Empowering Renewable and Citizen Energy Communities

Deliverable D5.1

Implementation analysis of the ECs (initial)

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1. Introduction

The POWER-E-COM project aims to foster the implementation of Renewable and Citizen Energy Communities (RECs and CECs) across various partner countries through structured support, business modelling, and local stakeholder engagement.

Within Work Package 5 (WP5), the preparation of country-specific **Implementation Roadmaps** was initiated in **Autumn 2024**. The purpose of these roadmaps is to translate the conceptual energy community business models developed in WP4 into actionable and locally tailored implementation strategies.

The Implementation Roadmaps began to be elaborated using a common **Canvas Implementation Roadmap template**, prepared by ENERGAP and discussed collaboratively among partners. The final version of this template is presented in **Annex I**.

At the beginning of **2025**, project partners started to draft their respective EC implementation roadmaps. These include both pilot ECs and scalable models, covering countries such as **Spain, Germany, Ireland, Slovenia, Bulgaria**, and **Austria**. While the partners have made significant progress, the final versions of the roadmaps are still in development, with the **submission deadline set for summer 2025**.

As of **March 2025**, the status of roadmap preparation per country is as follows:

- **Spain** – Draft of the roadmap for EC prepared
- **Germany** – Canvas implementation roadmap prepared
- **Bulgaria** – Canvas prepared for one EC
- **Slovenia** – Canvas prepared for one EC
- **Austria** – A specific roadmap for energy storage implementation is under development
- **Ireland** – Canvas roadmap drafted; key barriers identified include high grid connection costs, lack of access to national funding, and delayed implementation of EU directives

The roadmaps will be further developed and refined in cooperation with local stakeholders, as originally planned. This ongoing dialogue will help ensure that the energy communities are tailored to national and local contexts, effectively enabling successful setup and long-term sustainability.

This report provides an initial analysis of the progress made and serves as a foundation for the final deliverables due later in 2025. It also supports the wider project goals of scaling citizen-led energy initiatives across Europe by documenting experiences, challenges, and best practices identified so far.

2. The main topic presented in Energy Community Implementation Roadmap

In order to initiate the preparation of the Implementation Roadmaps, project partners adopted a **Canvas-based methodology**, tailored specifically to the needs of the POWER-E-COM project. This structured approach was designed to ensure a consistent and comprehensive overview of each Energy Community (EC), while allowing room for local adaptation and contextual specificity.

The **Canvas draft**, which served as the starting point for roadmap development, is included in **Annex II**. It has been used as a flexible tool to collect and organise key information across diverse pilot sites, covering both technical and socio-economic aspects of EC setup.

The main thematic areas included in the Canvas roadmap template are:

- **Vision & Objectives** – Defining the core goals and long-term aspirations of the energy community
- **Stakeholders & Governance** – Identifying key actors and outlining the structure of ownership and decision-making
- **Regulatory & Legal Framework** – Mapping relevant national and EU-level legal frameworks, permits, and policy support
- **Technical Feasibility & Infrastructure** – Describing the renewable energy technologies, production capacity, and grid integration solutions
- **Financial Plan & Funding** – Estimating initial investments, funding sources, operating costs, and revenue streams
- **Risk Management** – Identifying potential risks (technical, financial, legal) and proposing mitigation strategies
- **Community Engagement & Education** – Ensuring inclusive participation, awareness-raising, and capacity building within local communities
- **Key Milestones & Timeline** – Providing a chronological roadmap with defined phases, goals, and deadlines
- **Technology & Innovation** – Highlighting digital tools, smart solutions, and innovative approaches such as peer-to-peer trading or blockchain
- **Sustainability & Scalability** – Addressing long-term viability, environmental impact, and potential for replication in other regions

This comprehensive structure ensures that each implementation roadmap not only serves as a technical guide but also reflects the socio-political and economic realities of each region, facilitating more resilient and community-empowered energy systems.

