



A pilot action testing the jointly developed energy community creation mentoring scheme

Output 3.1

Prepared in the framework of the project:
**DRP0200163 – NRGCOM - Creating appropriate
operational conditions for renewable energy
communities in the Danube Region**

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Abbreviations and Acronyms

ANRE	National Agency for Energy Regulation (Republic of Moldova)
ASP	Associated Strategic Partner
BESS	Battery Energy Storage System
CEC	Citizen Energy Community
CNED	National Centre for Sustainable Energy (Republic of Moldova)
DRP	Danube Region Programme
DSO	Distribution System Operator
EV	Electric Vehicle
gKU	Gemeinsames Kommunalunternehmen (joint communal enterprise, Germany)
HEP ODS	Croatian electricity Distribution System Operator
HERA	Croatian Energy Regulatory Agency
KPI	Key Performance Indicator
LLC	Limited Liability Company
LPA	Local Public Authority
MEKH	Hungarian Energy and Public Utility Regulatory Authority
NGO	Non-Governmental Organisation
P2P	Peer-to-Peer (energy trading)
PP	Project Partner
PPA	Power Purchase Agreement
PSO	Project Specific Objective
PV	Photovoltaic
REC	Renewable Energy Community
RES	Renewable Energy Source(s)

Project Partner acronyms used throughout this document (STRIA, IMRO, JAIP, FORSCHUNG, IRENA, KSSENA, PRA, REDASP, OER, FORS Montenegro, DIT, NEK and AEER) refer to the NRGCOM Project Partners.

Executive Summary

Output O.3.1 of the NRGCOM project delivers a complete pilot action that combines the joint development of a renewable energy community (REC) creation mentoring scheme with its full-scale field testing in five Danube Region countries. The output therefore consists of two integrated work streams: a transferable methodological framework, and a documented evidence base demonstrating its effectiveness across radically different national contexts.

The mentoring scheme (Deliverable D.3.1.1, Activity 3.1, coordinated by DIT) was jointly developed by the Project Partners on the basis of the previous project analyses and best practices. It is structured around a four-phase mentorship framework — Planning and Preparation, Mentoring Process, Monitoring and Evaluation, and Capitalisation and Knowledge Transfer — and draws on the experience of mature European REC initiatives, in particular EWS Schönau and Energiezukunft Fuchstal. The scheme defines clear roles for mentors (Participating Partners and REC Ambassadors) and mentees (local municipalities and community members), and provides operational guidance on legal, technical, financial and governance aspects of REC creation.

The pilot test (Deliverable D.3.2.1, Activity 3.2, coordinated by AEER) applied the scheme to nine concrete pilot communities: three municipal-level initiatives in Hungary (Kunziget, Nemesvámos, Budapest Freeport), one institutional-county energy community in Croatia (Istria County), two complementary models in Serbia (residential in Arandđelovac, industrial in MIND Park Kragujevac), two pioneer initiatives in Moldova (rural in Sireți, urban in Chișinău), and one large-scale regional utility in Germany (Regionalwerke Passauer Land).

Headline results

- **Mentoring scheme jointly developed and validated.** The scheme proved adaptable across the full spectrum of REC maturity, from pre-legislative settings (Serbia, Moldova) to formally founded operations (Germany). All responding partners confirmed its transferability subject to context-specific prerequisites.
- **9 pilot communities mentored across 5 countries,** covering municipal, institutional, residential, industrial and regional-utility models, with five distinct legal forms tested in parallel.

- **Formal founding achieved in Germany:** Regionalwerke Passauer Land was formally established on 26 March 2025 as a Gemeinsames Kommunalunternehmen (gKU) bringing together 27 municipalities and the Landkreis Passau (~189,000 inhabitants), with renewable energy targets of 580 GWh by 2033 (~40% of district consumption).
- **Detailed feasibility and concept work completed** in Hungary (3 communities, including a 1 MWp + 3.9 MWh BESS facility at Budapest Freeport) and Croatia (Istria County, 713 kW PV with quantified surplus-distribution model serving heritage-protected city centres).
- **Pre-legislative roadmaps prepared** in Serbia (residential and industrial pilot models) and Moldova (Sireți rural community and Chișinău multi-apartment urban model), with formal registration scheduled to follow the adoption of secondary legislation expected during 2026.
- **Six-point legislative reform proposal** produced for Croatia, identifying specific amendments needed to the Act on Renewable Energy Sources (member-owned facility sharing, public institution membership, removal of the 110 kV transformer station spatial restriction, asset ownership rules, simplified registration, EV charging permission).

Strategic findings

The comparative analysis reveals that legal-framework maturity remains the primary determinant of progress — but the relationship between regulation and outcomes is more nuanced than a present/absent binary. Even in EU Member States with transposed directives, specific regulatory barriers (restrictive membership provisions in Croatia, artificial energy price caps in Hungary, administrative complexity in Germany) can significantly delay REC establishment. The mentoring scheme delivered its full value where a basic enabling framework existed; in pre-legislative contexts it produced robust preparatory outcomes (roadmaps, stakeholder readiness, institutional dialogue) but could not complete formal REC creation.

