



SOCIALNRG



**AFFORDABLE
GREEN ENERGY
FOR EVERYONE!**

D3.3 Blueprints for pilot communities (draft for pilot deployment)

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1 Executive Summary

This deliverable presents the **draft SOCIALNRG pilot blueprints** as actionable, context-sensitive pathways for establishing inclusive Renewable Energy Community (REC) solutions that address energy vulnerability in social housing and mixed-tenure neighbourhoods. The blueprints translate co-creation insights and local diagnoses into a structured implementation framework, supporting partners in navigating early engagement, feasibility assessment, and preparatory decision-making. As such, they should be read as **living and provisional documents**, reflecting the current state of pilot development rather than fully consolidated implementation models.

The primary target audience includes local authorities, social housing providers, energy community organisations, social services, and technical and financial intermediaries supporting community energy initiatives. The document is designed as a practical reference for actors seeking to develop REC models that remain accessible to vulnerable households while operating within evolving legal, technical, and organisational conditions.

SOCIALNRG applies a shared methodological backbone based on the four-stage community energy development framework (Inspiration, Preparation, Implementation, Operation), complemented by four cross-cutting workflows. While this common structure ensures comparability across pilots, the concrete activities and timelines presented here reflect **draft assumptions and interim choices**, shaped by current regulatory contexts, community readiness levels, and operational constraints. The methodological approach is described in detail in Chapter 4.1.

Across the three pilots—Cinisello Balsamo (Italy), Ravne na Koroškem (Slovenia), Mechelen (Belgium)—the co-creation process highlights consistent success conditions, including vulnerability-sensitive engagement formats, affordability safeguards, trust-building through transparent communication, and governance arrangements aligned with residents' capacities. At the same time, the pilots are at different stages of maturity and face unresolved challenges that cannot yet be fully addressed within this draft.

For this reason, the present document should be understood as an **intermediate blueprint**. The **final SOCIALNRG blueprints will be published in June 2027**, following further implementation, monitoring, and learning. At that stage, greater clarity is expected regarding regulatory developments, governance arrangements, and the ways in which the challenges identified in this draft have been effectively addressed or mitigated.



2 Context and Local Diagnosis – Co-creation Processes

The SOCIALNRG project engaged vulnerable residents in co-creation workshops to diagnose local needs and collaboratively shape Renewable Energy Community (REC) solutions in each pilot site. Deliverable D2.2 - '*A review of co-creation and household engagement processes (preliminary version)*' provides a detailed review of these co-creation and household engagement processes. To contextualize the blueprint plans for the pilot communities, this chapter summarizes the essential context and insights from each pilot community (Slovenia, Italy, and Belgium) and highlights how these co-created findings inform the blueprints developed in these draft blueprints. The focus here is on key findings and process insights rather than methodology. For a more detailed account of the underlying co-creation processes and empirical evidence informing conclusions in the forthcoming sections, readers should refer to the aforementioned D2.2. Similarly, for a more detailed contextual insight that informed the co-creation process, readers should refer to Deliverable 2.1 - '*Review of local REC situation, pilot community energy poverty, attitudes, and readiness (first report)*'. This outlines the initial research on the lived realities of energy poverty and energy vulnerability within our pilot sites based on questionnaires, interviews, focus groups, and complementary ethnography-inspired methods, such as sensory walks and participant observation.

2.1 Slovenia (Ravne na Koroškem)

In the Slovenian pilot community of Ravne na Koroškem, the co-creation process revealed a structurally weak starting context for the establishment of a Renewable Energy Community (REC). Residents repeatedly stated that “there is no housing community” in the building, reflecting the relative absence of a prior tradition of collective meetings or structured group engagement. Approximately 50% of households consist of residents who intend to remain in the community for only a short period and who therefore perceive their stay as “transient”. Therefore, most residents are not motivated to participate in community building or engagement. This high rate of turnover, combined with some language barriers associated with migrant backgrounds, significantly limits both project-level and broader community engagement.

Participation in the co-creation workshops was largely limited to long-term tenants (those living in the building for five years or more), while the vast majority of newer or less embedded residents actively avoided involvement, a pattern observed throughout the project. Early activities, including the first-ever communal social gathering in December 2024, therefore focused primarily on trust-building. The successful repetition of this event



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in December 2025 suggests emerging continuity in engagement and early signs of building a sense of community cohesion.

The workshops further demonstrated that everyday living challenges overshadow energy-related concerns. Energy was not initially perceived as a priority, as more immediate housing and quality-of-life issues dominated residents' attention. Most households live in very small apartments (on average less than 19 m² of usable space per occupant), generating multiple practical constraints and reinforcing dissatisfaction with crowded and messy common areas; which can act as overflow from apartments for clothes drying and storage.

Efforts to engage on energy-related discussions consistently returned to these foundational issues, indicating that without basic comfort and adequate infrastructure, motivation to engage with energy initiatives remains limited. The findings, therefore, point to strongly articulated needs related to basic living conditions, rather than to the more 'advanced' concepts of energy production, use, and management embedded in REC models.

Affordability and trust emerged as critical cross-cutting concerns. At present, heating and other energy costs are included in a flat monthly rent, meaning tenants do not monitor (nor express a desire to monitor) their individual energy consumption. While this arrangement reduces energy awareness, it amplifies concern about potential rent increases associated with new investments. Participants repeatedly stressed that any intervention must not increase housing costs, given already constrained household budgets. Reluctance to endorse measures perceived as non-essential underscores the importance of building trust in the fairness and tangible benefits of proposed investments. These insights have direct implications for the pilot blueprint: energy-related interventions must be accompanied by a transparent and credible benefit rationale to reassure tenants that improvements will not result in higher rents.¹

Despite these constraints, the co-creation workshops produced a resident-driven vision of success. Key priorities included establishing regular communication structures (e.g. a tenants' council or informal digital channels) and securing a commitment from the housing company to sustained dialogue with residents. Participants also emphasized the importance of addressing a limited set of critical infrastructure issues, including heating system malfunctions, waste management deficiencies, and post-renovation problems

¹ It is actually important to note that in the case of Ravne, the building owner (Stanovanjsko podjetje) is hoping that cost savings from the use of solar PV can be used to freeze the rents paid by tenants, which would otherwise have to rise in the coming years to take account of higher costs and general price inflation.



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such as moisture and mould. Although these priorities extend beyond the scope of establishing an energy community, they were recognized as integral to energy empowerment, as improvements to thermal comfort and building performance directly affect energy use.

The co-creation process also opened discussion on complementary mobility-related measures, such as improved bicycle infrastructure, illustrating the value of a holistic, place-based approach. Overall, the local diagnosis in Ravne na Koroškem demonstrates that social infrastructure, trust-building, and improvements to basic living conditions are prerequisites for successful REC development, directly shaping the priorities of the Slovenian pilot blueprint.

This is an important theme to come out of this work. Across the EU, there are approximately 20 million social and public housing units. These disproportionately house lower income and more vulnerable households; many of whom struggle with the burden of paying their energy bills. As such, they have a lot of potential monetary upside from participating in a REC. However, other more immediate and tangible daily challenges are often given priority and seemingly abstract or complex concepts, like establishing a REC, are pushed to the side. This speaks to the unique challenges of establishing an energy community in such conditions. However, in order for the energy transition in the EU to be “just” it must also be “inclusive”, meaning that making slow progress (even from a low base) is clearly better than making no progress at all.

2.2 Italy (Cinisello Balsamo)

The Italian pilot in Cinisello Balsamo, located in a cooperative housing complex in an outer region of Milan city, started from a comparatively strong position in terms of social cohesion relative to the other two project pilots, yet faced distinct engagement challenges. All participating households are members of a long-established housing cooperative, providing an existing governance structure and a tradition of communal activities.

Despite this favourable context, the co-creation process revealed signs of engagement fatigue. By the time the workshops were conducted, residents had already participated in multiple interviews, meetings, and research activities under earlier project tasks. Several participants expressed frustration with what they perceived as repetitive engagement, leading to reluctance toward additional meetings. This highlighted the need to streamline engagement and reduce the perceived burden of participation. In response, facilitators deliberately shifted away from formal, investigative formats toward more informal and socially embedded settings, such as workshops held during “aperitivo”



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hours. This adjustment underscored a broader insight relevant across pilots: relaxed, convivial formats significantly lower participation thresholds and support sustained engagement.

The workshops further identified a set of context-specific vulnerabilities related primarily to energy literacy and consumer protection. Many residents, particularly elderly cooperative members, reported difficulties understanding energy bills, contracts, and market offers. Participants shared concrete experiences of misleading electricity contracts and aggressive sales practices following energy market liberalization, resulting in anxiety and, in some cases, financial harm. As a result, improving the community's capacity to navigate the energy market was articulated as a priority form of protection. In parallel, residents raised concerns regarding indoor thermal comfort for "fragile" household members, such as the elderly or chronically ill. Participants emphasized that standard definitions of energy poverty insufficiently capture these lived realities, as technically adequate heating does not necessarily ensure health-appropriate comfort during extreme weather conditions. These discussions reframed the REC not merely as a technical or financial intervention, but as part of a broader care-oriented approach to community well-being.

While short-term cost savings were acknowledged as relevant, many older cooperative members approached the REC from a long-term, intergenerational perspective. They recognized that investments such as rooftop photovoltaics or efficiency upgrades might not yield immediate personal benefits, yet viewed them as necessary steps toward securing a more resilient and affordable energy future for younger and future cooperative members. This forward-looking orientation shaped expectations toward REC governance, with strong emphasis placed on transparency, accessible information, and capacity-building measures that would enable sustained participation over time. The energy community was thus conceptualized as a legacy-building mechanism, rather than a narrowly instrumental response to current energy costs.

A central outcome of the Italian co-creation process was a successful introduction of the "TED" concept (Tutor dell'Energia Domestica). This proposal emerged directly from residents' expressed need for trusted, hands-on guidance in managing energy consumption and bills. The TED is envisioned as a community-based energy advisor (either a trained professional or a knowledgeable resident) capable of providing personalized support, including explaining tariffs, interpreting bills, and advising on efficient energy practices. Participants strongly endorsed this concept, identifying it as both a practical tool for improving energy literacy and a mechanism for strengthening intergenerational solidarity within the cooperative. The Italian team recognized the TED



as a potential cornerstone of the local REC model, offering a highly tangible and trust-building benefit. This approach is particularly salient in light of Italy's full electricity market liberalization planned for 2027, which will require many elderly residents currently on regulated tariffs to select new suppliers. The co-creation process identified this transition as a critical moment of vulnerability, but also as a strategic opportunity for the REC to act as a trusted intermediary. Overall, the Italian local diagnosis foregrounded education, trust, and long-term community resilience as key conditions for REC success, directly informing a blueprint that integrates advisory services, consumer protection functions, and simplified engagement formats.