In the case of Ireland, for instance, the Canvas revealed structural barriers such as prohibitively high grid connection costs, delayed implementation of EU energy directives, and lack of access to national

support schemes—highlighting the importance of tailoring implementation strategies to address specific regulatory and infrastructural challenges.

3. The first ideas presented in the Implementation roadmaps

By March 2025, the project partners have made notable progress in drafting their initial energy community implementation concepts. While the full roadmaps are still under development, the first ideas have already been shaped using the common Canvas structure. These initial drafts provide a snapshot of local ambitions, challenges, and proposed models for future development.

- **Spain**
  The Spanish partner ESCAN has prepared a comprehensive **draft roadmap for EC Montilla Renovable**. This roadmap includes detailed plans for a phased rollout of up to **1,200 kWp of PV installations**, integration of **smart metering**, and a **citizen-led governance model**. The roadmap also addresses social inclusion, proposing that **10% of the energy production** be allocated to vulnerable households. Key risks include changes in electricity prices, limited roof availability, and stakeholder engagement. A financial model based on community contributions and public grants is under consideration

- **Germany**
  In Germany, three EC concepts are in development: **Schwabsoien, Bayrischzell, and Etting**. All of them are structured as **biomass-based district heating systems**. The implementation Canvas for Schwabsoien indicates a **900 kW capacity and 1.8 GWh/year production**, with a GmbH ownership model. While key milestones like initial connections have been achieved (2022), full rollout and expansion are ongoing

- **Bulgaria**
  The Bulgarian EC model, led by the municipality of Gabrovo, envisions a **100 kW rooftop PV system** financed through **crowdfunding**, targeting both **public institutions and SMEs**. It emphasizes participatory governance and public-private collaboration. Regulatory updates enabling EC legal forms and simplified connection for <100 kW systems were also highlighted

- **Slovenia**
  The roadmap for the Podravje region focuses on **pilot EC SELNICA**, aiming to install PV through a **single-member producer model** due to the current lack of subsidies. The approach includes strong community education elements, using the pilot to inspire replication. The EC will be structured as an association and is expected to start operation by the end of 2025

- **Austria**
  Austria, having already implemented several ECs (REC and CEC), is taking a **more advanced and targeted approach**, focusing specifically on the integration of **energy storage systems**. A tailored roadmap will explore technical and regulatory possibilities for optimizing energy use and enhancing resilience through storage, rather than establishing a new EC from scratch

- **Ireland**
  The Irish roadmap, developed by TUS and Tipperary Energy Agency, highlights **significant systemic barriers to energy community development**. While the vision for empowering communities is strong, the practical implementation is hindered by excessive grid connection costs (ranging from €600,000 to €4 million), long lead times (up to 9 years), and a lack of access to national support schemes such as the Enabling Grant and SRESS. Despite these challenges, Ireland has made progress through community actors like Community Power and local initiatives supported by TUS. Two community solar farms (5 MW each) have already paid €1 million in milestone payments for grid access but are still awaiting connection. The roadmap emphasizes the **need for regulatory reform**, proper implementation of EU directives, and **transparent funding access** to unlock the full potential of energy communities.

All documents have been uploaded to the project SharePoint and reflect the partners' diverse regional conditions, technologies, governance models, and levels of maturity. These initial concepts form the foundation for the final implementation roadmaps due in summer 2025 and will be refined through further stakeholder consultations.

4. Cooperation with stakeholders

Stakeholder engagement is a central pillar in the development, implementation, and long-term operation of Energy Communities (ECs) within the POWER-E-COM project. All partners are actively involving local actors throughout the various phases—from initial co-design and technical planning to legal structuring, funding strategy, and community outreach.

Each partner has adopted a context-specific engagement strategy tailored to local needs and the maturity of the EC concept. Common engagement formats include **stakeholder roundtables, co-creation workshops, mentoring sessions**, and **technical advisory meetings**. These activities are designed to foster transparency, trust, and co-ownership among citizens, municipalities, local SMEs, energy agencies, and regulators.

