citizen energy communities. Those communities can help Member States to achieve the objectives of this Directive by advancing energy efficiency at local or household level. They can empower and engage consumers and enable certain groups of household customers, including in rural and remote areas to participate in energy efficiency projects and interventions. Energy communities can help fighting energy poverty through facilitation of energy efficiency projects, reduced energy consumption and lower supply tariffs."[19]

Besides promoting the role of ECs, Member States are also required to take action:

- "Member States shall take appropriate measures to support a multilateral dialogue with the participation of relevant public and social partners such as owners and tenants organisations, consumer organisations, renewable energy communities, citizen energy communities local and regional authorities, relevant public authorities and agencies and the aim to set out proposals on jointly accepted measures, incentives and guidelines pertinent to the split of incentives between the owners and tenants or among owners of a building or building unit.

[16] DIRECTIVE 2012/27/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (14.11.2021, p.47) See also: 2018 DIRECTIVE (EU) 2018/2002 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 amending Directive 2012/27/EU on energy efficiency (21.12.2018), p.21

[17] https://eur-lex.europa.eu/resource.html?uri=cellar:a214c850-e574-11eb-a1a5-01aa75ed71a1.0001.02/DOC_1&format=PDF

[18] The agreement establishes an EU energy efficiency target of 11.7% for 2030, exceeding the Commission's original 'Fit for 55' proposal. It requires EU Member States to collectively ensure an additional reduction of final and primary energy consumption, compared with energy consumption forecasts made in 2020. These targets shall drive energy savings in end-use sectors such as buildings, industry and transport. See also: https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1581
https://www.euractiv.com/section/energy-environment/news/new-eu-energy-efficiency-directive-sets-11-7-reduction-target-by-2030/

[19] Directive (Recast), p.59

> Each Member State shall report such barriers and the measures taken in its long-term renovation strategy pursuant to Article 2a of Directive 2010/31/EU and Regulation (EU) 2018/1999."[20]

The Directive stresses collaboration between authorities, agencies and ECs and requires Member States to contribute to developing measures, incentives and guidelines by supporting a dialogue between all relevant actors. In addition, Member States shall identify barriers for advancing ECs and report measures to counteract them.

The EED Directive recast shall ensure that energy communities are able to receive sufficient policy and financial support in order to maximize their role in addressing energy savings at household level, as well as ensuring an inclusive and fair energy transition. With this recast the Commission attempts to link and create coherence with the Renewable Energy Directive and the Internal Electricity Market Design Directive by acknowledging the role of Renewable Energy Communities and Citizen Energy Communities in promoting energy efficiency and poverty alleviation.

[20] Directive (Recast), p.107

3. Transposition of EU legal framework into legislation & regulation of the three focus countries

This chapter looks at the transposition of the European regulatory framework for energy communities in Spain, Denmark and Bulgaria. The following in-depth review shows different levels of transposition in the three countries that are being investigated as part of the LIFE-BECKON project.

Table 2. Summary of transposition of EU legal framework related to energy communities into legislation & regulation in Spain, Bulgaria and Denmark

	SPAIN	BULGARIA	DENMARK
REDII transposition	- REDII implemented on a minimum level.	- REDII still not fully transposed.	- REDII implemented on a minimum level.
IEMD transposition	- IEMD partially transposed in the national legislation.	- IEMD partially transposed in the Bulgarian Energy Act.	- IEMD obligatory parts are implemented.
EED transposition	- EED completely transposed.	- EED completely transposed.	- EED completely transposed.
Definition of EC	- No explicit definition of CECs. - Definition of REC fully transposed into national law. - No definition of legal entity of RECs provided in national law.	- No legal definition of REC and CEC. - Proposed REC definition in line with EU definition.	- Definition of REC follows the EU definition of REDII. - Definition of CEC according to IEMD.

3.1 Spain

Transposition of the REDII in Spain

The Spanish legal framework provides a definition of **Renewable Energy Communities via the Royal Decree-Law 23/2020** of 23 June approving energy-related and other measures to revitalize the economy (Royal Decree-Law 23/2020). In this regulation, the Spanish Government defines RECs as "legal entities based on open and voluntary participation, autonomous and effectively controlled by partners or members that are located in the proximity of renewable energy projects owned and developed by said legal entities, whose partners or members are natural persons, SMEs or local authorities, including municipalities, and whose primary purpose is to provide environmental, economic or social benefits to their shareholders or members or to the local areas where they operate, rather than financial gain."[21] The **Royal Decree-Law 23/2020 transposes the RED II directive** on the promotion of energy from renewable sources using the same definition of RECs. Therefore, the definition of RECs is fully transposed into Spanish national law, although no concrete information on legal entities that could be suitable for RECs are given.[22]

Transposition of the IEMD in Spain

The Spanish national legislation has partially transposed the **Internal Electricity Market Directive 2019/944 through the Royal Decree-Law 23/2020** which was approved during the Covid-19 pandemic and identifies the energy sector as a vital promoter of Spain's economic recovery. Therefore, the decree-law enacts measures in the energy sector and other areas for economic revitalization. The Spanish legal system has been partially amended regarding storage and

[21] https://www.boe.es/buscar/pdf/2020/BOE-A-2020-6621-consolidado.pdf, p. 29-30.
[22] https://www.rescoop.eu/policy/spain-rec-cec-definitions

aggregation through this royal decree-law. The law amends **Law 24/2013** of December 26th on the Electricity Sector (the 'Electricity Sector Act'), clarifying the definition of storage holders and independent aggregators as well as by introducing key aspects regarding access and connection to the grid. At the same time, there are **no specific definitions or mentionings of CECs in the different legislations, therefore no direct concept exists in Spanish regulation** and no provisions for their implementation are given, neither is a specific support programme in place.

Transposition of the EED in Spain

The Energy Efficiency Directive (EED) 2018/2002 has been completely transposed into Spanish national legislation and regulation. In Spain, the EED was transposed into national law through **Royal Decree-Law 235/2013**, of April 5, which regulates energy efficiency in the use of energy in buildings and afterwards through **Royal Decree-Law 390/2021**, of June 1, which approves the basic procedure for the certification of the energy efficiency of buildings. The Spanish government has implemented several measures to meet the energy efficiency targets set by the EED, including the creation of a **National Energy Efficiency Plan**, the promotion of energy-efficient buildings and the support of renewable energy sources. Additionally, the Spanish Building Code establishes mandatory energy efficiency requirements for new buildings and renovations, ensuring that the EED is fully integrated into national regulations. Energy efficiency is also treated in the **Law 2/2013,** of 29 May, on the promotion of energy efficiency and the rational use of energy: This law promotes energy efficiency and the rational use of energy, including provisions for the promotion of self-consumption.

3.2 Bulgaria

Transposition of the REDII in Bulgaria

The **REDII 2018/2001 Directive is still not fully transposed in the Bulgarian legislation**. There is a proposal for changes in the Bulgarian Law on RES for the transposition of the REDII 2018/2001 Directive which was approved by the Council of Ministers on January 17, 2023 and has to be presented to the Parliament. Currently, the acting Parliament is released and, due to the new parliamentary elections in April 2023, the adoption of the transposed regulation will be delayed (hopefully) by the second half of 2023. The proposed REC definition is consistent with the EU definition, laying down the right of households and SMEs to install their own RE supply systems and provides clear guidelines for the regulation of citizens-led energy initiatives.

Transposition of the IEMD in Bulgaria

The **IEMD Directive is partially transposed in the Bulgarian Energy Act**, in accordance with the national market liberalization process. Currently, two segments are functioning:

- **Regulated prices**. Prices are determined by the national Energy and Water Regulatory Commission, and consumers are served by the final suppliers (subsidiaries of the electricity distribution companies). With the amendments to the Energy Act as of June 2020, only household consumers continue to be served by final suppliers, provided they have not chosen another supplier.
- **Free market**. Electricity is purchased by traders and industrial end consumers at freely negotiated prices. 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, and 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. Prices are set by the national Energy and Water Regulatory Commission. The incentives of entering the free market and purchasing electricity through negotiation are limited. With the amendments to the Energy Act as of June 2020, all non-domestic (business) customers need to buy electricity on the free market. 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.

There is however no specific definition or mention of CECs.

Transposition of the EED in Bulgaria

The **EED Directive is completely transposed into Bulgarian legislation**. The implementation is the responsibility of the Ministry of Energy. The activities implementing the State energy efficiency improvement policy are carried out by the executive agency under the Minister of Energy – Sustainable Energy Development Agency (SEDA). SEDA is also responsible for the monitoring and evaluation of the energy efficiency at national and sectoral level and for the control over the observance of legislation in the field of energy efficiency. SEDA is the monitoring body of the national cumulative target according to Article 7 EED[23]. To implement the EED, changes have been made to several national laws:

- **Energy Efficiency Law**, last amended March 2021
- **Energy Law**, last amended March 2021

In Bulgaria the EED obligations are also subject to secondary legislation under the Energy Efficiency Law as follows:

- Ordinance for the methodologies for setting the national energy efficiency target, the setting of the total cumulative target, the setting up of an energy savings obligation scheme and the allocation of the individual energy savings targets to the obligated parties.
- Ordinance for the eligible measures for obtaining energy savings in final consumption, the manner of proving the energy savings obtained the requirements to the methodologies for evaluation of energy savings and the manner for confirming energy savings.
- Ordinance for the cost-optimal levels of minimum energy performance requirements for buildings or parts thereof, the energy efficiency technical requirements and indicators, as well as the method/ standards for determining annual energy expenditure in buildings, including of nearly zero-energy buildings.
- Ordinance for the circumstances subject to entry of the qualified energy auditors into the public register, the procedure for entry into the register and for obtaining information, as well as the terms and procedure for the attainment of qualification of the auditors.
- Ordinance for the terms and procedure for performing an energy efficiency audit and certification of buildings, of parts of buildings, as well as the terms and procedure for preparing an energy savings evaluation.