2.3 Belgium (Mechelen)

The Belgian pilot is situated in Mechelen, in a neighbourhood preparing for the introduction of a district heating system integrating it with the REC model in the social housing context. The co-creation process highlighted the central challenge of targeted engagement, particularly the difficulty of involving households most affected by energy vulnerability.

Participation patterns to date have revealed a clear imbalance. The social housing tenants, the primary target group, were underrepresented in the first workshop as well as in the second session, which was attended exclusively by homeowner households.² This skewed participation resulted in discussions being shaped largely by more empowered actors, while the perspectives of vulnerable tenants remained marginal. This underscores the need for carefully designed outreach strategies, particularly in the Belgian pilot. The findings point to a structural challenge, which is that households experiencing energy vulnerability are often simultaneously the hardest to engage, due to factors such as distrust, disengagement, or practical participation barriers. Addressing this gap emerged as a prerequisite for ensuring that the REC reflects the needs of its intended beneficiaries.

Despite these challenges, the Belgian workshops generated important insights into residents' priorities and conditions for trust. A recurring theme was scepticism toward new initiatives considering perceived longstanding neglect of basic maintenance and public infrastructure in the neighbourhood. Participants frequently referred to deteriorated pavements, flooding, and poorly maintained shared spaces, expressing

² While the homes in the pilot neighbourhood were all built by the local social housing company (Woonland), in previous years it was possible for sitting tenants to purchase their home under certain conditions. This has led to a small number of privately owned homes being mixed in with the majority of social housing dwellings.



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concern that large-scale energy investments might be pursued at the expense of resolving these more fundamental issues.

Such observations illustrate how everyday infrastructural deficiencies shape residents' perceptions of institutional credibility. Consequently, the Belgian pilot blueprint situates the REC not as an isolated technical intervention, but as part of a broader improvement trajectory. Project partners have therefore sought coordination with local authorities to align the district heating rollout with visible improvements in maintenance and public space, reinforcing the perception of a net benefit for residents.

Clear communication and transparency emerged as another critical condition for acceptance. Many participants initially lacked a basic understanding of district heating systems, highlighting the importance of accessible, non-technical explanations. Workshop discussions demonstrated that plain-language communication significantly improved comprehension and reduced uncertainty. Residents also expressed a strong expectation for regular, proactive updates on project progress, preferably through familiar local channels and in appropriate languages. This feedback underscores the need for a structured communication strategy that reinforces transparency and responsiveness, thereby strengthening trust in the organizations implementing the REC.

The format of engagement itself was also a key finding. Participants consistently favoured small-scale community events and interactive formats over formal information sessions or door-to-door outreach, which were often perceived as intrusive or ineffective. Informal, participatory settings were seen as more welcoming and better suited to fostering dialogue, trust, and a sense of collective ownership. This insight has been directly integrated into the Belgian pilot blueprint, which prioritizes community-based events and social formats as core engagement mechanisms.

Finally, the co-creation process clarified how the REC should be framed to align with residents' priorities. Affordability emerged as a dominant concern, with widespread apprehension regarding long-term price increases associated with district heating. At the same time, participants expressed strong appreciation for the prospect of "worry-free" heating, valuing reliability, and the elimination of individual boiler maintenance. This points to an opportunity to frame the REC around comfort, convenience, and service stability rather than solely around environmental or technical benefits. However, discussions also revealed sensitivity around perceived loss of control, particularly regarding the removal of individual heating systems. The blueprint therefore emphasizes user autonomy, clear communication about retained in-home controls, and reassurance that participation does not entail diminished individual household agency. Overall, the



local diagnosis in Mechelen highlights trust, clarity, affordability, and comfort as key conditions for REC acceptance, directly shaping a pilot blueprint focused on user-centered design rather than top-down implementation.

2.4 Cross-cutting Learnings and Blueprint Implications

Across all three pilot communities, the co-creation processes revealed a set of shared patterns that cut across national and local specificities. These cross-cutting insights, documented in detail in D2.2, function as guiding principles for these draft blueprints, ensuring that each pilot intervention is grounded in lived realities rather than abstract assumptions. The key shared findings and their implications are summarized below.

Household priorities extend beyond energy – Across all pilots, households experiencing vulnerability did not identify energy as their most pressing everyday concern. Instead, basic quality-of-life issues, such as adequate living space, safe and well-maintained surroundings, and reliable building services, were consistently prioritized. This does not indicate a lack of interest in energy matters, but rather that engagement with energy initiatives is contingent on broader living conditions. Consequently, our pilot blueprints explicitly situate RECs within a wider improvement logic, integrating co-benefits where possible (e.g. linking energy upgrades with comfort improvements or coordination with housing services) so that energy communities are perceived as relevant to daily life.

Energy concerns are primarily framed in financial terms – When energy was discussed, it was overwhelmingly articulated through the lens of affordability, price stability, and financial risk. Across all pilots, residents expressed concern about high bills, future cost increases, and exposure to volatile or unfair market conditions. These concerns took different forms (e.g. fear of rent increases in Slovenia, exposure to misleading tariffs in Italy, and long-term price escalation in Belgium) but converged on the same conclusion – clarity of conditions and final results of infrastructural investments, particularly the economic aspects, is central to REC acceptance. Accordingly, the pilot blueprints prioritize clear affordability safeguards, stable pricing logics, and consumer protection measures, alongside transparent communication of financial benefits and risks.

Communication and trust are foundational conditions – Trust in implementing organizations and the quality of communication emerged as prerequisites for meaningful engagement in all three pilots. Experiences of neglect, mistrust, insufficient communication (e.g. regarding the investment plan



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development timeline for execution) generated scepticism that needs to be proactively and continuously addressed. Conversely, visible responsiveness, clear explanations, and acknowledgement of resident input were shown to strengthen trust. Pilot blueprints therefore includes explicit communication and engagement elements, such as resident liaison structures, regular updates, and accessible information channels, designed to institutionalize dialogue and reinforce transparency over time.

Community engagement is context-specific and adaptive – The co-creation process confirmed that community engagement cannot rely on standardized formats. The pilots displayed markedly different social dynamics: weak or fragmented community structures in Slovenia and Belgium contrasted with strong, but overburdened, cooperative engagement in Italy. These differences required tailored approaches, both in outreach strategies and in the design of engagement formats. Across all pilots, informal, social, and participatory settings proved more effective than formal, one-way communication. The blueprints therefore adopt flexible engagement strategies aligned with local preferences, while recognizing participation as an ongoing, iterative process rather than a single project phase.

Co-created solutions directly informed blueprint design – Importantly, the co-creation workshops generated not only diagnoses but also concrete, locally grounded solutions that were directly incorporated into the pilot blueprints. Examples include the Domestic Energy Tutor (TED) concept in Italy, community-defined communication and infrastructure priorities in Slovenia, and a comfort- and service-oriented framing of district heating in Belgium. These interventions reflect locally articulated needs, such as guidance, trust, autonomy, and everyday comfort, and demonstrate how the REC designs evolved through dialogue rather than prescription. As a result, the blueprints represent actionable, context-sensitive models rather than one-size-fits-all templates.

Taken together, these cross-cutting insights based on engagement activities provide the analytical foundation for the blueprints. They indicate the limits and perspectives for each pilot's intervention ambition with regards to the "co-created" and "co-manage" RECs, as well as indicate how the actual residents' needs, priorities, concerns, and aspirations can help shape positive developments that are aligned with their interests. The proposed pilot blueprints are shaped to fit each pilot context respectively, stressing transversal principles such as affordability, trust-building, and inclusive engagement.



3 Policy and regulatory framework

3.1 Italy

General overview

Italy has established one of the most advanced legal frameworks in the EU for energy communities. The primary legislative pillars are Legislative Decree 199/2021 which governs Renewable Energy Communities (RECs) and Legislative Decree 210/2021 governing Citizen Energy Communities (CECs). These decrees provide a definition of the main characteristics and purposes of renewable energy communities, the activities they can carry out, and the national support scheme issued for them. Members of a REC should be in the same local area (communal area) of the production plant. Consumers connected under the same medium voltage station can be members of a REC and share the renewable energy produced by the RECs plants.³ The Legislative Decree 199/2021 (Art. 31, c. d) also specifies that participation in renewable energy communities is open to all consumers, including those from low-income or vulnerable households.

Ministerial Decree 414/2023 (CACER) finalised the incentive mechanisms for RECs and defined the premium tariffs for shared energy. The regulatory model is "virtual," managed by the Energy System Manager (GSE) and regulated by the Italian National Regulatory Agency (ARERA). In this model, energy sharing is calculated accounting-based without requiring physical direct lines between members. Members retain their rights as final customers, including the choice of electricity supplier, while the community receives incentives based on the energy shared virtually under the same primary substation.⁴

GSE (Energy System Manager) is in charge of managing the implementation of the RECs registry, defining the management rules (standards, parameters, protocols) to measure the shared energy, acknowledging the incentives provided by the legal framework as well as distributing them, monitoring the evolution of the RECs system and the overall economic impact on the energy system.⁵

The Italian legal and regulatory framework is supportive of energy communities tackling energy poverty, moving beyond simple recognition to active promotion through financial

³ <https://energycommunitiesfacility.eu/sites/default/files/policy-country-fitches/EECF%20country%20fiche%20Italy.pdf>

⁴ <https://energycommunitiesfacility.eu/sites/default/files/policy-country-fitches/EECF%20country%20fiche%20Italy.pdf>

⁵ <https://energycommunitiesfacility.eu/sites/default/files/policy-country-fitches/EECF%20country%20fiche%20Italy.pdf>



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and regulatory instruments. It also encourages broad participation, including from low-income groups. The National Energy and Climate Plan (PNIEC) 2024 (par 3.4.4) explicitly identifies RECs as a tool that can contribute to alleviate energy poverty, for example by providing economic benefits to vulnerable households and consumers living in remote and rural areas.