Beginning in **April 2025**, dedicated workshops will be launched across partner countries to review and co-develop the drafted implementation roadmaps. These events will be critical for gathering feedback, aligning priorities, and ensuring the viability of the proposed models.

Examples of stakeholder involvement:

- **Ireland**
  The Irish partner (TUS/TEA) hosted its first socialisation workshop at TUS Thurles in December 2024. The event brought together community leaders, local authorities, energy agencies, and citizens to reflect on national barriers and propose tailored solutions. Key discussion points included **prohibitively high grid connection costs, delays in RED II implementation, limited access to the Enabling Grant**, and the need for transparent and supportive regulatory frameworks. The workshop also emphasized the importance of local leadership and capacity building. The Irish roadmap process has benefited from this dialogue, but the stakeholder community continues to push for practical changes in national policy to enable real implementation.

- **Spain**
  In Montilla, the EC held engagement sessions supported by ESCAN and the municipality to define participation models, raise awareness of self-consumption schemes, and assess citizen willingness to invest. A training programme was launched to upskill citizens in energy topics and decision-making.

- **Bulgaria**
  The EC model in Gabrovo engaged with citizens, SMEs, municipal departments, and legal advisors to co-design a crowdfunding-based PV project. The municipality played a proactive role in aligning the EC model with national regulatory reforms and engaging the broader community.

- **Slovenia**
  The Podravje pilot EC is being developed in cooperation with the **Municipality of Selnica ob Dravi**, local citizens, and voluntary associations such as the local fire brigade. Stakeholder workshops and promotional events are planned to educate the wider public and facilitate future replication.

Through this collaborative approach, the POWER-E-COM project ensures that the EC models are not only technically and legally sound, but also **socially inclusive, locally accepted, and resilient over time**.

5. Conclusions

As reflected in the partner documentation and ongoing collaborative efforts, the development of the Energy Community Implementation Roadmaps is well underway. Although the roadmaps are still in draft form, they already contain a wealth of information that will not only **guide the establishment of pilot ECs** but also facilitate the **replication of successful models** across Europe.

Each roadmap offers **detailed insight into technical feasibility, regulatory barriers, financial strategies, and social engagement**, forming a robust foundation for implementation. Once finalized, these documents will also serve as **tools for continuous monitoring and learning**, enabling stakeholders to track progress, assess performance, and identify opportunities for improvement.

It is essential that the design, implementation, and operational phases of each EC are closely monitored. This will help identify bottlenecks, refine methodologies, and inform future recommendations—whether directed at local developers, community leaders, or policymakers at national and EU level.

The status as of **April 2025** demonstrates that all partner countries are on track to develop at least one Energy Community in the areas of **electricity and/or heat production**. These efforts mark an important step toward more decentralized, citizen-led, and sustainable energy systems, aligned with the objectives of the POWER-E-COM project and the broader EU Green Deal.

Furthermore, the findings and experiences gathered during this initial phase will directly be used for the activities of T5.2 and T5.3. In Task 5.2, the roadmaps will guide the structure and content of national and regional implementation workshops, helping to tailor engagement strategies and stakeholder action plans. In Task 5.3, the implementation process will be continuously monitored through a structured “diary” approach, enabling knowledge transfer, early identification of obstacles,

and the formulation of recommendations for replication and upscaling of energy communities across the EU.

While overall progress is encouraging, some partner countries—such as Ireland—face entrenched structural and regulatory barriers that require urgent policy attention. These include high financial entry thresholds, prolonged grid connection delays, and limited access to national support schemes. Addressing such obstacles will be critical for ensuring a truly inclusive and equitable energy transition across all regions.

The upcoming months will be crucial for finalizing the roadmaps, conducting stakeholder validation, and moving into the operational phase. The project remains committed to fostering transparent, inclusive, and replicable energy community models across all participating regions.

Annex I

On the next page you can see the canvas that will be used for each EC roadmap.