[23] National EED Implementation Report (NIR) 2021 ED implementation in Bulgaria, January 2022, p. 1-2, https://www.ca-eed.eu/ia_document/national-implementation-report-bulgaria/

- Ordinance for the terms and procedure for performing the energy efficiency inspection of heating systems with hot-water boilers and of air-conditioning systems, the terms and procedure for preparing an energy savings evaluation.
- Ordinance for the indicators of energy expenditure, the energy performance of enterprises, industrial systems and outdoor lighting systems, as well as the terms and procedure for performing an energy efficiency audit and preparing an energy savings evaluation in industrial enterprises.

3.3 Denmark

Transposition of the REDII in Denmark

RECs are defined in the **BEK no 1069 of 30/05/2021** Order on RE communities and citizen energy communities and the relationship between RE communities and citizen energy communities and electricity trading companies and collective electricity supply companies[24] in § 3 as "a legal entity

(a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity;

(b) the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities;

(c) the primary purpose of which is to provide environmental, economic or social community benefits rather than financial profits to its shareholders or participants or the local areas in which it operates."[25]

This definition corresponds to the RED II definition of REC. However, REDII has only been transposed in Danish legislation on a minimum level which caused **criticism from the EU**, especially in the **following aspects**:

- Some issues are still not defined, particularly proximity.
- Treatment for rental/cooperative buildings and private ownership in Denmark is not aligned with the directive.
- Electricity is heavily taxed when transported across building limits. This tax regulation, aimed to promote electricity savings, stems from the early 1980s and is not in line with present attempts to stimulate energy sharing in order to achieve optimal system configurations.

On September 29, 2022, the EU Commission expressed **further criticism** [C(2022)6326] of the Danish implementation of (EU) 2018/2001 concerning[26]:

- Definitions of terms,
- Support schemes including the stability of the financial support,
- Administrative procedures, regulations, and regulations for renewables energy,
- Organization and duration of permit processes,
- Procedures for simple notification for network connections,

[24] BEK nr 1069 af 30/05/2021 Bekendtgørelse om VE-fællesskaber og borgerenergifællesskaber og forholdet mellem VE-fællesskaber og borgerenergifællesskaber og elhandelsvirksomheder og kollektive elforsyningsvirksomheder

[25] Translation from: https://www.retsinformation.dk/eli/lta/2021/1069

[26] This was expressed in an Danish Ministry of Energy's orientation to the Danish Parliament's Committee for EU and The Committee for Energy and Supply on 24th of January 2023

- Guarantee of origin for energy from renewable energy sources,
- Access to and operation of networks,
- RE self-consumers,
- RE communities,
- Special rules for biofuels, liquid biofuels, and biomass fuels produced by food and feed crops and other provisions on renewable energy in the transport sector,
- Sustainability criteria and criteria for saving greenhouse gas emissions for biofuels, liquid biofuels, and biomass fuels,
- Control of compliance with the sustainability criteria and the criteria for savings of greenhouse gas emissions,
- Rules for calculating the greenhouse gas effects of biofuels, liquid biofuels and the fossil fuels they are compared to.

Transposition of the IEMD in Denmark

The definition of CEC, which is quite similar to the definition of REC in REDII and mainly differs in terms of "**proximity**", was transposed from the IEMD into Danish legislation[27]. However, similar to the REDII implementation, **solely obligatory parts were implemented** and further recommendations were largely ignored. This again caused criticism by the EU, e.g. in terms of definitions of concepts, support schemes, access to and operation of networks, special rules for biofuels, control of compliance with sustainability criteria. A **3-tier tariff** with increased payment in peak load hours has already been introduced to consumers as an incentive to change consumer behavior, which can ensure better flexibility and postpone capacity expansion of the electricity system.

Transposition of the EED in Denmark

The **EED was completely transposed in Danish law**. By then, Denmark already had high EE requirements in the building code and for energy consuming equipment. Regarding the settlement of electricity, online DSO metering with hourly settlement is available for nearly all consumers. Data used for settlement is delayed for 1 up to 2 days. There is actually no real time data available. As a consequence, data cannot be used for controlling flexibility, batteries, or energy conversion systems in an EC. A requirement exists to measure larger energy consuming equipment but only in the form of simple off-line metering or metering in battery management systems (BMS).

[27] Cf. BEK no 1069 of 30/05/2021 Order on RE communities and citizen energy communities

4. Existing national legal and regulatory frameworks

This chapter looks at wider national legal and regulatory frameworks that regulate energy communities in the three focus countries.

4.1 National regulation & legislation

The RED II and IEMD promote an enabling framework that Member States shall put in place to support the set up and operation of ECs. Key elements of success are the introduction of both RECs and CECs, the definition of provisions on energy sharing, and organization of the regional electricity market. The following subchapters investigate the specific rules and legislation on ECs in place in the three focus countries.

Table 3. Summary of existing national regulation & legislation in Spain, Bulgaria and Denmark

	SPAIN	BULGARIA	DENMARK
Legal and regulatory frameworks for ECs in place	- Definition of RECs. - Rules on self-consumption including provisions on (collective) self-consumption.	- National laws on ECs are still not in place. - ECs are promoted through the National Energy and Climate Plan. - Some sectoral laws have a direct effect on establishment and operation of ECs.	- Definitions of RECs and CECs. - Guidelines and procedures for the establishment and operation of RECs and CECs. - Rules and procedures for the supply of electricity.

4.1.1 Spain

In Spain, several legislations regulate ECs at the national level. As mentioned in Chapter 3, the main national legislation is **Royal Decree-Law 23/2020** on Energy Measures as it transposes the RED II directive and contains the definition of RECs. The decree amends **Law 24/2013** on the Electricity Sector and incorporates the figure of RECs as subject of the electricity sector.[28] Further relevant national legislations include:

- **Royal Decree-Law 244/2019**, of 5 April, on **self-consumption**: This legislation establishes the framework for the development of self-consumption, the rules for interconnecting facilities, and the procedures for obtaining authorization for self-consumption (Article 4).
- **Royal Decree-Law 29/2021**, of December 21, which adopts urgent measures in the energy field to promote **electric mobility, self-consumption and the deployment of renewable energies**. ECs are not mentioned but it allows shared self-consumption through the network between facilities less than 500 meters away, regardless of the voltage level to which they are connected. This provision of (collective) self-consumption is important as it deals with energy sharing, however the non-mentioning of energy communities in particular is a shortcoming.
- **Royal Decree 960/2020**, of November 3, which regulates the economic regime of **renewable** energies for electricity production facilities: In Article 3, it specifies that the auctions must consider the particularities of renewable energy communities so that they can compete for access to the remuneration framework on an equal level with other participants.
- **Royal Decree-Law 20/2018**, of December 7, on urgent measures to promote economic **competitiveness in the industry and commerce sector**.

[28] https://www.boe.es/buscar/act.php?id=BOE-A-2013-13645, Título II, Article 6, Paragraph 1j.

- **Law 2/2013**, of 29 May, on the promotion of **energy efficiency** and the rational use of energy: This law promotes energy efficiency and the rational use of energy, including provisions for the promotion of self-consumption.
- Energy communities are also mentioned in the **Recovery, Transformation and Resilience Plan "España Puede"**[29], in two chapters: The Urban and Rural Agenda and the Fair and Inclusive Energy Transition. The Plan refers to them as an innovative, adequate tool to promote sustainable and accessible energy in smaller rural municipalities, fit to create jobs and increase attractiveness.
- They are mentioned in the **National Long-term Strategy document España 2050**[30], in its chapter on Sustainability and Climate Change recognizing their potential for the energy transition towards more renewables and higher energy efficiency. Their advantages are described as promoting energy efficient behavior, increasing the diversification of actors in the electricity sector, mobilizing additional funds for energy from renewable sources, and more.
- **Royal Decree-Law 18/2022**, of October 18, which approves measures to reinforce the protection of energy consumers and contribute to the reduction of natural gas consumption in application of the "**Plan + security for your energy (+SE)**", as well as measures regarding the remuneration of personnel at the service of the public sector and the protection of eventual agricultural workers affected by the drought. Article 15. Modification of Royal Decree 244/2019, of April 5, Article 15.
- **Royal Decree-Law 20/2022**, of December 27, on response measures to the economic and social consequences of the Ukrainian War and support for the reconstruction of the island of La Palma and other situations of vulnerability. Article 18. Modification of Royal Decree 244/2019, of April 5, which regulates the administrative, technical and economic conditions of self-consumption of electrical energy. Self-consumption is promoted through the network, increasing its distance to 2,000 meters in the case of photovoltaic generating plants located on roofs, industrial land and artificial structures for other uses, such as those intended to cover parking spaces or other.