Supportive measures

At national level

- ✦ **Explicit Social Mandates** - Legislation explicitly states that participation in both RECs and CECs must be open and voluntary for all consumers, including low-income and vulnerable households. Specifically for CECs, local authorities participating in the community are legally required to adopt initiatives that promote the participation of vulnerable households to ensure they access the community's environmental, economic, and social benefits. Furthermore, excess revenues from the premium tariff (beyond 55% of the shared energy quota) must be allocated to social purposes.⁶
- ✦ **Financial Support (PNRR)** - The National Recovery and Resilience Plan (PNRR) originally earmarked €2.2 billion for RECs and collective self-consumption schemes. These funds provided non-repayable grants covering 40% of investment costs. As of 2025, the eligibility threshold for these grants expanded from towns with fewer than 5,000 inhabitants to municipalities with up to 50,000 inhabitants.⁷ In November 2025 a budget cut of €1.4 billion was announced by GSE and the Ministry of Environment.⁸
- ✦ **Tariff Incentives** - RECs benefit from a 20-year premium tariff on shared energy (approx. €110/MWh) plus a refund on grid charges to foster the local and real time self-consumption of renewable electricity. This revenue is paid directly to the community, which can then redistribute the funds to members according to internal rules, potentially subsidising vulnerable households. Furthermore, excess revenues from the premium tariff (beyond 55% of the shared energy quota) must be allocated to social purposes.⁹

At regional level

⁶ <https://energycommunitiesfacility.eu/resources/national-policy-frameworks/italy>

⁷ <https://www.rescoop.eu/policy/financing-tracker/recovery-resilience-funds/italy-recovery-and-resilience-fund>

⁸ <https://incamerawillmedia.substack.com/p/il-taglio-dei-fondi-che-rischia-di>

⁹ “In order to remain eligible for the premium tariff under Measure 1, investments by Renewable Energy Communities must be financed through non-repayable public support (from RRF or other public funds) up to a maximum of 40% of the total eligible costs. Where capital grants are awarded, the premium tariff for shared energy is reduced proportionally to the share of investment costs covered by such grants, in accordance with the applicable rules on the cumulation of State aid.” <https://www.rescoop.eu/policy/financing-tracker/recovery-resilience-funds/italy-recovery-and-resilience-fund>



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Various regions utilise structural funds (ERDF) to support energy communities. For example, Emilia Romagna and Sicily have issued calls that specifically prioritise projects involving vulnerable consumers or allocated funds for feasibility studies and startup costs to reduce the financial burden on communities.¹⁰ In Lombardy (the SOCIALNRG pilot's region), the regional government launched a two-step funding process for RECs, starting with a 2022 call for interest, followed by funding calls in 2024 and early 2025 covering up to 40% of the costs of renewable energy and storage installations on public buildings for RECs. These schemes specifically targeted REC initiatives promoted and coordinated by local administrations. In parallel, since 2021 the Fondazione Cariplo has provided complementary private funding to support REC start-up costs, explicitly promoting the inclusion of vulnerable consumers and allowing cumulation with energy-sharing incentives. However, regulatory delays and uncertainties led the Uniabita cooperative to withdraw its 2022 proposal after more than two years.

Challenges and barriers

Despite the supportive legal architecture, several regulatory and practical barriers hinder the effective setup of energy communities for energy poverty alleviation.

Financial and Structural Barriers

- ✦ **Financing structure** - While the PNRR offers grants, they are often structured as reimbursements. This requires communities to secure upfront capital or bridge financing, which is a significant hurdle for low-income groups or cash-poor municipalities.
- ✦ **Market-Based Financing** - There is a lack of developed market-based financing instruments for RECs, making them heavily reliant on public subsidies which raises concerns about long-term sustainability.
- ✦ **Social Climate Plan** - The Italian Plan demonstrates a clear commitment to addressing energy and transport poverty through targeted investments; however, several shortcomings should be addressed before final approval. Notably, the energy efficiency targets remain modest (at only 30%), the focus on public social housing overlooks many vulnerable tenants and inefficient private homes, investments in heating and cooling are limited, and support for community or cooperative projects is largely absent.¹¹

Administrative and Regulatory Complexity

¹⁰ <https://www.rescoop.eu/policy/financing-tracker/cohesion-regional-development-funds/italy-cohesion-regional-development-funds>

¹¹ <https://www.rescoop.eu/policy/financing-tracker/social-climate-fund/italy-socialclimatefund>



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- ✦ **Bureaucracy** - Registration procedures with the Energy System Manager (GSE) are described as complex and data-heavy. Delays in authorization and grid connections remain a primary bottleneck. Vulnerable communities and social housing providers often lack the technical and administrative resources to navigate these regulations.
- ✦ **Definition Gaps** - Although energy poverty is defined in the national strategy, its practical application remains challenging. There are no standardised national criteria enabling Renewable Energy Communities to easily identify eligible vulnerable households without relying on intrusive income checks. Privacy regulations (GDPR) and limited access to relevant data further complicate the identification process, making the targeted allocation of benefits difficult.

Regional Disparities

There is a marked "two-speed" development. Northern regions (e.g., Lombardy, Piedmont) have the highest concentration of RECs due to stronger administrative capacity and local funding. Southern regions, despite having higher solar potential and higher rates of energy poverty, lag behind due to technical and fiscal constraints, complicating effective absorption of EU resources.

3.2 Belgium (Flanders)

General overview

Flanders has a long-standing and well-established community energy movement, with numerous organisations actively exploring ways to address energy poverty through their activities. The region's regulatory framework recognises the potential of energy communities to alleviate energy poverty and has provided targeted financial and technical support to help develop these initiatives and ensure their accessibility for vulnerable households.

However, budget cuts under the current government risk weakening local energy and climate policies that previously facilitated the development of community energy projects, while instead additional measures are needed to transform these previous efforts into long-term, structural support and to remove persistent regulatory and administrative barriers in order to fully realise energy communities' potential to alleviate energy poverty. This is particularly urgent given the upcoming implementation of ETS2 and the Flemish and federal energy tax shifts,¹² which will significantly increase the cost of fossil fuels for households, potentially deepening existing inequalities and impacting those unable to

¹² <https://www.vrt.be/vrtnws/en/2025/07/07/more-expensive-gas-and-cheaper-electricity-what-will-the-flemis/>



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switch to renewable alternatives. The Flanders National Social Climate Plan has not yet been published.

Supportive measures

At regional level (Flanders)

- ✦ **Local Energy and Climate Pact (LECP)** - The Flemish government partners with municipalities to advance the climate transition while addressing social challenges, including energy poverty. The LECP set targets across greening, energy, mobility, and water, including goals like one tree per resident, collective housing renovations, public charging points, and rainwater collection by 2030. LECP 2.1, established in response to the energy crisis, explicitly added a social dimension, promoting energy sharing and collective support for households unable to invest in renewable energy. Many municipalities have committed to renovations in socially diverse neighbourhoods and increasing opportunities for local energy sharing and community energy participation to reduce energy costs for vulnerable households. Starting January 1, 2027, the LECP will cease to exist, subject to approval by the Flemish Parliament.¹³
- ✦ **Technical Assistance Hubs (TEAH)** - Within the framework of the LECP, the Flemish government has established Technical Assistance Hubs (TEAHs) to support local actors—including municipalities and Public Social Welfare Centres (OCMWs)—in creating energy communities that benefit vulnerable households. These hubs provide guidance on technical, economic, legal, and organisational challenges, aiming to start and scale more energy community activities across Flanders, promote citizen participation in the energy transition, and reduce energy poverty. The future of these hubs is uncertain due to the phase-out of LECP funding, which previously offered municipalities recurrent financial support. Although support was originally planned to continue until 2030, recent budget cuts under the current government put the continuation of these efforts at risk.¹⁴
- ✦ **Energy Houses** - The Energy Houses, another Flemish government initiative, provide citizens with advice, technical support, and financial guidance for energy efficiency, home renovations, and installing solar PV systems. They receive a specific financial incentive (up to €700) for guiding eligible low-income households to join an energy community or install solar PV. Currently, little use is made of this subsidy as the condition of energy sharing is complicated by the high costs currently associated with such activities, thereby limiting its potential as a tool to enhance social impact.
- ✦ **VEKA** - The Flemish Energy and Climate Agency (VEKA) provides technical support and guidance to local authorities and organisations on energy projects, helping align

¹³ <https://www.lokaalklimaatpact.be/uitfasering-lokaal-energie-en-klimaatpact>

¹⁴ <https://www.lokaalklimaatpact.be/>



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initiatives with regional and national objectives. VEKA collaborates with *REScoop.Vlaanderen* to advise on energy sharing and community energy strategies. This is also reflected in the operational objectives of the Flemish Energy and Climate Policy 2024–2029, which aims to investigate the potential of energy sharing and energy communities for vulnerable groups, and – when necessary- to remove regulatory barriers.¹⁵ However, the current government also announced significant budget cuts causing uncertainties for local energy and climate initiatives.

At local level

In Mechelen, initiatives like "[Mechelen Knapt Op](#)" provide financial support and guidance for sustainable home renovations targeting vulnerable residents. The city also offers free energy scans and structural home improvements to help lower energy bills for low-income households. These programs aim to reduce energy poverty and could serve as a foundation for integrating vulnerable households into energy communities.

Challenges and barriers

- ✎ **No Network Tariff Discounts for energy sharing** - A Cost Benefit Analysis conducted for VREG determined that energy sharing, as currently designed, does not reduce the DSO's investment needs. Consequently, energy sharing does not benefit from discounted network tariffs.¹⁶ Since network costs constitute a significant portion of energy bills, the inability to reduce these costs limits the financial relief energy communities performing such activities can offer to energy-poor households.
- ✎ **Verification Gaps** - The lack of ex-ante control by VREG regarding the definition of energy communities creates legal uncertainty and risks the emergence of entities that do not genuinely adhere to the democratic, non-profit principles. This confusion might create distrust among vulnerable households with regards to energy communities and may render local authorities hesitant to collaborate with energy communities.
- ✎ **Financial obstacles** - Implementing social energy programmes often involves costs and is largely dependent on public funding through grants, subsidies, or guarantees. This is no different for energy communities performing such activities. Currently, structural national or regional support is limited, European funding is declining, and municipal budgets are increasingly constrained, making most support ad hoc. There is a pressing need for predictable and transparent financial frameworks that enable collective action, ensure tangible financial benefits for people in energy poverty, and keep risks and costs as low and predictable as possible for all parties involved.