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Canvas ROADMAP

Vision & Objective	**Stakeholders & Governance**	**Regulatory & Legal Framework**
Technical Feasibility & Infrastructure	**Financial Plan & Funding**	**Risk Management**
Community Engagement & Education	**Key Milestones & Timeline**	**Technology & Innovation**
Sustainability & Scalability		

Annex II

Following, the roadmap canvasses are shown for all POWER-E-COM target countries but for Austria. Reason for that is that Austria is most probably the absolute leader in REC/CEC implementation in the EU. Thus, no more roadmaps for REC/CEC are needed there, but another topic will be worked on during POWER-E-COM, energy storage systems for REC/CEC. Updates about these activities will be provided in the next Implementation reports.

Following will presented therefore:

- **Spain**
- **Germany**
- **Bulgaria**
- **Slovenia**
- **Ireland**

Spain

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Canvas

Energy Community Montilla Renovable

Vision & Objective Set-up and operate an energy community which will promote collective PV self-consumption from PV installations - Consider providing social benefits by providing electricity to vulnerable families (approximately 10 % of the production).	**Stakeholders & Governance** Internal body: - President and vice-president: legal representative. - Secretary: organize documents and meetings. - Treasurer: Economic issues. External bodies: - National public entities: Could give public grants. - DSO: In charge of physical system and smart meters. - Private entities: Could finance the installation and provide services.	**Regulatory & Legal Framework** - Maximum distance to share electricity from PV installations 2.000 m for PV in roof - Need of agreement to distribute the production among members - Connection point with electric grid regulation and bureaucracy.
Technical Feasibility & Infrastructure - PV Installations foreseen (in several stages) 1) 1,200 kWp installed by 2027 promoted by PEC 2) Batteries to storage 125 kWh energy	**Financial Plan & Funding** - Neighbours pay up-front 500 € each for the initial investment (for approx. 1 kWp) - External financing the remaining amount (bank loan) - It has been applied to a public grant	**Risk Management** Main risks considered: - Change in the electricity prices. - Real availability of the roofs at the installation time. - Component of the installation failure. - Reduction in the interest of the citizens to participate in the EC.
Community Engagement & Education - Engaging events for initially interested members: contents as energy community stages, self-consumption… - Training events with deeper contents: tools, dimension, pay-back…	**Key Milestones & Timeline** - Final model ready: 11/2024 - Funding secured and contracts signed: 11/2025 - Systems installed and in operation: 06/2026.	**Technology & Innovation** - Use of home smart metering, smart meter of PV production, App for consumers to monitor their self-consumption
Sustainability & Scalability Two strong basis to expand the energy community: - Citizen interest: commitment and willing to develop more energy projects. - Montilla local authorities: support, promotion and giving up public roofs		

Germany

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Canvas ROADMAP

Energy Community Schwabsoien

Vision & Objective Objective: Provide biomass heat. Impact: CO2 reduction 533 tCO2/y. Participants: ~100 households.	**Stakeholders & Governance** Stakeholders: Municipalities, local company Eirenschmalz, citizens, Local energy agency EWO Kompetenzzentrum EKO e.V Ownership: GmbH. Governance: Dorfenergie Schwabsoien GmbH.	**Regulatory & Legal Framework** Regulations: Limited possibilities for the municipality to invest. Legal form: GmbH.
Technical Feasibility & Infrastructure District heating using biomass. Capacity: 900 kW Production: 1.8 GWh/year.	**Financial Plan & Funding** Investment: 0.667 Mio €. Funding: 30%. Revenue from heat sales.	**Risk Management** Risks: Authorisation procedures, Technical problems. Mitigation: Adjustment of the business model (Ltd.). Backup: Operational structure (Heat Supplier & Operater), Gradual expansion.
Community Engagement & Education Workshops, meetings with residents. Info via EWO and municipalities.	**Key Milestones & Timeline** Foundation 2021. Connection of first buildings to the network 2022. Start of expansion to the neighbouring village Schwabbruck 2024. Full operation 2024, expansion ongoing.	**Technology & Innovation** Digital monitoring implied. Central biomass delivery.
Sustainability & Scalability CO2 savings. Local sourcing. Less traffic by replacing individual heating oil deliveries. Expansion to neighbouring village of Schwabbruck.		