4.1.2 Bulgaria

Currently there are no national laws and regulations dealing with ECs, as RECs will be defined in the **Bulgarian Law on RES expected by the end of 2023**. However, the **National Integrated Energy and Climate Plan**[31] encourages the promotion of local ECs and their active participation in the energy market. And some sectoral laws have a direct effect on the establishment and operation of ECs. These are the acts and regulations mainly concerning the RES use and solar power installations, such as:

- **Energy Act**[32], in force since 09.12.2003, which 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. Also, it determines the rights and the powers of state actors in formulating energy policy, regulation and control.

[29] https://www.lamoncloa.gob.es/presidente/actividades/Documents/2020/07102020_PlanRecuperacion.pdf
[30] https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/200521-Estrategia_Espana_2050.pdf
[31] https://energy.ec.europa.eu/system/files/2020-06/bg_final_necp_main_en_0.pdf
[32] https://lex.bg/laws/ldoc/2135475623

The Energy 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[33],** in force since 03.05.2011, which 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 RE in the transport sector.
- **Spatial Planning Act**[34], in force since 03.05.2011, as regards the construction and the development of power plants, which are further regulated by standards of urban planning. Section I of the Acts regulates the coordination and approval of investment projects, including these for renewable energy generation. According to Art. 147 RES installations with installed capacity up to 1 MW do not need to be subject to a construction permitting procedure.
- **Ordinance on Regulating the Prices of Electric Power**[35] (№ 1 as of 14.03.2017).
- **Ordinance on Connection of Producers and Customers of Electricity to the Transmission or Distribution Electrical Networks** (№ 6/24.02.2014).
- **Ordinance on the Conditions and Procedure for Issuing, Transferring, Revoking and Recognizing Guarantees of Origin of Energy from Renewable Sources**[36] (№ RD-16-1117 of 14.10.2011).

4.1.3 Denmark

In Denmark, there are three regulatory orders on the national level which concern ECs:

- **BEK no 1069 of 30/05/2021** Order on RE communities and citizen energy communities and the relationship between RE communities and citizen energy communities and electricity trading companies and collective electricity supply companies[37]
- **LBK no 984 of 2021/05/12** Announcement of the Electricity Supply Act.[38]
- **BEK no 1162 of 2022/08/09** Order on subsidies for local energy communities and local anchoring[39]

The **BEK no 1069 of 30/05/2021** outlines the rules and procedures for the establishment and operation of renewable energy communities (REC) and citizen energy communities (CEC) in Denmark. Some of the key points covered in this regulation include:

- Definitions of REC and CEC, and the criteria for their establishment and operation.

[33] https://lex.bg/laws/ldoc/2135728864%22%20/t%20%22_blank
[34] https://lex.bg/laws/ldoc/2135163904%22%20/t%20%22_blank
[35] https://www.dker.bg/files/DOWNLOAD/ordinance_electro_en.pdf
[36] https://lex.bg/laws/ldoc/2135757444%22%20/t%20%22_blank
[37] BEK nr 1069 af 30/05/2021 Bekendtgørelse om VE-fællesskaber og borgerenergifællesskaber og forholdet mellem VE-fællesskaber og borgerenergifællesskaber og elhandelsvirksomheder og kollektive elforsyningsvirksomheder
[38] LBK nr 984 af 12/05/2021 Bekendtgørelse af lov om elforsyning.
[39] BEK nr 1162 af 09/08/2022 Bekendtgørelse om tilskud til lokale energifællesskaber og lokal forankring.

- Rules for the connection and operation of renewable energy systems, including the installation of meters and the sale of surplus energy to the grid.
- Guidelines for the management and administration of REC and CEC, including the roles and responsibilities of members and the requirements for governance and decision-making.
- Provisions for the relationship between REC and CEC and electricity trading companies and collective electricity supply companies, including rules for the sale and purchase of energy, billing, and settlement of accounts.

This regulation sets out the guidelines and procedures for the establishment and operation of REC and CEC in Denmark. The second important regulation, **LBK nr. 984 af 12/05/2021, outlines the rules and procedures for the supply of electricity** in Denmark. Some of the key points covered in this regulation include:

- Definitions of terms related to electricity supply, including distribution systems, transmission systems, and grid owners.
- Provisions for the licensing and regulation of electricity supply companies, including rules for the establishment, operation, and ownership of distribution and transmission systems.
- Guidelines for the planning and development of electricity supply systems, including requirements for grid planning and investment, as well as rules for connection and access to the grid for producers and consumers.
- Provisions for the regulation of tariffs and prices for electricity supply, including rules for the setting and adjustment of prices, as well as provisions for consumer protection.
- Guidelines for the regulation of renewable energy, including rules for the promotion and integration of renewable energy sources into the grid, as well as provisions for the management and operation of renewable energy systems.

Both regulations, **BEK no 1069 of 30/05/2021** and **LBK nr. 984 af 12/05/2021,** shall contribute to the country's efforts to transition to a more sustainable, carbon-neutral and reliable energy system.

4.2 Capacity building framework and financial incentives

The RED II demands an enabling framework that Member States shall put in place to support the set up and operation of ECs. Building capacity in stakeholders to facilitate the deployment and thereby enabling them to make use of the concept of ECs is an essential element of their success. Nevertheless, several Member States have failed to transpose the article on creating an enabling framework. The following subchapters investigate the capacity building offers and mechanisms that are in place in the three focus countries

Table 4. Summary of capacity building framework and financial incentives in Spain, Bulgaria and Denmark

	SPAIN	BULGARIA	DENMARK
Capacity building frameworks	- Partly in place through Community Transformation Offices, but overall lack of support to build sufficient capacities in local authorities.	- Through EU projects in the field of EC. - Obligations expected for municipalities to provide information and consultancy for the establishment of ECs.	- Only for financial support ("individual grants" below).
Subsidies / incentives offered to actors setting up an EC	- National funding and support programmes are implemented by IDAE, the national energy	- No subsidies / incentives available (as there is not a legal EC definition).	- Individual grants for ECs in the amount of DKK 4 million (approx. 540k €) annually

	agency but barriers exist to access funding.	- Financial support schemes for solar roof installations for households and small businesses.	from 2022 to 2025. - Calculating local tariffs (cf. §16 af BEK nr 1069 af 30/05/2021).

4.2.1 Spain

Capacity building for new initiatives is available through a **3-tier Government programme** issued by the Spanish national Institute for the Diversification and Saving of Energy (Instituto para la Diversificación y el Ahorro de la Energía [IDAE]). The support programme consists of **three elements: CE-Aprende ('learn'), CE-Planifica ('plan') and CE-Implementa ('implement').** The three programmes correspond to the main phases of creating an energy community and aim to promote the concept and provide funding to new projects. They were announced in 2021 as part of the Recovery, Transformation and Resilience Plan and are backed by a budget encompassing €100M.[40] While **CE-Aprende focuses on promoting and providing information** on the concept of ECs and offering the possibility of finding additional members, **CE-Planifica provides advice and funding for the planning and constitution** of the EC, including the development of feasibility studies, contract models and technical and legal assistance. CE-Implementa is the only funding line in place that **funds up to 60% of the implementation costs** of EC projects in the field of renewable and thermal energy, energy efficiency and/or e-mobility. Project selection takes into account the level of innovativeness, social participation, social benefits, fight against energy poverty, employment generation, gender perspective, and combination of different technologies. In two calls, over 70 projects were selected to receive €40M of funding, most of them for **self-consumption** of energy produced.[41]

Further enabling support is offered by **Community Transformation Offices ('Oficinas de Transformación Comunitaria' [OTC]**), complementing the three programmes and advising new initiatives on creating ECs and disseminating the concept. Beneficiaries of OTCs' services are municipalities, provincial governments and other territorial entities. All support programmes can be accessed by both RECs and CECs, though there is no specific legal framework for the latter in Spanish law.

In addition to the four instruments aiming directly at ECs, there are further opportunities for funding and support available for them via other components of the Recovery, Transformation and Resilience Plan and via **Royal Decree 477/2021**[42]. The Decree approved the direct concession of aid to the Autonomous Communities and the cities of Ceuta and Melilla for the implementation of incentive programmes for self-consumption and storage with energy from renewable sources. This means that the budget is set aside and allocated across the Spanish territory for self-consumption and storage, which benefits energy communities whose design aims at self-consumption. The amount of funding available per project, depends on the type of beneficiary and installation. In addition to funding and support allocated via national regulations, there are several Autonomous Communities that provide incentives for municipalities at the regional level for the establishment of installations of self-consumption. Conditions for such incentives can vary at the regional level and concern prerequisites such as shareholders structure, geographical coverage and type.