¹⁵ <https://www.vlaanderen.be/publicaties/beleidsnota-2024-2029-energie-en-klimaat>

¹⁶ <https://www.rescoop.eu/policy/transposition-tracker/enabling-frameworks-support-schemes/belgium-flanders>



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- ✎ **No long-term vision** - Policy changes – like the removal of PV subsidies, injection fees, or local grants – with every other legislature discourages investments and complicates risk management. In addition, legislation pays insufficient attention to the complexities of the rental market and multi-family residential buildings.
- ✎ **No definition of energy poverty** - Belgium has no official national or regional legal definition of energy poverty, leading to varied interpretations and measurement approaches. In Flanders, including Mechelen, energy poverty is identified mainly through practical proxies such as “protected customer” status, which grants access to a social energy tariff for vulnerable households. In this context, identification and data management is further complicated by GDPR and cybersecurity requirements. However, the key challenge lies less in defining or selecting beneficiaries than in engaging them, building trust, and providing adequate support—efforts that are most effective when centred around a personal approach and backed by partnerships and sufficient financial resources.

3.3 Slovenia

General overview

Slovenia’s legal framework for energy communities centres around two key legislative acts adopted in 2021: the Act on the Promotion of the Use of Renewable Energy Sources (ZSROVE) and the Act on Electricity Supply (ZOEE). Together, these acts formally define and regulate energy communities as recognised market participants.¹⁷

The legislation distinguishes between two types of energy communities. Renewable Energy Communities (RECs) are defined as non-profit legal entities controlled by members located in the vicinity of the renewable energy project. Citizen Energy Communities (CECs), by contrast, are non-profit cooperatives that may operate nationwide without proximity requirements and are allowed to engage in a broad range of activities, including energy generation, distribution, aggregation, storage, and charging services.¹⁸

As of 2024, the amended Energy Act (EZ-2) introduced a mandatory planning requirement, obliging municipalities with more than 10,000 inhabitants to include plans for establishing at least one renewable energy community in their Local Energy

¹⁷ <https://energycommunitiesfacility.eu/sites/default/files/policy-country-fiches/EECF%20country%20fiche%20Slovenia.pdf>

¹⁸ <https://energycommunitiesfacility.eu/sites/default/files/policy-country-fiches/EECF%20country%20fiche%20Slovenia.pdf>



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Concepts. This provision further embeds energy communities within local energy planning and governance.¹⁹ However, unlike Flanders and Italy, the community energy sector remains underdeveloped in Slovenia, with the first such initiatives only recently being created.

Supportive Measures

Slovenia's legal and policy framework includes several measures that support the development of energy communities and their contribution to energy poverty alleviation.

- ✦ **Legal and Policy Support** - Energy communities are formally recognised as active participants in the energy market and are granted the right to produce, consume, store, and sell energy without discrimination. Their role is further embedded in local governance through the requirement that municipalities with more than 10,000 inhabitants include plans for establishing at least one renewable energy community in their Local Energy Concepts. This obligation strengthens the institutional position of energy communities and encourages their integration into local energy planning.²⁰
- ✦ **Financial Support** - Financial support for energy communities is primarily provided through public grants. Under the 2021–2027 Partnership Agreement, approximately €29.35 million from Cohesion Funds has been allocated to promote local energy communities.²¹ In addition, the draft Social Climate Plan earmarks €9 million to support the participation of vulnerable households in energy communities.²²
- ✦ **Technical and Regulatory Support** - From a technical and regulatory perspective, Distribution System Operators are required to register Renewable Energy Communities and provide the data necessary for billing and electricity sharing free of charge, reducing administrative and financial barriers at the project development stage. Network tariffs are structured so that energy injected into the grid and energy withdrawn from it are accounted for separately, with the aim of ensuring transparent and fair cost allocation. In addition, advisory support is available through the Eco Fund, which operates as a free energy advisory network, and through the “Trajnostna energija” portal, which provides practical information and guidance on the establishment and operation of renewable energy communities.²³
- ✦ **Measures Targeting Energy Poverty** - Slovenia explicitly recognises energy communities as a tool for alleviating energy poverty and has introduced specific

¹⁹ <https://energycommunitiesfacility.eu/sites/default/files/policy-country-fiches/EECF%20country%20fiche%20Slovenia.pdf>

²⁰ <https://energycommunitiesfacility.eu/sites/default/files/policy-country-fiches/EECF%20country%20fiche%20Slovenia.pdf>

²¹ <https://www.rescoop.eu/policy/financing-tracker/cohesion-regional-development-funds/cohesion-regionaldevelopment-2>

²² <https://www.rescoop.eu/policy/financing-tracker/social-climate-fund/slovenia-socialclimatefund>

²³ <https://energycommunitiesfacility.eu/sites/default/files/policy-country-fiches/EECF%20country%20fiche%20Slovenia.pdf>



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measures to ensure that vulnerable households can benefit. Legislation requires that when public authorities invest in solar PV installations of up to 250 kW, a Renewable Energy Community must be established and at least 25% of the annual electricity production must be allocated free of charge to households, with priority given to vulnerable households and residents of multi-apartment buildings.²⁴ The draft Social Climate Plan further supports vulnerable households participating in energy communities through targeted investments in technologies such as heat pumps and biomass district heating.²⁵ At the strategic level, national policy documents emphasise that participation in energy communities should be open to all end-users, including low-income households.

Challenges and Barriers

Despite formal recognition and a supportive policy narrative, several challenges continue to limit the practical development of energy communities and their effectiveness in addressing energy poverty.

✦ **Barriers in Funding and Programme Design** - Recent public funding calls have introduced eligibility criteria that significantly constrain citizen-led energy community initiatives. For instance, a 2025–2029 funding call for solar projects established a minimum capacity threshold of 6 MW for energy communities, a level that is generally unattainable for citizen groups.²⁶ Other calls have imposed restrictive conditions, such as requiring that 80% of generated electricity be supplied to households. Since many energy community projects rely on municipal rooftops or mixed-use buildings, these conditions have proven difficult to meet, resulting in low uptake. Civil society organisations have also raised concerns about the limited transparency of operational programmes and the lack of meaningful opportunities for stakeholder participation in their design.²⁷

✦ **Market and Regulatory Barriers** - The transition to a new net-billing system has created additional uncertainty for energy communities. In response to this regulatory change, several electricity suppliers have stopped signing contracts for collective self-consumption, blocking the implementation of new projects and delaying those already in development.²⁸

²⁴ <https://energycommunitiesfacility.eu/sites/default/files/policy-country-fiches/EECF%20country%20fiche%20Slovenia.pdf>

²⁵ <https://www.rescoop.eu/policy/financing-tracker/social-climate-fund/slovenia-socialclimatefund>

²⁶ <https://www.rescoop.eu/policy/financing-tracker/cohesion-regional-development-funds/cohesion-regionaldevelopment-2>

²⁷ <https://www.rescoop.eu/policy/financing-tracker/cohesion-regional-development-funds/cohesion-regionaldevelopment-2>

²⁸ <https://www.rescoop.eu/policy/financing-tracker/cohesion-regional-development-funds/cohesion-regionaldevelopment-2>



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✎ **Limitations in Addressing Energy Poverty** - Although energy communities are recognised as a mechanism to support vulnerable households in strategic documents, the overall scale of support and funding allocated to them remains limited relative to the extent of energy poverty in Slovenia.²⁹ In the draft Social Climate Plan, for example, there are currently no effective mechanisms to ensure that the benefits of energy investments, particularly those made by landlords or public authorities, are passed on to vulnerable tenants in the form of lower energy bills.³⁰ As a result, vulnerable households may remain insufficiently protected, despite being formally prioritised in policy objectives.

²⁹ <https://www.rescoop.eu/policy/financing-tracker/cohesion-regional-development-funds/cohesion-regionaldevelopment-2>

³⁰ <https://www.rescoop.eu/policy/financing-tracker/social-climate-fund/slovenia-socialclimatefund>



4 Implementation phase

4.1 Methodological framework

4.1.1 The 4 Stages of Energy Community projects

The methodological framework of the SOCIALNRG blueprints is based on the standardised, four-staged framework for community energy development as put forward by the [Energy Community Platform](#), an online one-stop-shop gathering tools, resources, best practices and expert networks to support citizens and their partners in developing and managing community energy projects across Europe.

By using this methodology, we aim to ensure that the resulting blueprints are easily recognised, searchable, integrated in the Energy Community Platform (and other capacity building efforts) and applicable to other communities across Europe within and beyond the SOCIALNRG project. As already discussed, there are approximately 20 million social and public housing units in the EU today, in addition to several million cooperative housing structures, many of which cater for lower-income households and tenants. As such, and as will be developed in the second half of the SOCIALNRG project, replication and transferability of the approach outlined in these blueprints is paramount to the success of the project.

The four stages of community energy development are the following:

- ✦ **Inspiration:** This initial phase involves a core group of people shaping an idea and vision for a community energy project. It focuses on brainstorming how a project could work and results in a "starting document" that outlines the initial scope and goals.
- ✦ **Preparation:** During this stage, the core group professionalises the initiative. Activities include drafting business cases, analysing regulations, obtaining necessary permits, and securing financial commitments. This phase concludes with a finalised investment and organisation plan.
- ✦ **Implementation:** The project becomes a reality as it is formally launched. This stage involves the professional design and actual construction or rollout of the energy solution. It ends with the community officially taking over the project.
- ✦ **Operation:** An operational community maintains its energy activities while looking for ways to improve. This includes long-term maintenance, monitoring energy production or savings, and potentially expanding the project's scope.

To further structure the blueprints in line with established and widely applied methodologies, we drew inspiration from the Horizon 2020 project [SCCALE 20-30-50](#), which further elaborated the four-stage framework by introducing milestones, activities,



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and workflows for each stage. For these draft SOCIALNRG blueprints, we adopted the specific workflows proposed by the SCCALE methodology and the subdivision into activities, yet adapted the latter to fit to specific pilot contexts. While the four stages and workflows provide an overall structure, the activities within them must remain flexible enough to reflect the specific objectives of each energy community and the distinct socio-economic characteristics of a neighbourhood. Moreover, these elements are, by the SCCALE project itself, not intended as a fixed structure, but rather as guiding references.