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Canvas ROADMAP

Energy Community Bayrischzell

Vision & Objective Objective: Provide biomass heat. Impact: CO2 reduction 917 tCO2/y. Participants: 46 buildings (residential buildings, municipal buildings, hotels, bank).	**Stakeholders & Governance** Stakeholders: Municipality, hotels, residents, Regional development organisation, Local energy agency EWO Kompetenzzentrum EKO e.V., bank, Installers. Ownership: GmbH. Governance: Acher Energie GmbH.	**Regulatory & Legal Framework** Regulatory delays and economic constraints. Legal form: GmbH.
Technical Feasibility & Infrastructure District heating using biomass. 2.3 km network. Capacity: 2030 kW Produktion: 3.1 GWh/year.	**Financial Plan & Funding** Investment: 3.5 Mio €. Funding: 40% (construction of the heating network & heating centre) Revenue from heat sales: 370,000 €/yr.	**Risk Management** Challenges: site permits, cost hikes, financing/economic viability. Mitigation: Adjusted development area, adjusted business model (Ltd.).
Community Engagement & Education Multiple info events. High local demand confirmed.	**Key Milestones & Timeline** Foundation 2021. Construction 2025. First supply winter 2025/2026	**Technology & Innovation** Simultaneous broadband cable installation. Central biomass.
Sustainability & Scalability CO2 savings. Local sourcing. Less traffic by replacing individual heating oil deliveries.		

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Canvas ROADMAP

Energy Community Etting

Vision & Objective Objective: Community-based heating. Impact: CO2 reduction 355 tCO2/y. Participants: 40 houses.	**Stakeholders & Governance** Stakeholders: Citizens, municipality, Local energy agency EWO Kompetenzzentrum EKO e.V., Co-operative Association (GVB). Ownership: Cooperative.	**Regulatory & Legal Framework** Legal form: Cooperative.
Technical Feasibility & Infrastructure District heating using biomass. Capacity: 600 kW. Generation: 1.2 GWh/year.	**Financial Plan & Funding** Investment: 1.1 Mio €. Funding: 40% (construction of the heating network & heating centre) Heat sales revenue.	**Risk Management** Challenges: Technical problems, financing Backup: Organisational structure Cooperation
Community Engagement & Education Strong citizen involvement. EWO and GVB support.	**Key Milestones & Timeline** Co-op founded 2023. Start constuction of heating genter and grid 2024/25. Connection of first houses in the course of 2025	**Technology & Innovation** Central biomass. Future plans to include PV and heat pump.
Sustainability & Scalability CO2 savings. Local sourcing. Less traffic by replacing individual heating oil deliveries. Social cohesion. Heat network expandable. Green electricity planned.		

Bulgaria

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Canvas ROADMAP

Municipality-led Renewable Energy Community with Crowdfunding-based Investment

Model I

Vision & Objectives	Stakeholders & Governance	Regulatory & Legal Framework
Goal: To explore and implement a collective public-private partnership model that: • Engages citizens in the energy transition by increasing awareness of the benefits and procedures for installing RES • Provides clean and secure energy for the municipality and local citizens • Shields the community from energy market volatility by reducing dependence on fluctuating prices in the liberalised market (particularly beneficial for budget-dependent public institutions and small businesses) • Serves as a replicable model for other stakeholders interested in establishing similar energy communities (EC) Expected Impact: Reduced reliance on fossil fuels (environmental), lower and more stable energy costs alongside job creation (economic),	Key Stakeholders: • *Municipality*: mobilizes resources, disseminates information, aligns with and advocates for supportive local and national energy policies • *Citizens and their associations*: engaged as financial supporters, collective producers and consumers of green energy • *SMEs and their associations*: attracted as a balancing group • *Expert advisors*: conduct feasibility studies, legal analysis, financial and technical modelling to ensure the project's viability and success Ownership Model: a consortium agreement for collective action with an official legal form as a separate company established under the Bulgarian Obligations and Contracts Act	Regulatory Requirements: Legal status of energy communities established by the transposition of RED II and IEMD into Bulgarian law via amendments to: • Renewable Energy Sources Act (Oct 13, 2023) • Energy Act (Nov 14, 2023) Participation rights: • End-consumers, including households, may freely join RECs without losing existing rights or facing discrimination • Businesses may participate, provided activities are separate from their main commercial operations Energy communities are allowed to: • Produce, consume, store, and sell surplus renewable energy • Participate in energy markets on equal terms, including via PPAs