[40] https://www.idae.es/noticias/el-gobierno-anuncia-100-millones-en-ayudas-para-impulsar-las-comunidades-energeticas
[41] https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/transicion-ecologica/Paginas/2022/151222-apoyo-proyectos-comunidades-energeticas.aspx
[42] https://www.idae.es/noticias/el-gobierno-aprueba-1320-millones-de-euros-para-autoconsumo-baterias-y-climatizacion

4.2.2 Bulgaria

Currently, capacity building activities on ECs in Bulgaria are strictly related to EU projects in the field of EC that are under implementation in the country. These activities are extremely important to implement pilot actions in local authorities and to disseminate specific knowledge and EU good practices throughout the national community of stakeholders and authorities interested in the topic.

According to the proposal of changes to the **Law on RES** approved by the Council of Ministers on 17.01.2023 the administrative offices at the municipalities will have the obligation to provide information and consultancy for the establishment of EC by the households, businesses and interested persons.

Financial measures, subsidies or incentives for ECs have not been adopted in Bulgaria yet. However, complementary financing schemes are available for RE installation, such as a dedicated financial support scheme for solar roof installations for households and for small businesses.[43]

4.2.3 Denmark

In Denmark, a framework for financial support exists in which DKK 4 million (approx. 540k €) annually have been set aside from 2022 to 2025 for subsidies to local energy communities and local anchoring climate strategies (cf. **BEK no 1162 of 09/08/2022** Order on subsidies for local energy communities and local anchoring).[44] In addition, renewable energy actors can apply for individual grants for local energy communities and local anchoring of climate strategies via Danish Energy Agency 'Energistyrelsens' website. This support mechanism appeals to project organizations and can be used for the implementation of smaller projects with the aim to inform as well as for larger EC projects (cf. **BEK no 1162 of 09/08/2022**). In the **BEK nr 1069 af 30/05/2021** order (described under 4.1.3) the paragraphs §16 and §17 refer to support mechanisms for establishing ECs:

- **§16 concerns the calculating of tariffs**: "§ 16. If the use of the grid by REC and CEC gives rise to savings for the collective electricity supply companies, the tariffs for REC and CEC must be drawn up based on the collective electricity supply companies' assessment of the benefits for the collective electricity supply companies of RECs' and CECs' use of the grid tight." [45]
- **§17 exempts ECs from the obligation to supply electricity under certain conditions**: "§ 17. An electricity trading company's electricity product, which consists exclusively of the supply of electricity to participants or capital owners in a REC and CEC, that is only produced at electricity production facilities that are owned by the REC and CEC or by participants or capital owners in a REC and CEC, are not covered by the citizens' energy duty to supply electricity according to Announcement of the Electricity Supply Act §6 b, subsection 1 cf.

[43] For self-consumption, the free roof panel program for single-family residential buildings reduces the administrative burden for households when applying to receive a 100% grant for hot water panels and a 70% grant for solar panels for electricity without obtaining a building permit and design documentation.

[44] BEK nr 1162 af 09/08/2022 Bekendtgørelse om tilskud til lokale energi fællesskaber og lokal forankring

[45] "§ 16. Hvis VE-fællesskabers og borgerenergifællesskabers brug af nettet giver anledning til besparelser for de kollektive elforsyningsvirksomheder skal tariferingen af VE-fællesskaber og borgerenergifællesskaber udarbejdes ud fra de kollektive elforsyningsvirksomheders vurdering af fordelene for de kollektive elforsyningsvirksomheder ved VE-fællesskabers og borgerenergifællesskabers brug af net- tet." Translation from: https://www.retsinformation.dk/eli/lta/2021/1069

§6b, subsection 4, 5 and 8, even if one or more participants or capital owners in the RE community and the citizen energy community are household consumers."[46]

Grant schemes, a possible recalculation of grid tariffs depending on savings for collective energy supply companies, exemptions from the obligation to supply electricity (under specific conditions) and a capacity framework for financial support facilitate the setting-up and running of ECs in Denmark.

4.3 Hampering factors and barriers

Different regulatory frameworks and conditions have been described above for ECs in a few European countries. While some Member States have successfully started to create an enabling framework for citizen-led energy projects and energy communities, almost all ECs are still facing **regulatory barriers and factors that hamper their creation, set-up and operation**. The following subchapters give an overview of those barriers for the three focus countries.

Table 5. Summary of hampering factors and barriers for energy communities in Spain, Bulgaria and Denmark

	SPAIN	BULGARIA	DENMARK
Biggest barriers for setting up and running an EC from a legal / regulatory perspective	• Complex and lengthy bureaucratic procedures. • Lack of a defined legal entity for ECs. • Lack of standardization between provisions for self-consumption and ECs.	• Lack of transposition of EU directives and of legal definition. • Regulation is not customer-centric. • Missing national/regional competent authorities on EC. • Lack of info on EC, OSSs, platforms. • Lack of experience in EC, lack of self-organization.	• Complex and expensive process to set up ECs. • Unclear regulation, e. g. regarding cooperation between grid companies and ECs. • Lack of specification of proximity for RECs. • Lack of method for calculating a tariff model for transportation of electricity inside the EC.

4.3.1 Spain

A few barriers associated with the regulatory framework and its implementation have been identified: Though financial support exists for ECs through CE-Implementa, bureaucratic procedures and hurdles impede the effective implementation on the ground. **Complex and lengthy administrative procedures** have been put in place in Spain to set up ECs which are time-consuming for their members which oftentimes are non-professionals and voluntary individuals or municipal staff with little to no experience with the requirements for the set-up of ECs. Specifically, obstacles associated with the installation of photovoltaics, for instance obtaining access and connection to the grid and **receiving permits and licenses required**, can pose significant challenges for potential

[46] "§ 17. En elhandelsvirksomheds elprodukt, som udelukkende består i leveringen af elektricitet til deltagere eller kapitalejere i et VE-fællesskab og et borgerenergifællesskab, der alene er produceret på elproduktionsanlæg, der er ejet af VE-fællesskabet og borgerenergifællesskabet eller af deltagere eller kapitalejere i VE-fællesskabet og borgerenergifællesskabet, er ikke omfattet af pligten til levering af elektricitet efter elforsyningsloven § 6 b, stk. 1, jf. § 6 b, stk. 4, 5 og 8, selvom en eller flere deltagere eller kapitalejere i VE-fællesskabet og borgerenergifællesskabet er husholdningsforbrugere." Translation from: https://www.retsinformation.dk/eli/lta/2021/1069

members. This ties into the fact that there is a **lack of knowledge** at the municipal level concerning the creation of energy communities and the involvement of local stakeholders. So far, Community Transformation Offices have not been able to adequately address the need of support in terms of technical assistance for interested players.

As has been pointed out above, there are regulations in place that concern ECs and projects of (collective) self-consumption. This **lack of standardization** creates confusion as to which regulation to follow, especially since some subsidies are only available to energy communities. Additionally, the lack of clarity on which legal entities qualify as (renewable) energy communities creates doubts among potential developers and is a decisive hampering factor of the rapid deployment of ECs.[47] Clarification on the legal regime applicable to ECs will provide security among citizens, municipalities and other stakeholders willing to set up ECs.

So far, ECs have mostly been set up as cooperatives, associations and limited liability companies. Other forms of legal entities are however theoretically viable and suitable. Furthermore, **access to financing** is considered a barrier for ECs due to complex administrative procedures, limited funding programmes and the relative novelty of the concept which impedes many private citizens from investing in them.

In particular Royal Decree 477/2021, on self-consumption and storage for self-consumption, contains several limitations that hamper the effective deployment of ECs. Firstly, the **absence of dynamic coefficients** for surplus sharing is a significant weakness that detracts from the attractiveness of community installations. Secondly, the **role of the aggregator** remains undefined, which creates uncertainty and impedes the unleashing of the potential of ECs for a clean energy transition. Lastly, the existing legislation lacks a coherent framework for clean energy, resulting in scattered regulations and a lack of specific incentives such as tax improvements.

4.3.2 Bulgaria

In Bulgaria, **the lack of transposition of EU directives** on RECs/CECs, renewables and electricity market, is certainly the most relevant barrier for the deployment of ECs. There is still no legal definition for RECs and CECs, and there are no national/subnational specific rules and competent authorities to directly support the development of ECs. Moreover, citizen participation in the energy sector and the model of ECs is new in Bulgaria, and the national energy policy is anchored to a top-down planning approach based on centralized energy production and distribution, leading to encouraging large scale projects instead of citizen actions. Currently, households do not have enough stimuli and (economic) incentives to benefit from ECs, especially taking into account the quite long timeframe for the return of investment (over 10 years).

Access to financing is considered a barrier for ECs, due to very limited funding programmes in the fields of renewables and the relative novelty of the EC concept which impedes many private citizens from investing in them. Restrictions are proposed in the new legislation changes by introduction of different territorial zones with limits for the capacity to build solar plants that is not a stimulus, rather an obstacle for solar energy development. Moreover, the lack of continuity and coherency along the

[47] https://www.iidma.org/attachments/Publicaciones/Guia_Juridica_Constitucion_Comunidades_Energeticas_.pdf

policy process creates uncertainties and problems for end users, e.g. the planned installation of smart meters is currently delayed, and households wishing to install smart meters have to pay the whole amount by themselves.