Letter Code	Workflows
A	<i>Engagement and communication</i>
B	<i>Technology and business case</i>
C	<i>Partners and Authorities</i>
D	<i>Organisation and financing</i>

Pilot partners were first introduced to the four-stage blueprint structure during the Project Meeting in Milan in October 2025. Following an overview of each stage—including possible activities, adaptations to the specific SOCIALNRG pilot context, and potential challenges (along with possible solutions) that partners might encounter at each development stage—pilots were able to begin brainstorming how to translate their work into this structure. After the project meeting, partners continued this work in more detail online, which resulted in the following draft pilot blueprints.

4.2 Italian pilot – Cinisello Balsamo

4.2.1 Stage 1 - Inspiration

Activity code	Title	Description	Status
A 1.1	Training Activity and Awareness Raising	Organizing training sessions and awareness-raising events for UniAbita tenants on energy efficiency, REC concepts, and benefits.	Completed
B 1.1	First Feasibility Study in All UniAbita Buildings	Conducting a full feasibility study to evaluate surfaces, electrical configurations, consumption patterns, and potential REC clusters.	Completed

During the inspiration phase, activities mainly focused on the initial engagement of residents and on building a foundation of trust, which is particularly critical in contexts affected by energy poverty. The main barriers identified relate to the **low level of awareness of energy communities**, mistrust towards new collective models, and the



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limited time and resources available to the households involved. These challenges are compounded by fragmented information flows between social, technical, and institutional actors. The proposed solutions emphasize simple and targeted communication actions, listening and co-creation activities, and the involvement of trusted intermediary organizations (such as associations, social cooperatives, and housing providers) that can act as bridges between residents and the project.

4.2.2 Stage 2 – Preparation

Activity code	Title	Description	Status
D 1.1	Scenario Analysis on UniAbita's Role in the REC	Drafting governance and operational scenarios assessing UniAbita's potential roles within the REC.	Completed
A 1.2	Cooperative Housing Co-Creation Pathway	Helped residents situate the REC proposal within long-term trends such as collective management, energy transition, and community welfare.	Completed
A 1.3	Call to Action for Prosumers and New Investors	Launching an outreach campaign targeting tenants and small businesses to identify new installation sites and prosumers.	Ongoing
D 1.2	Scenario Analysis for Financing Opportunities	Assessing financing models for REC projects, including cooperative funds, third-party investments, ESCo models, and microcredit.	Planned
A 1.4	Developing a Shared Community Vision and Mission	Facilitating workshops to co-create a shared REC vision and mission aligned with residents' values and needs.	Planned
D 1.3	Integrating the Cinisello Configuration into COESOL (Umbrella REC)	Analysing the integration of UniAbita–Cinisello into COESOL REC, including legal alignment and governance adaptation.	Tentative
A 1.5	Engaging Young People and Vulnerable Households	Organizing targeted social activities to involve young residents and vulnerable families, reducing participation barriers.	Tentative



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The *preparation* phase highlighted barriers of an organisational, technical, and regulatory nature. On the one hand, there is the complexity of aligning governance structures, technological choices, and the economic sustainability of the REC; on the other, the difficulty of coordinating a wide range of stakeholders (local authorities, grid operators, technical partners, and financial actors) within a regulatory framework that is still evolving. The identified solutions are based on a clear definition of roles and responsibilities, progressive technical and economic feasibility studies, and the adoption of flexible organisational models capable of adapting to local specificities. Continuous dialogue with the competent authorities is a key enabling factor to anticipate authorisation issues and reduce the risk of delays.

4.2.3 Stage 3 – Implementation

Activity code	Title	Description	Status
B 1.2	Installation of the First Community Plant (PV System)	Coordinating procurement, permitting, and installation of a REC PV plant enabling energy sharing.	Tentative
C 1.1	Final Decision on REC Legal Form	Supporting the decision process on the final REC structure ensuring alignment with technical and governance requirements.	Planned
D 1.4	Registration of the REC at GSE	Preparing and submitting the full GSE registration package for official REC recognition and incentive eligibility.	Planned

In the *implementation* phase, the main critical issues concern the actual roll-out of solutions: construction timelines, coordination between technical works and social dynamics, and the management of expectations among community members. Additional barriers relate to long-term operational and financial capacity, especially to ensure inclusiveness and continuity of benefits for vulnerable households. The proposed solutions include modular planning of interventions, continuous accompaniment of community members, and the integration of monitoring and management support tools. In this perspective, implementation is not treated as a purely technical phase, but as an ongoing social and organisational process.

4.2.4 Stage 4 – Operation

Not applicable



4.2.5 Planned Timeline

Activity	M1	M3	M6	M9	M12	M15	M18	M21	M24	M27	M30	M33	M36
A1.1													
B1.1													
D1.1													
A1.2													
A1.3													
D1.2													
A1.4													
D1.3													
A1.5													
B1.2													
C1.1													
D1.4													

The timeline planned by the Italian pilot reflects a deliberately phased approach, in which early activities prioritise community engagement, awareness raising, and internal alignment before moving towards formalisation and technical implementation. Initial actions such as **“Training Activity and Awareness Raising” (A – engagement and communication)** and **“Cooperative Housing Co-Creation Pathway” (A)** focus on building trust, shared understanding, and participation capacity among residents. In parallel, preparatory technical work is initiated through **“First Feasibility Study in All UniAbita Buildings” (B – technology)**, providing an initial evidence base without committing to irreversible investment decisions.

The central and later stages of the timeline concentrate on organisational clarity, financial structuring, and progressive implementation. Activities such as **“Scenario Analysis on UniAbita’s Role in the REC” (D – organisation and financing)**, **“Scenario Analysis for Financing Opportunities” (D)** and **“Developing a Shared Community Vision and Mission” (A)** aim to consolidate governance and economic sustainability before infrastructure deployment. Technical and institutional steps follow with **“Installation of the First Community Plant” (B – technology)**, **“Final Decision on REC Legal Form” (D)** and **“Official Registration of the REC at GSE” (C – partners and authorities)**.

4.2.6 Conclusions

Overall, the activity scheme of the Italian pilot shows a clear imbalance across the identified workflows. A significantly higher number of activities fall under **engagement and communication (A)**, while fewer activities are currently associated with **technology (B)** and **partners and authorities (C)**. This imbalance reflects the **embryonic stage of**



the project, in which priority is given to creating solid roots within the local community, building trust, and fostering active participation. At the same time, considerable effort is being devoted to **defining a clear governance structure and organisational set-up**, as well as to identifying the most suitable **financing mechanisms (D)** for the implementation of the energy infrastructure. Rather than representing a weakness, this distribution highlights a strategic choice: consolidating the social, organisational, and financial foundations that are necessary to enable a robust and scalable technological implementation in later phases.

4.2.7 Resource requirements

The implementation of the Italian pilot requires a balanced combination of economic and human resources, reflecting the social, organisational, and technical dimensions of the project. From a human resources perspective, the pilot depends on a multidisciplinary set of competences. This includes **community facilitators and social workers** to support engagement, trust-building, and co-creation with residents; **project managers and cooperative housing experts** to coordinate activities and align them with existing organisational structures; **technical professionals and installers** to carry out feasibility assessments and deploy photovoltaic systems; as well as **legal, regulatory, and financial advisors** to define governance arrangements, contractual frameworks, and financing solutions. The strong presence of facilitation and coordination roles reflects the importance of accompanying vulnerable households throughout the process and ensuring their effective participation.

From an economic perspective, resources are required both for so-called “soft” activities and for capital-intensive investments. Operational budgets are needed to cover facilitation processes, communication and training materials, coordination efforts, and external advisory services, while dedicated financial resources are necessary for technical studies, procurement, and the installation of the first community-scale energy plants. Given the early-stage nature of the pilot, particular emphasis is placed on identifying appropriate financing mechanisms and risk-sharing arrangements that enable infrastructure investment without undermining the project’s social objectives. Overall, resources are allocated in a progressive manner, with an initial focus on engagement and organisational set-up, followed by increasing investment in technical implementation once solid social, governance, and financial foundations have been established.



4.3 Slovenian pilot - Ravne na Koroškem

4.3.1 Stage 1 - Inspiration

Activity code	Title	Description	Status
A1.1	Transfer of community needs and experience from previous energy renovation projects in the building.	The pilot in Ravne na Koroškem was already implementing an energy renovation of the building, co-financed by the EU through the <u>INFINITE</u> project. Engagement with the housing community through qualitative ethnography-inspired approaches was part of that project already, recording community needs and perspectives. These insights were inspired the preparation stage of SOCIALNRG project in the Slovenian pilot, indirectly inspiring the ongoing REC establishment process.	Completed
A1.2	Identifying community needs.	Conduct interviews, focus groups and workshops to discuss challenges and needs facing tenants in their living environment <i>with a focus on identifying needs related to energy use.</i>	Completed
A1.3	Awareness raising and training.	Community gatherings & trainings to raise awareness on efficient energy use and energy communities among the tenants.	Planned
A1.4	Smaller-scale investment to address immediate needs of the community.	Addressing needs voiced in the co-creation activities, prioritizing those that are (in)directly related to energy use and the wider scope of energy poverty issues, in case of Ravne this is securing a new bike storage space and creating a new communal washing & drying room.	Ongoing ³¹
B1.1	Understanding potential energy solutions to	Based on expert consultation and examples of good practices from other comparable buildings, STAN explored and	Completed

³¹ New bicycle infrastructure completed, communal space in the planning stage.



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	existing energy challenges of the building	learned about potential solutions to address excessive heating costs for the building.	
D1.1	Understanding different possible financial and organisational models of energy communities and PV investments in multi-apartment buildings.	With internal expert knowledge and through consultations with external partners, STAN built understanding of potential financial and organisational models of energy communities and PV investments in multi-apartment buildings (community self-consumption, renewable energy community, citizen's energy community).	Completed

In the *inspiration* phase, activities focus on identifying needs, trust-building, analysing possible models of EC and PV investments in multi-apartment buildings, as well as awareness raising among residents of the affordable housing building in Ravne na Koroškem, where no energy community currently exists.

Key barriers include **limited familiarity with energy communities**, low levels of energy literacy, related also to technical limitations of the building (no individual energy use meters, utility costs bundled in the overall monthly rent price) and a general lack of confidence in engaging with technical and organisational processes related to the energy transition. These challenges are reinforced by the socio-economic vulnerability of many residents, by the high fluctuation of the resident structure, and by the novelty of the energy community concept in the Slovenian context. The proposed solutions emphasise strengthening community practises among tenants, targeted training and awareness-raising activities, continuous facilitation, and the involvement of trusted local actors—particularly the housing manager and local institutions—to progressively build residents' readiness and willingness to participate.