and regulatory approvals, which reduce bureaucratic hurdles and facilitate quicker implementation. In this case, 52% of the total energy production (approximately 61,958 kWh annually) is consumed on-site by a participant in the EC, the Regional Non-Hazardous Waste Landfill, benefiting from lower grid fees and reduced balancing costs. The remaining 48% of the total production (approximately 57,192 kWh annually) is either sold to the grid at market prices or used by other community members through PPA contracts.	• Financial participation per individual or legal entity: min. BGN 500 – max. BGN 5,000 Operational Costs & Revenues: • Annual Revenue: 120 MWh/year × €115/MWh = €13,800/year • Annual Expenses: Operations & maintenance: €3,400/year • Gross Benefit: €10,400/year (€13,800 – €3,400) • Payback Period: approx. 8.2 years Revenue Streams: • Income generated through PPA contracts for energy consumption • Revenue used to cover operational costs and payback investments • Community members receive returns proportional to their investment contributions	community members and cost-optimization measures • Regulatory Changes – Shifts in energy policies, grid tariffs, or legal frameworks -> Engage with policymakers and advocate for supportive regulations • Market Volatility – Fluctuations in energy prices impacting projected revenues -> Secure consumer on-site, as well as long-term PPA contracts for the excess energy • Limited Community Engagement – Low participation affecting funding and governance -> Awareness campaigns, participation incentives, and transparent governance Backup Plan: • If participation is low, scale the project accordingly or expand membership eligibility beyond municipal citizens and SMEs to the national level
Community Engagement & Education Communication Strategy & Feedback Mechanism: primarily conducted in a digital environment, including: • Public outreach via mass media and social media channels, as well as through local and national conferences, public meetings, and thematic events to raise awareness, attract participants, and gather feedback from citizens and experts during the preparatory phase • A dedicated section on the Gabrovo Municipality website for sharing energy	**Key Milestones & Timeline** Feasibility Study: November 2023 - January 2024 Initial Funding Secured: Crowdfunding and membership drive - December 2023 - January 2024 Infrastructure Development: PV installation and setup - throughout 2024 Legal Entity Established: EC formally registered - 2024	**Technology & Innovation** Digital Tools & Approaches: • Monitoring Software: A dedicated platform for remote tracking of PV system performance, including real-time data on energy production and system status • Interactive Platform: will also support visualizing project results and facilitating communication • Smart meter installed in the main consumer in-place

community updates, news, and publicly accessible documents (https://gabrovo.bg/bg/page/1625) • Email-based communication with community members and stakeholders • Paperless administration, with physical copies archived only where legally required • Ongoing development of an interactive platform to visualise project results, enable file sharing, and support community interaction Awareness & Education: • a public discussion at the launch of the initiative for interested parties - including citizens, SMEs, and experts - introducing the energy community model, the benefits of collective investment in renewable energy, and participation procedures • general assembly of community members organized each year, featuring presentations and guest lectures from experts or international best-practice representatives to share knowledge and build member capacity • thematic events and public discussions hosted by the municipality focused on renewable energy and energy transition • ECTO launched by Gabrovo Municipality (under the POWER-E-COM project) to transfer experience, useful materials and advice to other municipalities and citizens	Full Operation: Community becomes fully operational - by end of 2024 Long-Term Development: Focus on sustainability, growth, and replication - 2025 to 2034	