4.3.3 Denmark

Despite the capacity building schemes described in 4.2.3, there are some other factors which hamper the establishment of ECs, especially:

- A lot of preparatory work is required to establish an EC.
- The whole process requires a lot of resources and is usually run by volunteers.
- Regulation is often unclear, e.g network companies' legislation is not coherent with national legislation on ECs. It is also unclear to what extent grid companies have to cooperate with ECs according to §15 of **BEK no 1069 of 30/05/2021** (described under 4.1.3) since there are no previous judgments to refer to.

In addition to that, there are two big challenges for ECs with regard to regulation:

- Lack of a specification of proximity for REC: flexibility is required but nobody knows exactly how far from the consumers the renewable energy facilities in the REC can be.
- Lack of a method for calculating a tariff model for internal transportation of electricity inside the EC.

5. Electricity market design

Secure, sustainable and affordable energy supplies to citizens can be guaranteed by an integrated energy market, as a cost-effective solution able to create competition allowing consumers to choose energy suppliers (and keeping prices in check). The share of **electricity produced by renewable energy sources** (predominantly solar and wind) is expected to grow from 37% in 2020 to more than 60% by 2030. At the same time, electricity must also be produced and delivered in sufficient quantities when there is no wind or sun[48]. Therefore, markets need to adapt to better integrate renewable energies and attract investment in technologies that can **complement variable energy production** (e.g. demand side response and energy storage). A transparent and efficiently monitored market would lead to an open and fair competition, also providing the right incentives for consumers to become more active and contribute to keeping the electricity system stable.

5.1 Key technical rules and key economic rules

The following subchapters give an overview of the key technical rules and key economic rules for the electricity market that are currently in place in the three focus countries.

Table 6. Summary of key technical and economic rules for ECs in the national electricity market in Spain, Bulgaria and Denmark

	SPAIN	BULGARIA	DENMARK
Key technical rules for ECs in the national electricity market	- Maximum allowed capacity in accordance with the technical capabilities of the grid and the needs of the local electricity market. - Technical requirements for ECs regarding connection to the grid and for energy production to prevent harm to the environment or public health.	- Building permit not requested for installations up to 20 kW. - Only household consumers are served by final suppliers. - Simplified approval procedure for installations up to 1 MW located outside urban areas.	- Free choice of supplier by consumers. - Exemption from delivery obligation to participants and shareholders in citizen energy communities.
Key economic rules for ECs in the national electricity market	- Bill components: EC bills are composed of energy costs, grid fees, meter rental, financing of the social bonus, and taxes which are set by the government and the national electricity market. - Tariff structure: ECs must comply with the tariff structure set by the national electricity market, which sets the price for the energy produced and consumed by ECs.	- Regulated prices and free market. - In the regulated segment, electricity prices are set by the National Regulatory Commission. - In the free market, electricity is purchased at freely negotiated prices. Customers are free to change their electricity supplier and energy surplus can be sold.	- Lower prioritization of financial gain compared to providing environmental, economic or social community benefit. - EC management shall not engage in extensive commercial activities and not have the energy sector as a primary area of economic activity. - ECs are financially responsible for imbalances.

[48] https://energy.ec.europa.eu/topics/markets-and-consumers/market-legislation/electricity-market-design_en

5.1.1 Spain

The electricity market design impacts ECs as its principles lay the foundation for their rights and duties, as well as the conditions under which they operate. A favorable design for ECs puts decentralization at its core and creates a level playing field. Currently, there are several rules - from technical to economic - in place which define the requirements for energy communities.

Key technical rules for energy communities in Spain.

- **Maximum allowed capacity**: set in accordance with the technical capabilities of the national grid and the needs of the local electricity market.
- **Connection to the grid**: ECs must meet specific technical requirements for connecting to the national grid, such as voltage levels, frequency, and power quality.
- **Technical requirements for energy production**: The use of approved energy sources and technologies as well as ensuring that energy production does not cause harm to the environment or public health.

Key economic rules for energy communities in Spain.

- **Bill components**: EC bills are composed of energy costs, grid fees, meter rental, financing of the social bonus, and taxes which are set by the government and the national electricity market.
- **Tariff structure**: ECs must comply with the tariff structure set by the national electricity market, which sets the price for the energy produced and consumed by ECs.

5.1.2 Bulgaria

In Bulgaria, the electricity and energy market is dominated by state-owned players with major market share in the energy industry. As part of the national electricity market liberalization process, currently the segments functioning are, (i) a segment with regulated prices and (ii) a segment with freely negotiated prices (the so-called free market). Currently, there are some technical and economic rules in place which are indirectly linked to ECs.

Key technical rules for energy communities in Bulgaria.

- In line with the ongoing liberalization of the electricity market, amendments to the Energy Act were adopted (June 2020), according to which from October 2020 only household consumers continue to be served by final suppliers (if they have not chosen another supplier).
- **Technical requirements for energy production installations**. In January 2023 the Parliament eased the procedures for building small photovoltaic plants and solar collectors for hot water in residential and cottage buildings for householders' own needs. According to the amendments to the Spatial Planning Act, the building permit is not necessary anymore if the total installed power does not exceed 20 kW.
- For **installations up to 1 MW** located outside urban areas a simplified regime is applied, not requiring the elaboration and approval of a detailed technical and feasibility plan.

Key economic rules for energy communities in Bulgaria.

- In the regulated segment, electricity prices are set by the National Energy and Water Regulatory Commission, consumers are served by the final suppliers (subsidiaries of the electricity distribution companies), and DSOs are responsible for the maintenance of the infrastructure and quality of supply.
- In the free market, electricity is purchased by traders and industrial end consumers at freely negotiated prices, and customers are free to change their electricity supplier. 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.
- The incentives of entering the free market and purchasing electricity through negotiation are limited. However, currently all non-domestic (business) customers need to buy electricity on the free market, leading to attractive investments in renewable energy capacities for own consumption only from business and industry players, paying higher electricity prices than the domestic prosumers.
- In the free market, energy that is not necessarily bought at regulated prices can be sold. Transactions take place between producers, energy traders and consumers. Prices are set by the national Energy and Water Regulatory Commission.

5.1.3 Denmark

Key technical rules for energy communities in Denmark.

- Free choice of supplier by consumers (cf. §6, stk. 1, 2. pkt in **LBK no 984 of 2021/05/12** Announcement of Electricity Supply Act)[49]
- Exemption from delivery obligation to participants and shareholders in citizen energy communities (cf. §6b, stk. 13 in **LBK no 984 of 2021/05/12**t)[50]

Key economic rules for energy communities in Denmark.

The key economic rules are described in the **BEK nr 1069 of 30/05/2021**:

- Lower prioritization of financial gain compared to providing environmental, economic or social community benefit (cf. §§3 and 4)[51]

[49] "§ Section 6: The supply of electricity to an electricity consumer shall be subject to an agreement to this effect between the electricity consumer and an electricity trading undertaking. An electricity consumer shall be free to choose the electricity trading undertaking and the electricity product. When changing electricity trading undertakings, the electricity consumer may not be charged a fee.
Subsection 2: An electricity consumer may freely enter into agreements with any aggregator undertakings on aggregation without the consent of the electricity consumer's electricity trading undertaking." (Translation from https://danskelove.dk/elforsyningsloven/6) "Energy aggregation" is when a group of companies or local institutions partner together to buy energy from a single developer, or multiple developers, at smaller volumes while retaining the economic advantages of a high-volume purchase. (https://www.leveltenenergy.com/post/what-is-energy-aggregation)

[50] "§ Section 6b An electricity trading undertaking offering supply of electricity to household consumers shall, on request and against payment, supply any electricity product to household consumers within the grid area(s) where the electricity trading undertaking offers electricity products, without prejudice to subsections (3), (4) and (7). Subsection 13: The Minister for Climate, Energy and Utilities may lay down rules on exemptions from the supply obligation in subsection (1), including on the supply of electricity to participants and shareholders in citizen energy communities and the supply of electricity in connection with aggregation." (Translation from https://danskelove.dk/elforsyningsloven/6b)

[51] "§ 3. For the purposes of this Order, a renewable energy community shall mean a legal entity based on open and voluntary participation, which is independent and effectively controlled by shareholders or participants located in the vicinity of the renewable energy projects owned and developed by that legal entity, whose shareholders or participants are natural persons, SMEs or local authorities, including

- EC management shall not engage in extensive commercial activities and not have the energy sector as a primary area of economic activity (cf. §6, subsection 2)[52] and such persons may "not have a determining influence in renewable energy communities and citizen energy communities." (cf. §6, subsection 3)
- ECs are financially responsible for imbalances they create in the electricity system (cf. §9)[53]

5.2 Role of key actors for successfully establishing and running energy communities

There are a number of relevant actors in the electricity market that are responsible for creating framework conditions for ECs or that are directly involved over the lifetime of such initiatives.