4.3.2 Stage 2 – Preparation

Activity code	Title	Description	Status
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A2.1	Decision to establish a REC as an independent legal entity.	Developing a REC as an independent legal entity is currently not feasible in the Slovenian pilot.	Tentative
A2.2	Co-creation of a shared vision and rules of engagement for new community practises.	Organize workshops and meetings with tenants to define the vision and specific rules related to new communal practises among the tenants. In our case this is the vision and rules of the use of a new communal space (laundry and drying room) or other types of communal engagements and solutions based on voiced community needs.	Planned
A 2.3	Co-creation of a shared vision and rules of engagement for an inclusive governance structure in the building.	Organize workshops and meetings with tenants to define the vision and specific rules related to roles and responsibilities of a new representative body of the tenants.	Planned
B2.1	Decision on technical solutions for energy challenges specific to the building.	STAN decided to install PV panels on the roof to cover a larger portion of the electricity consumption to complement the ongoing building renovation efforts. The ongoing renovation includes installation of a heat pump that is planned to cover a significant portion of heating needs of the building, which diminishes the building's dependence on the otherwise costly district heating at Ravne. The panels that were installed in SOCIALNRG project are additionally beneficial as they cover the building's increased dependence on electricity due to the heat pump installation. Based on the technical context and community readiness level the decision	Completed



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		on the form of energy community is made. There are three possible scenarios: forming a renewable energy community (REC) or citizens energy community (CEC) or opting for collective self-consumption. The latter was the appropriate form in our case.	
D2.1	Decision on financing the PV investment.	STAN proactively decided to scale up installation of PV foreseen in the ongoing retrofitting project and finance the investment with a combination of own funds and subsidy for collective self-consumption investments. Investment in solar PV was implemented by end of 2024 to fall within within the net-metering self-consumption scheme that existed until the end of 2024 (condition is installed PV array connected to the grid). The overall investment decision is also linked to the ongoing retrofitting project within INFINITE project.	Completed
D2.2	Decision on a specific energy community model.	Based on the technical context and community readiness level the decision on the form of energy community is made. The most suitable form the PV investment can take in the case of Ravne is collective self-consumption.	Completed
D2.3	Apply for and acquire financial support for the PV investment.	The SI case proceeded in two phases or separate elements. First, a subsidy for installation of solar PV was successfully submitted and approved by the national energy authority (Borzen). Second, EU co-financing was obtained to pursue establishment of a solar self-consumption scheme- in our case, SOCIALNRG.	Completed



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D2.4	Apply for funding (e.g. through Social climate fund) for inclusion of energy poor households in the energy community.	Slovenian Social Climate Fund will offer financial support to include vulnerable citizens in the energy community projects. Although SCF funding is currently not relevant for the case of Ravne, since REC and CEC are currently not viable options, this can change, if an energy community as a separate legal entity would be formed.	Tentative
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The *preparation* phase for the Slovenian pilot is characterised by the need to create the basic enabling conditions for a future energy community. Major barriers relate to **regulatory uncertainty**, the absence of established governance models for energy communities in social or affordable housing, the technical limitations of the building in terms of enabling energy community models, and the complexity of defining viable organisational and financial structures from scratch. In response, the planned activities focus on assessing the national legal framework, exploring funding opportunities, and co-developing a suitable energy community model together with residents and key stakeholders. Technical feasibility assessments and conceptual design activities are combined with participatory processes to ensure that organisational choices remain aligned with residents' needs and capacities. Close collaboration with local authorities and sector experts helps reduce uncertainty and supports informed decision-making.

4.3.3 Stage 3 – Implementation

Activity code	Title	Description	Status
A3.1	New benefits, services and community practices are created.	New community practice is established; in the case of Ravne this means (potentially) the communal drying and laundry room (equipment bought, ventilation upgraded and all other works finished).	Planned
A3.2	Tenant 's representative body established.	The roles and responsibilities of the representative body are formalized (in rental contracts or in other suitable form).	Tentative



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A3.3	Upgrade energy community: legal entity established.	Upgrade energy community from collective self-consumption model to REC or CEC.	Tentative
B3.1	Investment in PV executed; technology installed and functioning.	STAN ordered a technical project with an external provider. Based on the technical project STAN issued a tender for realisation. Based on the response, STAN chose the most appropriate offer/contractor. PV installation was standard and without major complications - the contractor installed the PV in approximately two weeks.	Completed

In the *implementation* phase, the main challenges concern translating preparatory work into concrete technical and organisational outcomes. Barriers include the coordination of technical solutions with ongoing building renovation processes, limited operational experience with community energy initiatives, and the need to ensure long-term manageability of the system. The identified solutions include a step-by-step and modular approach to implementation, gradual introduction of renewable energy technologies, and continuous support for residents during early operational stages. Implementation is therefore conceived not as a single deployment moment, but as a learning-oriented process that strengthens both technical performance and community capacity over time. Since membership-based EC that function as a separate legal entity were not a viable option in the case of Ravne and to strengthen community readiness-level, the implementation phase focuses on establishing new community practises (communal space) and an inclusive governance structure.

4.3.4 Stage 4 – Operation

Activity code	Title	Description	Status
A4.1	Energy community as a separate legal entity established and functioning successfully.	An energy community as a separate legal entity functions, tenants as members are involved in the management and decision making of the community.	Tentative



D3.3 BLUEPRINTS FOR PILOT COMMUNITIES (DRAFT FOR PILOT DEPLOYMENT)

B4.1	Monitoring and analysis of financial and technological impact.	At the end of the 1st year of operation, STAN will review the data to assess how successfully the project is delivering the expected results from the technical and financial standpoint. Such review will be repeated periodically every year.	Planned
C4.1	Replication of the project on other locations.	Experiences from the project are disseminated and replicated in other locations in the region (and/or nationally). Also, partnership between STAN and their partners continues in new projects.	Tentative
D4.1	Distributing monetized/financial benefits among the housing community/developing REC community.	The details on the financial benefits are defined (how long there will be no rent increases and under which conditions) as well as details on other community services that will be available to tenants and under what conditions.	Planned

Unlike the Italian pilot, the Slovenian representatives included explicit activities in the *operation* phase; however, these activities should be understood as **planned or tentative**, rather than already implemented. Their presence in the timeline reflects an effort to anticipate long-term operational needs, even though the energy community has not yet been established. This highlights a common and expected challenge for early-stage initiatives: the difficulty of fully envisioning governance, roles, and management arrangements far into the future when many foundational elements are still under development.

The main barriers anticipated at this stage relate to **limited operational experience**, uncertainty around long-term responsibilities, and the risk of declining engagement once initial project activities are completed. The proposed responses therefore focus on maintaining flexibility, planning for continuous capacity building, and embedding monitoring and feedback mechanisms that can be adapted over time. By framing the operation phase as exploratory and forward-looking, the pilot acknowledges these uncertainties while laying the groundwork for a more stable and resilient operational model as the energy community matures.



4.3.5 Planned Timeline

Activity	M1	M3	M6	M9	M12	M15	M18	M21	M24	M27	M30	M33	M36
A1.1													
A1.2													
A1.3													
A1.4													
B1.1													
D1.1													
A2.1													
A2.2													
A 2.3													
B2.1													
C2.1													
D2.1													
D2.2													
D2.3													
D2.4													
A3.1													
A3.2													
A3.3													
B3.1													
A4.1													
B4.1													
C4.1													
D4.1													

4.3.6 Conclusions

The timeline and planning of the pilot project in Ravne have been heavily influenced by the contemporary national energy policy landscape, in particular the net-metering scheme that enabled the establishment of the first working models for energy communities, i.e. collective self-consumption. Based on the scheme, collective-self consumption was estimated as the most feasible form of “energy community” in the case of Ravne. The fact that this national scheme ended at the end of 2024 (M3)³², the plans

³² For a short explanation by the Ministry of the Environment, Climate and Energy of the Republic of Slovenia regarding the scheme and its termination, see:



D3.3 BLUEPRINTS FOR PILOT COMMUNITIES (DRAFT FOR PILOT DEPLOYMENT)

and the investment into the PV power plant had to be executed by the end of 2024. It is important to stress that the end of the net-metering scheme represents a significant change in the national energy policy landscape.

Until the end of 2024 a net-metering system was in place that was based on the annual accounting for the electricity produced and consumed by the solar power plant used for self-consumption (the balance between energy produced and energy consumed was accounted for on a yearly basis), enabling planning for PV investments that correspond to the overall energy consumption and making these investments financially attractive. Currently there is in place a 15 min net-metering scheme making these types of investments less financially attractive.

Energy suppliers have been more hesitant to sign contracts with self-suppliers under the new regulation. It renders the installation of PV for collective self-consumption *significantly* less interesting considering possible financial benefits, making the exact replication of the blueprint used in the Slovenian pilot both unfeasible and unlikely. Due to the expected shift in the policy landscape, the investment in our pilot preceded most other phases related to the inspiration and preparation phase. Considering the frame of collective self-consumption and low-readiness level of the residents, a significant part of the inspiration and preparation activities are devoted to strengthening community ties and build capacity of residents to (self-)govern community practices, thereby increasing the readiness level of residents to join or form an energy community as a separate legal entity.

4.3.7 Resource requirements

- ✎ The implementation of the Slovenian pilot requires a combination of economic and human resources tailored to a context where the energy community model is still emerging - currently the pilot fits the collective self-consumption model. Based on the *Regulation on self-consumption of electricity from renewable energy sources collective self-consumption in case of multiapartment buildings* “connects consumers who consume electricity for their own needs through two or more take-over points of the same multi-apartment building and who may also include one or more take-over points in self-consumption through which the common areas or common devices of the multi-apartment building are supplied with electricity (hereinafter referred to as: shared take-over points) or who include two or more shared take-over points in self-consumption may be connected to the self-consumption system of a multi-apartment

<https://www.gov.si/novice/2024-04-17-obvestilo-investitorjem-glede-rokov-za-vkljucitev-v-sistem-samooskrbe-z-letnim-netiranjem/> [Last visited: 20. 01. 2026]



D3.3 BLUEPRINTS FOR PILOT COMMUNITIES (DRAFT FOR PILOT DEPLOYMENT)

building.” (Item 1 of Article 5 of the Regulation). The pilot building in Ravne has two take over points and fits the collective self-consumption model (individual apartments do not have separate energy meters and are not separate take over points).