and increased citizen engagement and energy literacy (social) Target Participants: Bulgarian citizens and SMEs, Gabrovo Municipality Timeframe: November 2023 – start of the implementation process 2024 – established as a legal entity and PV installations 2025 – 2034 – focus on community sustainability, development and replication	Governance Structure: In the initial phase, the Municipality of Gabrovo and the team of experts will lead key activities such as site selection, preparation of documentation, and issuing a public call for membership. Once operational, governance will shift to the community members, who will actively participate in decision-making. Each member has one vote, regardless of their financial contribution.	Organizational flexibility: • RECs are open, voluntary, and not restricted to a specific legal form • Must be registered in the Commercial Register Membership scope: • Individuals, SMEs, and municipalities located in urbanized areas (populated zones, surroundings, industrial parks) • Primary purpose must be to generate environmental, economic, or social benefits Permits & Approvals: • PV systems < 100 kW benefit from streamlined administrative procedures, including simplified grid connection and reduced regulatory burden for faster implementation Policy Support: • Limited direct incentives currently available
Technical Feasibility & Infrastructure Energy Source & Generation Capacity: a 100-kW rooftop solar PV system, installed on the rooftop of the Regional Non-Hazardous Waste Landfill in Gabrovo, generating approximately 120 MWh of energy annually Grid Integration: PV systems below 100 kW benefit from streamlined administrative processes, including simplified grid connection	**Financial Plan & Funding** Initial Capital Investment: • Total investment (including engineering, taxes, etc.) for the 100 kWp system: €85,000 Funding Sources: • Funds raised through a crowdfunding campaign	**Risk Management** Key Risks & Mitigation Strategies: • Technical Failures – Potential issues with PV system installation, performance, or maintenance -> Regular maintenance, monitoring systems, and warranties with suppliers • Financial Shortfalls – Insufficient crowdfunding or lower-than-expected revenues -> Diversification of potential

Sustainability & Scalability

Sustainability & Environmental benefits:

- Estimated annual CO_2 emissions reduction of approx. 73.5 tonnes, based on Bulgaria's emission factor (0.616 tCO_2/MWh)
- Ongoing reduction of carbon emissions and other pollutants, improving air quality and public health in Gabrovo
- Promotion of sustainable behaviour and green technology adoption among residents and local businesses

Long-term vision:

- Social impact goal: 5% of total energy production allocated free of charge to vulnerable households
- Enable energy exchange between existing residential prosumer PV installations and the energy community
- Replication of the model in other Bulgarian municipalities through knowledge sharing initiatives like ECTO

Slovenia

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Canvas ROADMAP

EC SELNICA

Vision & Objective To establish 1st EC in Slovenia using PV as a source of electricity	**Stakeholders & Governance** Municipality, citizens, fire brigade It will be established as a associations	**Regulatory & Legal Framework** Slovene regulation framework is set and is the possibility to have CEC or RES EC, as well as energy sharing model.
Technical Feasibility & Infrastructure Technical feasibility study is prepared	**Financial Plan & Funding** Funding will be done by 1 member of EC and will serve as a producer	**Risk Management** There is a risk of financing because there is no subsidies and still not developed procedures at DSO
Community Engagement & Education The EC will serve as a pilot for other interested people or organisations. Not only EC members but also other will be invited to workshops and promotional and educative events	**Key Milestones & Timeline** Star to operate at the end of 2025.	**Technology & Innovation** PV technology and some innovative aspect with data management.
Sustainability & Scalability The EC will run for long time and it will be easy to replicate or upgrade.		