- Regulators: They are responsible for setting up the regulatory framework for ECs and ensuring that ECs comply with the required legal and regulatory requirements.
- Government: It is involved In terms of supporting the promotion of renewable energy and energy efficiency. It also provides funding and subsidies for ECs and sets the respective legal and regulatory framework.
- Local authorities: They can support ECs with capacity building, support mechanisms, incentives and can profit from regional and local value creation (taxes on local energy production, creation of jobs in local economy etc.).
- Distribution System Operators (DSOs) and Transmission System Operators (TSOs): They are responsible for ensuring that the electricity produced by ECs is transmitted and distributed efficiently and safely and tend to protect their market shares.
- End-users: End-users, including households and businesses, are the ultimate consumers of the electricity produced by ECs. They play a crucial role in the success of ECs, as they are the primary beneficiaries of the energy produced and consumed within ECs. They also play a huge role in initiating, setting up and financing ECs and contribute significantly to the decentralization and democratization of the energy market.
- Utilities: Established energy suppliers, especially energy companies or groups, can be hampering factors because they may consider ECs as a menace for their monopoly business. Partly this is also true for municipal utilities but they can also play a supporting role for

municipalities, and whose main purpose is to provide environmental, economic or social community benefits rather than financial profit to its shareholders or participants or the local areas in which it operates.
Subsection 2. SMEs shall be understood as micro, small or medium-sized enterprises as defined in Article 2 of the Annex to Commission Recommendation 2003/361/EC.
§ 4. For the purposes of this Order, a citizens' energy community shall mean a legal entity based on voluntary and open participation and effectively controlled by participants or shareholders who are natural persons, local authorities, including municipalities, or small enterprises, the primary purpose of which is to provide environmental, economic or social community benefits to its participants or shareholders or the local areas in which it operates, rather than financial gain" (Translation from https://www.retsinformation.dk/eli/lta/2021/1069)

[52] "§6 A renewable energy community and a citizen energy community may be established and operated as an association, a partnership, a cooperative or a limited liability company. Subsection 2: Natural and legal persons making decisions on behalf of a renewable energy community and citizens' energy community shall not engage in extensive commercial activities and shall not have the energy sector as their primary area of economic activity. The first sentence includes members of the management of companies that have the energy sector as their primary area of economic activity." (Translation from https://www.retsinformation.dk/eli/lta/2021/1069)

[53] § 9. RE Communities and Citizen Energy Communities are financially responsible for the imbalances they create in the electricity system and shall therefore be balance responsible parties or delegate their balance responsibility to a balance responsible party in accordance with Article 5 of Regulation (EU) 2019/943. (Translation from https://www.retsinformation.dk/eli/lta/2021/1069)

establishing ECs, e.g. when they provide technical and economical knowledge for the creation of ECs or participate financially in ECs.

- Developers: Developers play an important role in the development of ECs by identifying potential sites, securing funding, and investing in the development of ECs.
- Financiers: Financiers provide funding for the development of ECs, allowing them to expand and grow.
- Energy Service Companies (ESCOs): They play a critical role in the development and implementation of ECs by providing technical expertise and support.
- Community Organizations: Community organizations, such as cooperatives or neighborhood associations, play an important role in the establishment of ECs by bringing together members of the community to participate in the development and operation of ECs.

5.3 Biggest market and cultural barriers for establishing and running energy communities

In addition to barriers related to the legal and regulatory framework, further hampering factors can be identified that hinder a rapid uptake and establishment of ECs. The following subchapters investigates the biggest market and cultural barriers for establishing and running ECs in the three focus countries.

Table 7. Summary of market and cultural barriers for establishing and running ECs in Spain, Bulgaria and Denmark

	SPAIN	BULGARIA	DENMARK
Barriers for establishing and running ECs from electricity market perspective	- Lack of information, experience and expertises on ECs. - Municipalities are not ready to consult and advise. - Limited opportunities to trade energy.	- Lack of information, experience and expertises on ECs. - Municipalities are not ready to consult and advise. - Scarce attitude for community self-organization - Smart meters are not available. - Lack of technical information shared by the electricity distribution companies. - Lack of favorable conditions to access financing and enter the free market.	- Difficulty for ECs to make benefits in the electricity sector. - Reluctance of DSOs to mix new EC business with their monopoly business. - Lack of specification of and permission to offer service of metering and settlement to EC by DSOs within their monopoly business area. - Lack of a specific model and stimulus for calculating a local tariff for EC by DSOs.

5.3.1 Spain

As has been mentioned before, ECs oftentimes struggle to access necessary financing and investments. Specifically, securing financial support for the initial set-up, but also for on-going operation, is a challenge as the **perceived risks of investing** in the relatively new concept of ECs are considered high by traditional investors and private citizens. With regard to entry in the electricity market, ECs face **high costs of energy production and only limited opportunities** to trade energy with other market participants. Last but not least, the **national grid in Spain may not have the**

capacity to support the growth of numbers of ECs, which could limit their ability to participate in the electricity market in the future and creates furthermore insecurity and uncertainty for citizens, local authorities and investors alike.

5.3.2 Bulgaria

Besides legal and regulatory barriers, ECs development is also hindered by the **scarcity of national inspiring good practices** and by the lack of technical information on the energy market and on the opportunities offered by ECs provided by the electricity distribution companies. Furthermore, the **scarce attitude for self-organization** characterizing Bulgarian cultural identity may not help the process towards the creation of ECs. Moreover, municipalities are often not in favor of external consultancies and advises on the topic, thus remaining anchored to outdated energy transition policies. And as mentioned before, households **struggle to access financing and investments** to benefit from ECs, especially taking into account the quite long timeframe for the return of investment (over 10 years). In addition, entering the free market - and purchasing electricity through negotiation - is not profitable by households, since the price paid for electricity consumption on the regulated market is kept artificially low and remains more attractive.

5.3.3 Denmark[54]

Besides legal and regulatory barriers, ECs have to overcome **resistance from established players** in the electricity market such as DSOs which are responsible for the energy systems' security of supply. In addition, DSOs often have competitive advantages over ECs because they have the capacity to build large scale RE systems which work more cost-efficiently. **Security of supply** is considered as very important in Denmark. It is not always easy for ECs to ensure security of supply - e g. due to cost-expensive storage, sun and wind availability.[55] One measure which may help ECs in that respect may be the introduction of a 3-tier tariff to consumers with increased payment in peak load in January 2023, as an incentive to change consumer behavior, which can **ensure better flexibility and postpone capacity expansion** of the electricity system.

DSOs are in general reluctant and often prohibited to mix new business areas and service with the monopoly business. DSOs have therefore been reluctant to develop new services for metering and billing for their former customers who now are members in an EC instead of customers of the local DSO. Long waiting times for such services makes EC's services less attractive for consumers.

A further measure which discriminates against ECs in terms of customer attractiveness is the introduction of a new tariff model for the consumers with regard to paying fees for the electricity network. This model is based on 100% payment in relation to consumption and not to the maximum capacity of the network or cables. It is calculated by DSOs and is considered cost-effective and not discriminatory. DSOs find it difficult or time-costly to recalculate this model for each EC which wants

[54] This is an assessment of the position of these parties, which we can only guess at, as they have not themselves been asked in connection with this document. It is therefore only the perception of these parties seen through their work with energy communities and their implementation in the Danish legislation over the past 3 years.

[55] DSOs and larger professional partners can set up big scale wind and solar plants together with flexibility services more cost-efficiently and with higher benefits for the geographic location on the grid and higher security of supply than a local voluntary energy community can do. It is possible to get a cheaper local tariff if the EC can prove a saving for the DSO. However, this is not easy because tariffs are staggered (low at night and high in winter at peak hours) and a new tariff 3.0 for smaller consumers is charged according to kWh.

specific calculations with regard to their financial contribution for using the electricity system to get a reduced tariff for their EC. This can only be properly calculated by the local DSO and it is very hard to be calculated or argued against by a 3rd party or by the EC. These models must also be economical for the whole community and not only for the EC or the part of the users. The Danish Utility Supply Authority which is responsible for tariff models expressed concerns about the implementation of the "tariffication" law (BEK no 1069 of 30/05/2021, §16, s. also 4.2)[56] for ECs and recommended to complement this law with a model for the calculation of a local tariff by ECs. They were also skeptical if this law would contribute to cost reductions in the electricity grid.

[56] "BEK no 1069 of 30/05/2021 Tariffication § 16. If the use of the grid by RE communities and citizen energy communities gives rise to savings for the public electricity supply undertakings, the tariff for RE communities and citizen energy communities must be based on the public electricity supply undertakings' assessment of the benefits to the public electricity supply undertakings from the use of the grid by renewable energy communities and citizen energy communities. The method for preparation of tariffs under 1. pkt. is approved by the Danish Utility Supply Authority, cf. section 73a of the Danish Electricity Supply Act." (Translated from https://www.retsinformation.dk/eli/lta/2021/1069). "LBK no 984 of 2021/05/12 § Section 73 a. Prices and conditions for the use of transmission and distribution grids shall be fixed by the public electricity supply undertakings according to published methods approved by the Danish Utility Regulator. Subclause 2. The Danish Utility Supply Agency may approve methods for limited buyer groups and for a limited period of time as part of the collective electricity supply undertakings' method development. The Danish Utility Regulator may set conditions for the approval of such methods. Subclause 3. The Minister for Climate, Energy and Utilities may lay down rules on the content of the methods used to calculate or set terms and conditions, including tariffs." (Translated from https://www.retsinformation.dk/eli/lta/2021/984)

6. Conclusions and recommendations for action for policymakers

The following subchapters highlight recommendations for national policymakers to speed up the process for deploying ECs in the three focus countries.