From a human resources perspective, the pilot relies on **community facilitators and trainers** to support awareness raising, capacity building, and participatory processes with residents; **project coordinators and housing management experts** to align the pilot with the operational realities of the building; **technical experts and installers** to assess technical feasibility and implement renewable energy solutions; and **legal and financial advisors** to navigate regulatory uncertainty and design appropriate governance and financing structures. The strong emphasis on facilitation and advisory roles reflects the need to accompany both residents and institutional actors through a learning-intensive process.

From an economic perspective, resources are required to support preparatory and implementation activities that relate to community building and empowerment, while majority of investment costs have already been covered. Operational budgets are needed for engagement activities, training sessions, coordination, and external expertise, while minor financial resources are foreseen as necessary for finalisation of technical and feasibility studies and the deployment of renewable energy technologies. Given the absence of a pre-existing energy community, particular attention is paid to identifying suitable funding mechanisms and risk-sharing arrangements that can support initial investments while remaining compatible with the affordability constraints of vulnerable households. Overall, resource allocation follows an ex-post logic, where the major part of technical investments has already been made, and current efforts focus on consolidating benefits through social and organisational capacity building under established governance and financing conditions.



4.4 Belgium - Mechelen

4.4.1 Stage 1 - Inspiration

Activity code	Title	Description	Status
A1.1	Core Team - communicate & engage	Form core team with Woonland, Klimaan, municipality + X resident ambassadors; Include tenant + private-owner (incl. elderly) representation; maintain decision log (what is fixed vs open for co-design).	Ongoing
A1.2	Energy Poverty Diagnosis	Baseline mapping: energy use, comfort, vulnerability, building state; Segment baseline by tenure (Woonland tenants vs private owners) and vulnerability; include comfort/health aspects.	Completed
C1.3	Stakeholder Mapping	Map grid operator, NGOs, social services, volunteer groups; Include DSO/heat planning contacts, permitting bodies, social services and neighborhood organizations; map decision rights and dependencies.	Ongoing
A1.4	Awareness Campaign	Door-to-door, workshops, flyers, local ambassadors; Differentiated communication: tenants (affordability/comfort) vs owners (works impact, home value, admin support); strong offline track for elderly.	Ongoing
D1.5	Starting Document	Shared document outlining vision, scope, roles, early assumptions, and decision rules; Define scope, roles, benefits, and explicit 'choice map' for residents (what can/cannot be decided) across tenants/owners.	Tentative

In the *inspiration* phase, activities in the Belgian pilot build upon an already relatively mature context in terms of awareness of energy communities and collective energy



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solutions. The main barriers at this stage are less related to basic understanding and more to **ensuring inclusiveness**, particularly the meaningful involvement of vulnerable households in decision-making processes. Additional challenges concern overcoming participation fatigue and ensuring that engagement activities reach residents who are typically underrepresented. The proposed solutions therefore focus on targeted and inclusive engagement strategies, tailored communication formats, and participatory tools designed to lower entry barriers and strengthen residents' sense of ownership over the project.

4.4.2 Stage 2 – Preparation

Activity code	Title	Description	Status
B2.1	Feasibility Study	Technical, financial and social feasibility (solar + heat + retrofit); Include connection scenarios for mixed tenure (opt-in mechanisms where applicable; owner-specific works inside dwelling) and phasing to reduce disruption.	Ongoing
A2.2	LAB meeting 2	Conversing with stakeholder organisations; Formulate LAB outputs to refine engagement approach for mixed tenure and to validate decision-rights assumptions for heat network governance.	Completed
D2.3	Business Model	Model solidarity tariff, cooperative capital, FS3/FS4; Define differentiated value proposition: tenants (stable affordable heat/comfort) vs owners (participation options, admin support, property value/comfort).	Ongoing
D2.4	Legal Model	CEC/REC cooperative (TBD) + SPV for assets & risk; Add roles/responsibilities/benefits matrix (Woonland/Klimaan/residents: tenants & owners) + decision-rights analysis; identify legal obstacles per	Planned



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		role. IMPORTANT: REC vs. CEC & implications	
C2.5	D&E Alignment	Aligning Design & Engineering in different building phases	Planned
A2.6	Co-design Workshops	Workshops with residents on design & governance; Run separate or tailored sessions for tenants vs elderly owners; co-design (ex. service levels, phasing of works, tariff principles and grievance mechanisms.)	Planned
D2.7	Pre-Governance	Temporary "Energy Committee"; Design representation model for mixed tenure (e.g., reserved seats/quotas or rules for tenant + owner voice). Where does the vision and leadership originate?	Tentative
C2.8	F5D - Systemic subsidy – heat network barriers (BE pilot specific)	Obtain a strategic subsidy (Helios foundation) to research and address systemic barriers to heat networks (technical standards, regulatory constraints, business model risks, stakeholder governance, grid integration). Outputs feed into feasibility and legal model. Systemic subsidy focuses on heat-network barriers (regulatory/tariff/connection/roles); use pilot as testbed; produce reusable toolkit.	Planned
C2.9	Permitting + Feasibility study OK	Obtain permits (buildings, but also heat net) and formal decision (financial close) to go forward with implementation plan; Permitting path includes stakeholder pre-consultation; explicit resident communication plan for works and disruption.	Planned



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During the *preparation* phase, the Belgian pilot faces challenges linked to **coordination and integration** rather than initial feasibility. Barriers include aligning the energy community model with ongoing or planned renovation processes, coordinating multiple professional actors, and ensuring that governance arrangements remain transparent and accessible despite organisational complexity. The planned solutions rely on clear role definition, structured collaboration between housing providers, energy community actors, and local authorities, and iterative refinement of governance and business models. Compared to other pilots, preparation activities in Mechelen focus more on optimisation and alignment than on creation from scratch.

4.4.3 Stage 3 – Implementation

Activity code	Title	Description	Status
B3.1	Neighborhood renovations	Alignment of physical retrofit works with heat network implementation plan; Coordinate renovations with heat network readiness; special support for elderly owners during in-home works (planning, paperwork, care).	Tentative
D3.2	Energy community Creation	Register cooperative (TBD), adopt bylaws, voting; Energy community setup includes low-barrier membership for tenants and clear participation options for owners (share/bond/user-only).	Tentative
D3.3	SPV Setup	SPV for infrastructure finance & contracts	Planned
D3.4	Financing Mix	FS3/FS4 + cooperative shares + grants	Planned
D3.5	Procurement	Tender installers & engineering; Procurement includes service-level requirements (resident support, hotline), and a dual contracting approach (Woonland units vs. private owners).	Tentative



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B3.6	Deployment	Install PV, heat network, retrofit; Deploy in phases; coordinate street works with resident needs; owner-specific in-home installations planned with extra care/support.	Tentative
B3.7	GDPR & Data	Smart metering + privacy; Provide one-page data explanation (what/why/who/retention); consent process adapted for low digital literacy.	Tentative
A3.8	Member Onboarding	Onboard residents to EC; Onboarding includes customer journey: tariff explanation, complaint process, service contact points; offline support for elderly owners/tenants.	Tentative

In the *implementation* phase, barriers mainly concern operational complexity, timing, and the need to manage expectations among residents during technical roll-out. Challenges include synchronising construction works with community processes, ensuring continuity of engagement, and safeguarding affordability during implementation. The proposed solutions emphasise phased implementation, close coordination between technical and social teams, and continuous communication with residents. Implementation is thus treated as a socio-technical process, where technical deployment and community dynamics are addressed simultaneously.

4.4.4 Stage 4 – Operation

Activity code	Title	Description	Status
D4.1	Governance	Annual GA, elected board, reporting; Governance includes transparent reporting and decision-rights clarity for tariffs, service levels and reinvestment; mixed-tenure representation safeguarded.	Tentative
A4.2	Resident Training	Training & capacity-building; Training tailored: (1) general user support, (2) governance roles, (3)	Ongoing



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		digital inclusion; specific sessions for elderly owners.	
B4.3	Maintenance	Service contracts; Maintenance includes clear SLAs and escalation route; resident-facing support channel.	Tentative
B4.4	Monitoring	Energy + social KPIs; Monitor outcomes split by tenure (tenants vs owners): affordability, comfort, participation, satisfaction; publish results.	Tentative
C4.5	Replication	Toolkit + knowledge transfer; Replication package includes mixed-tenure engagement model, decision-rights matrix, and dual contracting approach lessons.	Tentative

The Belgian pilot also includes activities in the *operation* phase; however, these should be understood as **tentative or forward-looking**, rather than fully consolidated operational practices. Although Mechelen benefits from prior experience with energy communities, long-term operation still presents challenges related to governance stability, sustained engagement, and adaptive management. Anticipated barriers include maintaining resident participation over time, managing evolving technical systems, and balancing professional management with community ownership.

The proposed approach to the operation phase emphasises continuous monitoring, feedback loops, and incremental capacity building for both residents and managing organisations. By explicitly including operation-related activities in the blueprint, the pilot acknowledges the importance of long-term sustainability, while also recognising that operational arrangements will need to evolve through practice and learning. This forward-looking perspective supports resilience and replicability without assuming full certainty at an early stage.

4.4.5 Planned Timeline

Activity	M1	M3	M6	M9	M12	M15	M18	M21	M24	M27	M30	M33	M36	A*
A1.1														
A1.2														



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C1.3	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow								
A1.4		Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
D1.5							Red							
B2.1						Yellow	Yellow							
A2.2						Green								
D2.3						Yellow	Yellow							
D2.4						Orange	Orange	Orange						
C2.5							Orange	Orange						
A2.6								Orange	Orange	Orange				
D2.7								Red	Red	Red				
C2.8							Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
C2.9								Orange	Orange					
B3.1									Red	Red	Red	Red		
D3.2											Red	Red	Red	
D3.3											Orange	Orange		
D3.4								Orange	Orange	Orange				
D3.5									Red	Red	Red			
B3.6											Red	Red	Red	Red
B3.7													Red	
A3.8														Red
D4.1													Red	Red
A4.2			Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
B4.3												Red	Red	Red
B4.4												Red	Red	Red
C4.5												Red	Red	Red

The planned timeline for the Belgian pilot is summarized in the table above. Each activity line is colour-coded according to its Current Activity Status (Completed, Ongoing, Planned, Tentative).

Legend: Completed (green), Ongoing (yellow), Planned (orange), Tentative (red).