Ireland

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Canvas ROADMAP

Vision & Objectives To encourage and enable energy communities to thrive in Ireland. This is currently very difficult due to current conditions around payment for grid connection and failure to implement the RED.	**Stakeholders & Governance** **DECC** – Department of Environment, Climate and Communications The Department is responsible for setting national energy policy, including the National Climate Action Plan. It is responsible for ensuring that Ireland transposes relevant EU legislation in Ireland, including the Renewable Energy Directive. **SEAI** – Sustainable Energy Authority of Ireland, Ireland's national body responsible for promoting and supporting the transition to sustainable energy. **Commission for Regulation of Utilities (CRU**) The CRU was established in 1999 and operates within a policy and statutory framework set by Government and has responsibility for economic regulation and customer protection in the energy and water sectors and regulation of energy safety. **ESB Networks** The Commission for Regulation of Utilities (CRU) has given ESB the responsibility for managing Ireland's electricity networks. This means ESB is in charge of both the power lines that carry electricity around the country (transmission), and the lines that bring electricity to individual homes and businesses (distribution). ESB's team that handles this work is called ESB Networks.	**Regulatory & Legal Framework** RED – The Renewable Energy Directive is a cornerstone of the EU's strategy to achieve a greener, more sustainable energy system while contributing to global e□orts to combat climate change. Overall, the Renewable Energy Directive (RED II) positions energy communities as a crucial element in the EU's energy transition, promoting local involvement in renewable energy and helping to democratise energy production and consumption. It gives these communities a clear legal framework to participate in the energy market while contributing to the EU's climate and sustainability goals. It has also specified definitions of energy communities.
Technical Feasibility & Infrastructure 4.6 MW– The MW installed of community energy in Ireland as of December 2024 (Templederry Wind Farm so far with 2 x wind turbines)	**Financial Plan & Funding** **€600,000 to €4 m** The range of costs for grid connection issued by ESBN for Community Energy Projects. This has made some of these projects unviable	**Risk Management** EU directives must be followed. The grid must be more accessible through financial incentives for energy communities.

	€1m the amount of 'milestone payments' already paid to ESBN for two community owned solar farms (5MW X2) that are still awaiting grid connection. Communities have had to finance this upfront cost. **€100,000** - The potential annual profit for communities in generating their own energy after capital expenditure cost have been repaid – economic revenue for 20 years based on a 5-6MW solar farm, keeping money and jobs in the local community.	
Community Engagement & Education Community Power Community Power | Ireland's first community owned electricity supplier. Technological University of the Shannon SDRI Research Institute - TUS Tipperary Energy Agency CATALYST - tippenergy.ie	**Key Milestones & Timeline** - 9 years on average for a connection to grid for an Energy Community.	**Technology & Innovation** Smart meters were introduced in Ireland in 2023/24. By the end of 2025, every home and business in Ireland will have a smart meter. You will have instant access to information about your electricity use and be able to use smart services.
Sustainability & Scalability (SRESS) Small Scale Renewable Energy Support Scheme – (up to 6MW) The SRESS tari□s will provide support to small scale renewable electricity projects through a guaranteed tari□ (price). This tari□ will be characterised by a Feed-in Premium (FiP) tari□ without an auction. The support rate will be provided for the support lifetime, with successful applicants receiving a premium on the market revenues they receive from a supplier for their renewable electricity. This scheme is o□ering supports for renewable electricity installations to the likes of Communities, SME's and Farmers. These particular cohorts are not necessarily as suited to other support measures, such as the utility scale Renewable Electricity Support Scheme (RESS) and the Micro-generation Support Scheme (MSS). SRESS support scheme was launched in May 2024 but the Terms and Conditions were only finalised in late December 2024. Community Enabling Framework - SEAI The Community Enabling Framework is a suite of complementary resources to support communities to develop their own projects. This resource is administered and managed by SEAI. https://www.seai.ie/plan-your-energy-journey/for-your-community/enabling-framework		

A key element of these supports for communities is an Enabling Grant (up to €180,000 for eligible communities) This grant is designed to support project design and planning, grid connection, submission costs and advice for project financing. The Community Enabling Framework has been in place for over two years. Numerous community energy projects have applied for an Enabling Grant but as of December 2024 none have been successful in accessing or drawing down this grant.