6.1 Spain

All in all, the transposition of RED II into Spain's national legislation has been mostly successful and a first regulatory framework for ECs has been established. However, there are a few **shortcomings** that hinder a larger uptake of the EC concept, and therefore hamper the democratization of the energy market and acceptance of the energy transition on the local level. The following recommendations concerning the evolving regulatory and legal framework are made to overcome such barriers:

Streamlining regulation: In order to avoid confusion about existing regulations and their relevance for ECs and collective self-consumption, a **consistent and clear regulatory framework** should be established with the aim to support the development and promotion of energy communities. In particular, the following changes to national legislation and regulation is recommended:

1. A complete and swift regulation of ECs is required that includes:
    a. Approval of a specific standard, with the complete and express regulation of renewable energy communities and citizen energy communities for all of Spain. It is necessary to provide the sector with legal security, and a favorable legal framework for both types of ECs.
    b. Clarification on the requirements to be an energy community.
2. The Climate Change and Energy Transition Law needs modification to include ECs across its overall contents, as well as a specific section on ECs and their potential in the energy transition.
3. Royal Decree-Law 244/2019 on **Self-Consumption** of Electricity requires modification and shall include the EC figure to reduce confusion around regulation.
4. It is recommended that EC shall be included as an instrument to contribute to the national **2030 and 2050 climate goals**.
5. The urban regulations of each Autonomous Community require modification in the sense that the EC figure shall be included to fulfill their full potential.
6. Improving **access to data** and promoting EC participation in electricity markets is recommended.
7. It is recommended that regulation facilitates **ownership** of the distribution network by renewable energy communities.

Recommendation for **national policy-makers** not strictly related to regulation:

1. Improving access to **financing**: Securing financing within the first stages of the creation of ECs is crucial to support the number of ECs entering the market. Both public and financial institutions are asked to improve conditions for investing in ECs and facilitating access to funding.

2. Supporting **market entry**: The electricity market should be more accessible to ECs, with lower costs of energy production and greater opportunities to trade energy with other market participants.

6.2 Bulgaria

Despite the legal and regulatory framework for ECs is still missing, and the concept of ECs has not been officially introduced yet, the importance of ECs is well recognized in national policy documents and legislative proposals. The National Integrated Energy and Climate Plan encourages the promotion of ECs and their active participation in the energy market. Currently, minor financial support is available only for RE installations. The following actions for policymakers are recommended:

1. The Bulgarian Parliament should urgently complete the **transposition of the RED II, IEMD and EED, setting up an effective legal and supporting framework** for ECs, with a clear legal definition of EC, prosumer and collective action initiatives, including their rights and obligations.
2. Dedicated **financial support** for vulnerable citizens should be designed and enabled, starting from the identification of households in energy poverty condition (taking into account the IEMD criteria such as low-income, high-energy costs as a share of the available income, and low energy efficiency).
3. Bulgarian energy legislation and **rules for energy sharing and participation in ancillary services'** markets should be simplified and more customer-centered, even addressing the issues of unclear pricing conditions for surplus renewable energy production, combined with the imposition of numerous fees and taxes on owners/developers of distributed PV projects.
4. It is recommended to allow **net-metering** as an important element in enabling self-consumption to be deployed in an efficient way, establishing how the excess electricity injected into the grid can be used later to offset consumption in the period when onsite renewable generation is absent or not sufficient.
5. The Bulgarian Parliament should definitely promote the establishment and operation of ECs, as the participation of many consumers in the energy sector will lead to the optimization of the use of resources and, therefore, lowering costs and reducing dependence on fossil fuels' import.

6.3 Denmark

Denmark has a legal framework that has allowed energy communities to engage in activities such as production, district heating, and even as a DSO through consumer ownership models.[57] It covers some of the basic rights of RECs and CECs to participate across the energy market. However, it also tends to support the **monopoly rights of the common grid operators and at the same time restricts the rights of RECs and CECs.** A grant scheme also exists which supports community projects and information initiatives around energy. However, there is no operable support scheme that takes RECs into account. Regulations have not been favorable for CEC and REC and the government has taken little efforts to adapt its legal and regulatory framework to enable energy communities to further

[57] https://www.rescoop.eu/policy/denmark

develop.[58] Overall, the Danish definition of the consumer at the metering point, the tariff model with taxation and administration cost for settlement and metering are making it difficult to establish and run an EC in a cost-efficient way. The following change in legislation may help to form and develop ECs in Denmark:

1. Changing the definition of **place of consumption**, so that it is defined by the electricity customer's contiguous property (proximity) and not – as today – delimited by buildings (and/or cadastral divisions).
2. Clarification that **public housing departments, cooperative housing associations and owner associations can be members of citizen energy** and renewable energy communities regardless of whether they do not meet the requirements to be SMEs.
3. Expansion of **who can be electricity customers** and thus have access to a meter number (either physical or virtual), so that in addition to households and businesses, it is clarified that housing organizations (public, cooperative and owners' associations), housing associations and institutions are also included.
4. **Electricity customers' right** to establish internal electricity connections (including between their own production and consumption facilities) - as a clarification that limits the network companies' exclusive rights and thus ensures that the extent of the distribution network is defined by the electricity customer's property.
5. Specifying that **tariff models** must be established corresponding to the different types of electricity customers and for the sharing of electricity via the collective distribution network within local energy communities with, for example, 'local collective tariffing'.
6. Support from **DSO to handle meters** for the EC or a service from DSO to supply metering and settlement by supplying submeters to the EC and utility customers, which are not directly customers at the DSO.

The six suggestions may support ECs in Denmark to become an active driver in the green transition. These barriers mainly refer to the specific Danish model and taxation of the electricity market and can therefore not easily serve as recommendations for other EU countries in this respect.

6.4 Comprehensive summary of recommendations

Transposition of the three EU directives

Currently, within the **three focus countries RECs and CECs are both solely defined in Denmark** - in this case according to the EU definition of RED II and IEMD respectively. In the current legislation of Spain REC are defined, yet in Bulgaria neither concepts have been transposed. With regard to the transposition of the three directives into national legislation, in Spain the transposition of RED II into Spain's national legislation has been mostly successful, the IEMD was partly and the EED was completely transposed. In Denmark the situation is quite similar: RED II is implemented on a minimum level, from the IEMD solely obligatory parts were implemented and the EED was completely transposed. On the other hand, **in Bulgaria none of the three directives have been implemented in national legislation** by now.

Regulatory framework

In Spain and Denmark a first regulatory framework for ECs has been established which allows ECs to engage in activities such as electricity production. **In Denmark, it even refers to district heating** and

[58] https://www.rescoop.eu/policy/denmark

to consumer ownership models as a DSO. In **Bulgaria**, despite the fact that the importance of ECs is well recognized in national policy documents and legislative proposals, no **explicit legal and regulatory framework for ECs has yet been established**. However, the importance of ECs is well recognized in national policy documents and legislative proposals.

Support schemes - capacity building framework and financial incentives

The RED II demands an enabling framework that Member States shall put in place to s**upport the set-up and operation of ECs**. In **Spain**, a **3-tier Government programme** exists which enables capacity building for new initiatives through CE-Aprende ('learn'), CE-Planifica ('plan') and CE-Implementa ('implement'). These three programmes correspond to the main phases of creating an energy community and aim to promote the concept and provide funding to new projects. In Denmark and Bulgaria no capacity building framework or operable support scheme exists. Yet, in Bulgaria there is currently minor financial support exclusively for RE installations available, and in Denmark a grant scheme was introduced to support community projects and information initiatives around energy supply.

Hampering factors & barriers - recommendations for action

Even if a basic regulatory framework is meanwhile in place, and some support schemes exist, these efforts are far from sufficient to accelerate the creation and running of ECs in Bulgaria, Spain and Denmark. It is still a complex and expensive process to set up an EC, and actors in this field face complex and lengthy bureaucratic procedures. Except for Spain, there is also no national or regional competent public authority which supports the practical planning and establishment of ECs. Behind this background, there is a strong need for action, primarily on the national level, because there are big differences between legal and regulatory conditions between the three countries.

Recommendations on transposition of EU directives

In Bulgaria, the transposition of the REDII, IEMD and EED should urgently be completed, and an effective legal and supporting framework for ECs should be set up, with a clear legal definition of EC, prosumer and collective action initiatives, including their rights and obligations. In Spain and Denmark, RED II and IEMD should be transposed completely and EU criticism towards non-implemented aspects taken into account.