*Column head "A"= After project end

4.4.6 Conclusions

Overall, the Belgian pilot blueprint shows a strong emphasis on implementation readiness and preparatory coordination, reflecting the fact that the district heating project is embedded in a broader neighbourhood renovation context. Early-stage activities focus



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on consolidating a core partnership (Woonland, Klimaan, and the municipality), establishing a shared baseline on energy poverty and building conditions, and strengthening stakeholder alignment.

In the preparation phase, the activity set prioritises feasibility as well as business and legal modelling, complemented by structured co-design formats that aim to progressively increase resident involvement beyond one-way information. Implementation and operation activities are organised as stage-gated decision pathways and are therefore contingent on permitting, renovation sequencing, and stakeholder commitments, including key choices on legal form, SPV and financing mix, procurement route, and a workable resident membership pathway.

Given the mixed-tenure setting (Woonland tenants and private owners, including elderly households), the blueprint explicitly separates engagement and support tracks while maintaining a shared governance ambition as a longer-term objective, to be pursued in a realistic and inclusive manner as project conditions allow.

4.4.7 Resource requirements

The Belgian pilot requires a combination of human and economic resources that reflects its higher level of maturity and implementation readiness. Human resources include **community engagement professionals and social facilitators** to ensure inclusive participation, **project managers and coordinators** to align multiple workstreams, **technical experts and installers** to manage the deployment of renewable energy systems and renovation-related measures, and **legal and financial specialists** to oversee contracts, compliance, and financial sustainability. Compared to the other pilots, a larger share of technical and operational expertise is mobilised earlier in the process.

From an economic perspective, resources are needed both for engagement and coordination activities and for significant capital investments related to renovation and energy infrastructure. Budgets must cover technical studies, procurement, installation works, and monitoring systems, alongside ongoing costs for facilitation and communication. Given the scale and complexity of the interventions, particular attention is paid to cost control, efficiency, and the long-term affordability of energy services for residents. Resource allocation therefore supports a transition from preparation to full implementation while maintaining strong social safeguards.



5 Best practices and EU references

Extensive work to map existing and emerging practices and models for the development of renewable energy communities addressing energy poverty—both within and beyond a social housing context—has been carried out under [Deliverable 4.1](#). The resulting report presents case studies of more than 50 initiatives across 16 European countries and serves as a valuable resource for policymakers, stakeholders, and community energy organisations seeking to drive action in this field. For the SOCIALNRG pilots in particular, the report offers inspiration and guidance for developing more inclusive renewable energy models and blueprints within a social housing context, although existing examples of such inclusive REC models in this setting remain relatively rare.

The following are examples of such initiatives, covered more extensively in the report:

1. **Castello Green House (Italy)**

Established in 2024 by the Castello Housing Cooperative, this energy community manages a photovoltaic system across cooperative-owned buildings. The revenues generated from energy sales and self-consumption are reinvested into social initiatives, awareness programs, and efficiency measures. As part of the EU's Citizen-Led Renovation (CLR) Initiative, they plan to upgrade more than 500 housing units, aiming to reduce energy consumption by 33% for their vulnerable members

2. **WOW Wageningen (The Netherlands)**

This community-led district heating project in the Benedenbuurt neighborhood involves the local housing corporation, Woningstichting Wageningen. To ensure that the transition away from natural gas remains affordable for social tenants, the housing provider covers connection fees and offers discounts on fixed heating costs. This model was designed specifically to create a net financial benefit for tenants, leading to an 83% approval rate among residents.

3. **Repowering London (United Kingdom)**

Repowering London specializes in developing community-owned solar projects on estates, having installed over 1 MWp of rooftop solar across London. They address the specific challenges of multi-unit buildings by offering a "whole-block retrofit" service and a specialized toolkit designed to help landlords, leaseholders, and building managers navigate energy upgrades for blocks of flats, an area often overlooked by traditional schemes. To ensure genuine inclusivity for tenants, the organization utilizes a participatory toolkit that moves beyond strictly monetary models, allowing residents to participate in cooperative governance through nominal fees or non-monetary value exchanges, such as time contributions. Their



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early success with the Brixton Energy Solar cooperatives demonstrates how social housing residents can be directly involved in the development, training, and work experience opportunities associated with local renewable infrastructure.

4. Agro Do Amial (Portugal)

This is a collective self-consumption project featuring solar installations on schools and multi-family social housing buildings in Porto. Since 2024, 180 households have benefited from monthly energy savings of €30–40. While the project is currently municipality-driven, it demonstrates the immediate economic relief that social housing-based energy sharing can provide to families.

5. ECoOB (Flanders, Belgium)

Flemish energy cooperative ECoOB mobilises private citizen capital to cover investments in solar panels on social housing. This social investment is interest-free and generates direct economic benefits for vulnerable households in social housing neighbourhoods.



6 Monitoring, Evaluation and Learning (MEL)

Monitoring, Evaluation and Learning (MEL) within the SOCIALNRG project is conceived as an enabling and adaptive process, rather than a purely reporting or accountability exercise. Given the experimental, participatory and context-specific nature of the three pilot cases, the MEL framework is designed to support continuous reflection, learning and adjustment throughout the project lifecycle.

The MEL approach aims to track the implementation of activities, assess early outcomes and capture lessons learned across different territorial and social contexts. Particular attention is paid not only to technical and organisational aspects, but also to social dynamics, community engagement processes and governance arrangements. In this sense, MEL contributes directly to the development of the SOCIALNRG Blueprints, ensuring that they are grounded in real-life experience and responsive to the complexities faced by vulnerable communities.

6.1 Monitoring

Monitoring activities focus on systematically observing and documenting the progress of the three pilot cases, with the objective of supporting adaptive implementation and cross-pilot learning. Rather than relying solely on predefined indicators, the monitoring approach combines qualitative and quantitative information to reflect the evolving nature of the pilots and their diverse local conditions.

As a first step, an initial monitoring exercise has been conducted to capture a baseline overview of the current status of each pilot. The table below provides a comparative snapshot of the three cases, highlighting their respective implementation phases, levels of community engagement, progress in co-design and technical definition, as well as emerging challenges and adaptive responses. This baseline will serve as a reference point for future monitoring activities and will be progressively updated as the pilots evolve

Monitoring Dimension	Italy – Cinisello	Slovenia – Ravne na Koroškem	Belgium – Mechelen
Pilot phase	Co-design / preparation for implementation	Co-design / preparation for implementation	Preparation / early engagement
Community context	Social housing residents	Municipal social housing community	Social housing neighbourhood



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Stakeholders involved	Social housing provider, energy community actors, residents	Municipality, housing company, residents	Housing company, local actors, residents
Resident engagement level	Medium	Medium	Low–Medium
Co-design activities	Initiated (workshops and meetings planned/ongoing)	Initiated (workshops and meetings planned/ongoing)	Initiated (early-stage participatory activities)
Technical solution status	Identified / under assessment	Identified / under assessment	Under exploration
Governance model	Under co-design	Under co-design	Not yet defined
Operational phase activities	Not started (planned)	Not started (planned)	Not started (planned)
Key challenges identified	Coordination among actors	Long-term planning uncertainty, institutional coordination	Early-stage mobilisation, raise awareness
Adaptive actions taken	Adjustment of engagement tools and facilitation methods	Flexibility in planning and phasing	Focus on trust-building and initial outreach
Monitoring data collected	Qualitative feedback, participation data	Qualitative observations, process notes	Initial stakeholder mapping
Learning emerging	Importance of facilitation and trust	Difficulty of long-term forecasting in pilots	Need for extended engagement phase

6.2 Evaluation and Learning

Evaluation and learning within the SOCIALNRG project are conceived as an ongoing and integrated process, embedded in the day-to-day implementation of the pilots rather than confined to specific reporting moments or the end of the project. Evaluation activities



take place throughout the project via recurring consortium meetings and, in particular, through participatory workshops organised during in-person meetings, where partners collectively reflect on progress, challenges and emerging outcomes across the three pilot cases.

These evaluation moments provide structured opportunities to assess the quality of co-design processes, stakeholder engagement, governance dynamics and early social and organisational outcomes. The insights generated are systematically discussed within the consortium and used to inform key project deliverables, as well as to create feedback loops that support decision-making at pilot level, especially when implementation difficulties or unforeseen barriers arise.

In this sense, learning is understood as a continuous, adaptive process that accompanies all phases of the project. Rather than occurring only at the conclusion of activities, learning is activated throughout the development of the pilots, enabling the consortium to adjust approaches, refine methodologies and respond to evolving local conditions. This adaptive learning process is essential to strengthening the relevance, resilience and replicability of the SOCIALNRG approach and to ensuring that the pilots remain responsive to the needs and capacities of the communities involved.



7 Conclusion

The **draft SOCIALNRG blueprints** demonstrate that inclusive energy communities in contexts of vulnerability are fundamentally socio-technical projects: their success depends as much on trust, governance, and communication capacity as on technology and financing. Across Italy, Slovenia, and Belgium, the pilots confirm a consistent pattern: households experiencing vulnerability rarely start from “energy” as their primary concern. Engagement becomes viable when REC development is connected to everyday priorities—comfort, affordability, reliable services, and credible institutional responsiveness.

The blueprints therefore converge on a set of transferable principles that strengthen both implementation feasibility and social impact.

- First, affordability must be designed, not assumed: pilots need clear safeguards, transparent tariff/benefit logics, and risk-sharing arrangements that prevent cost burdens being shifted to residents.
 - Second, trust is a core infrastructure: sustained participation requires plain-language communication, predictable updates, and visible follow-through on resident input.
 - Third, governance must match community readiness: where collective structures are weak or fragmented, early phases should prioritise community practices, representation models, and low-barrier participation pathways before formal legal complexity is introduced.
- ✎ Fourth, phasing and coordination reduce disruption: particularly in renovation- and district-heating-linked settings, sequencing technical works with resident support is essential to maintain acceptance.

Finally, the deliverable underlines that a blueprint is not a static plan but an adaptive pathway. In this sense, the present document should be read as a **draft blueprint**, capturing the state of play during pilot development and serving as a structured basis for learning. Through the project’s Monitoring, Evaluation and Learning (MEL) approach, pilot experiences will continue to inform adjustments, refinements, and course corrections.

The **final SOCIALNRG blueprints, to be published in June 2027**, will consolidate these insights and provide greater clarity on how the challenges encountered at this stage were ultimately addressed in practice. Taken together, the SOCIALNRG blueprints offer a practical “how-to” logic for practitioners and project partners: build readiness, secure fairness, formalise governance, implement in phases, and learn iteratively.



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