Regulatory aspects

In general, existing regulation in the three countries should be specified and more strongly adapted to the needs of ECs. Due to the different conditions in these countries there are also different regulatory aspects which should be improved or changed:

- In **Spain**, it is necessary to provide the sector with legal security. To avoid confusion about existing regulations and their relevance for ECs, a consistent and clear regulatory framework should be established with the aim to support the development and promotion of ECs. In addition, a specific standard should be approved, with the complete and express regulation of REC and CEC for all of Spain. And regulation should facilitate ECs' ownership of the distribution network.
- In **Bulgaria**, energy legislation and rules for energy sharing and participation in ancillary services' markets should be simplified and more customer-centered. Net-metering should be allowed as an important element in enabling self-consumption.
- In **Denmark**, the definition of place of consumption should be changed, so that it is defined by the electricity customer's contiguous property (proximity) and not – as today – delimited

by buildings. It should also be clarified that public housing departments, cooperative housing associations and owner associations can be members of CEC and REC. Tariff models must be established corresponding to the different types of electricity customers and for the sharing of electricity via the collective distribution network within local ECs. DSO should be required to handle meters for the EC or deploy a service to supply metering and settlement for ECs.

To facilitate the planning, implementing and running of ECs in each of the three countries, it is key to streamline existing regulation and to establish a regular framework which is consistent, transparent and easily comprehensible.

Support schemes

Besides the Spanish 3-tier government program, another support mechanism for the creation of ECs in Spain are Community Transformation Offices (CTO). Beneficiaries of CTCs' services are municipalities, provincial governments and other territorial entities. So far, however, CTO have not been able to adequately address the relevant actors' need for support in terms of technical assistance. Thus, even in Spain there is currently no specific support mechanism which meets the specific needs on the municipal level.

Municipalities and local authorities are strong actors which can support the creation of ECs. Many of them have developed sustainable energy and climate action plans (SECAPs) in which the transition towards sustainable energy sources is a key element. In this context, local governments can develop measures to support the creation of ECs. In addition, local governments are „on site" and can get easily in touch with ECs in their local area. Thus, municipalities are in an appropriate position to collect feedback „from the ground" about challenges and obstacles which impede the creation of ECs. They may communicate this feedback to the regional and national level and provide recommendations for changes in national legislation, regulation and with regard to technical and financial support schemes. However, in many municipalities there is still a lack of political will for energy transition, or there is no knowledge about the benefits of ECs in terms of regional value creation. In addition, municipalities suffer frequently from budget restrictions and do not have enough personal and financial resources to support the creation of ECs.

Behind this background, national governments should not only aim to streamline regulation and legislation and reduce complex and lengthy administrative procedures but also provide more financial means to municipalities for establishing local support mechanisms. A support mechanism helping local governments to set up ECs could for example comprise the following elements:

- A guidebook providing technical assistance to cities and communities that want to set up ECs including practical advice on legal and administrative procedures, governance, financing, and communication
- A program which provides training and capacity-building opportunities to local authorities, citizens, and businesses and empowers communities to take an active role in the energy transition
- An online one-stop-shop platform providing a range of services, including technical assistance, financing advice, and project management support.

As we have seen in Chapter 2, EU directives require in principle such a kind of support to local or regional authorities from Member States:

- The proposal EED (recast) of the commission (2021/agreed in 2023) stresses collaboration between regional authorities, relevant public authorities, agencies and ECs and requires Member States to contribute to developing measures, incentives and guidelines by supporting a dialogue between all of them (cf. p. 13).
- The REDII requires that „regulatory and capacity-building support is provided to public authorities in enabling and setting up RECs, and in helping authorities to participate directly" (cf. p. 10)

In Denmark and Bulgaria, the government or regional / local authorities should be induced to build up a specific capacity building framework or operable support scheme for ECs. Based on the Spanisch 3-tier Government support mechanism described above, access to financing should be improved by public and financial institutions to secure financing within the first stages of the creation of ECs and to facilitate their market entry. In Denmark, public authorities should start an operable support scheme that takes RECs into account. In Bulgaria, a national / regional competent authority should be defined to support EC development which then could partly help them to get enough information on EC, OSSs, transfer expertise and knowledge about the creation of ECs and support them to establish processes for self-organization. In general, Government and public authorities should facilitate market entry conditions for ECs. The electricity market should be more accessible to ECs, with lower costs of energy production and greater opportunities to trade energy with other market participants.

Recommendation for EU impulses to stimulate the creation of ECs

In order to accelerate local and regional energy transition by a massive expansion of ECs, we support the following revisions of RED II proposed by **REScoop.EU**:

- "Provision of support for RECs in integrating renewables in buildings and in collaborating with local authorities, particularly through public procurement; DSOs should be required to develop projections for this type of potential as part of the distribution network plans. …This would help provide clarity for energy communities and other market actors that want to develop projects to help optimize the distribution network."[59]
- "Promotion and support for RECs in the heating & cooling sector, particularly district heating and cooling. Member States ensure the accessibility of renewable heating and cooling to all consumers … . When adopting and implementing those measures, it should be acknowledged that RECs can contribute to the achievement of these ambitious objectives, and ensure the inclusion of vulnerable households."[60]
- "Distribution and transmission operators should be capable of monitoring electricity flows in real-time."[61]
- "Simplified, special procedures for RECs and renewable energy self-consumers to obtain a grid connection, as well as provision of other technical assistance."[62]
- "Integrated multilevel planning and mapping to guarantee that the local potential for renewable energy production is assessed and harnessed, and support for development of local policy aims or objectives for the promotion of citizen and community-owned energy."[63]

[59] REScoop.EU: The RED revision: How to maximise the potential for communities to contribute to local RE production, 2023/10/25 - https://www.rescoop.eu/toolbox/the-red-revision-how-to-maximise-the-potential-for-communities-to-contribute-to-local-renewables-production, p.2/4
[60] REScoop.EU: The RED revision, p.2/5
[61] REScoop.EU: The RED revision, p.2
[62] REScoop.EU: The RED revision, p.2
[63] REScoop.EU: The RED revision, p.2

Based on the results of our investigation, we recommend the following additional revisions:

- Induce Member States explicitly to establish a capacity building programme for new initiatives which also provides funding (cf. best practice 3-tier Government programme “Learn-Plan-Implement” in Spain).
- Create incentives / provide funding for support mechanisms built-up by national or regional public authorities to help new initiatives to successfully plan and run ECs.
- Legal security is one of the key success factors for establishing ECs. Therefore it is key to establish a consistent and clear regulatory framework which supports the development and promotion of ECs.
- Extend the place of consumption to the electricity customer's contiguous property (proximity) instead of delimiting it by buildings (and/or cadastral divisions).
- Allow housing organizations (public, cooperative and owners' associations) to be electricity customers and thus have access to a meter number (tax issue).
- Simplify permitting procedures to reduce bureaucratic hurdles and ease access to the grid for non-professional project owners.

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Abbreviations

BMS	Battery Management System
CEC	Citizens Energy Community
CEP	Clean Energy Package
EC	Energy Community
ESCO	Energy Service Company
EU	European Union
DSO	Distribution System Operators
EED	Energy Efficiency Directive
IEMD	Internal Market for Electricity Directive
MSME	Micro, Small and Medium-sized Enterprises
OSS	One-Stop-Shop
RE	Renewable Energy
RED II	Renewable Energy Directive
RES	Renewable Energy Sources
SECAP	Sustainable Energy and Climate Action Plan
SME	Small and Medium Enterprises
TSO	Transmission System Operator

Sources

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- Rural Energy Community Advisory Hub, 2023, National Legal and Policy Frameworks for rural energy communities

Annex I - Survey template

Country profile form distributed to LIFE-BECKON pilot partners to gather information in the respective focus countries.

1.	**Definition of "Energy Community" (EC) in national law / regulation: How is an EC defined in your country's law / regulation?**
1.1.	Does it correspond to the EU definition? Does it differ from the EU definition?
2.	**Transposition of EU legislation / regulation into national law**
2.1.	How far is REDII transposed in your country's national legislation/regulation?
2.2.	How far is IEMD transposed in your country's national legislation/regulation?
2.3.	How far is EED transposed in your country's national legislation/regulation?
3.	**Which national legislation / regulation deals with ECs in your country?**
3.1.	Are there subsidies / incentives offered to actors setting up an EC? If yes, which ones are most important?
3.2.	Is there a capacity building framework mentioned? If yes, what kind of support is offered?
3.3.	Is there any discrepancy between legal / regulatory subsidies/incentives /support schemes and its practical availability in your country?
3.4.	Which are the biggest barriers for setting up and running an EC from a legal / regulatory perspective?
4.	**Practical electricity market aspects for establishing and running an EC in your country**
4.1.	Who are the key actors in your national electricity market who are decisive for successfully establishing and running ECs?
4.2.	Which are the key technical rules for ECs in your national electricity market?
4.3.	Which are the key economic rules for ECs in your national electricity market?
4.4.	Which are the biggest barriers for establishing and running ECs from a electricity market perspective
5.	**Conclusions of the legal /regulatory situation of EC in your country and final recommendations with regard to changing legislation / regulation and best practices**