Practical, on-site consultations and structured roadmap methodologies were consistently rated as the most effective tools across all five mentoring partners. Generic theoretical sessions were considered less valuable: stakeholders across all contexts demanded concrete data, practical steps, and tangible results. This is the single most actionable finding for future mentoring programmes.

Contribution to the project

Output O.3.1 directly satisfies Programme Output Indicator 2.1.3 (target: 1 pilot action developed jointly and implemented). It feeds substantive evidence into the forthcoming White Paper (O.3.3), into the project's Result Indicator 2.1.3 on solutions taken up or up-scaled, and into the durability and transferability commitments of the project. Together with Output 3.2 (technological pilot), it constitutes the operational core of NRGCOM's contribution to the Danube Region's green transition.

1. Introduction and Output Context

1.1 Project background

NRGCOM responds to a clear and shared challenge: the Danube Region remains heavily reliant on imported, fossil-fuel energy sources, with significant variation between countries in the maturity of their legal frameworks, the operation of existing communities, and public familiarity with the renewable energy community (REC) concept. While Austria, Germany, Slovakia and Slovenia have established legal regimes and operating communities, Montenegro, Croatia, Serbia and Moldova have only nascent activity, and Hungary, the Czech Republic, Bulgaria and Romania face concrete obstacles to the proper functioning of pioneer initiatives.

Within this context, NRGCOM combines 13 Project Partners and 14 Associated Strategic Partners from 12 countries to create the conditions for RECs to spread, raise public awareness, and physically support the start-up and operation of energy communities. The project is structured around three Specific Objectives: PSO1 (proper legal, operational and social environment); PSO2 (raising awareness and encouraging society); and PSO3 (enhancing production and use of renewables through pilot testing).

1.2 Specific objective and indicator alignment

Output O.3.1 sits within PSO3 and contributes directly to Programme Output Indicator 2.1.3 — 'Pilot actions developed jointly and implemented in projects'. The output couples a methodological pilot solution (the mentoring scheme) with its physical implementation in five countries selected during the project preparation phase: Hungary, Croatia, the Republic of Serbia, the Republic of Moldova and Germany. These countries were chosen because the basic feasibility conditions and target-group willingness existed, and because together they represent the three regulatory archetypes the project addresses: well-established (Germany), partially established but with bottlenecks (Hungary, Croatia), and pre-legislative or in active legislative development (Serbia, Moldova).

1.3 From design to evidence: how the two deliverables fit together

Output O.3.1 is built on two sequential deliverables that together constitute one continuous pilot action:

- **Deliverable D.3.1.1** — Mentoring scheme and implementation plan for energy community creation. Coordinated by DIT, this deliverable is the methodological foundation. It defines what mentoring means in NRGCOM, who delivers and receives it, and through which structured framework. Its content forms Part I of this document.
- **Deliverable D.3.2.1** — Report on the success of the mentoring method. Coordinated by AEER, this deliverable applies the scheme to nine pilot communities, documents progress against the assessment criteria defined in the Application Form, and synthesises learning across countries. Its content forms Part II of this document.

Part III of this document then synthesises the joint contribution of both deliverables, drawing recommendations for the forthcoming White Paper (O.3.3) and confirming delivery against the Application Form’s description of Output O.3.1.

PART I: The Jointly Developed Mentoring Scheme

Part I reproduces and integrates the content of Deliverable D.3.1.1, the methodological foundation of the pilot action. It explains the rationale of the mentoring scheme, sets out its objectives, defines the roles of mentors and mentees, presents the four-phase mentorship framework, identifies the key factors for long-term REC success, provides funding-application guidance, and concludes with two reference best-practice cases.

2. Concept and rationale of the mentoring scheme

A mentoring scheme is a structured framework designed to provide guidance, support and advice from experienced individuals (mentors) to less experienced individuals or groups (mentees) with the aim of helping them achieve specific goals. It typically involves a formal process of knowledge transfer, skill development and problem-solving through regular interactions between mentors and mentees.

In the context of NRGCOM Activity 3.1, the mentoring scheme refers to a collaborative support system in which experienced Project Partners and external experts (REC Ambassadors) guide and mentor local communities and authorities in the Danube Region on how to properly set up and manage Renewable Energy Communities. The mentoring process includes:

- **Sharing expertise** on the creation and operation of RECs.
- **Providing technical and strategic advice** on how to manage renewable energy resources efficiently.
- **Helping to overcome challenges** related to legal, technical and financial frameworks needed for establishing RECs.
- **Guiding the communities** through the process of planning, implementation and testing of RECs in specific pilot regions.

By ensuring comprehensive guidance at every stage — from initial planning to operational success — the mentoring scheme empowers local communities. It provides them with the tools, knowledge and confidence necessary to build sustainable energy communities, fostering a robust and resilient renewable energy ecosystem in the region.

3. Objectives of the mentoring scheme

The mentoring scheme is designed to support and empower RECs by addressing critical areas essential to their successful establishment, operation and long-term sustainability. By providing guidance, expertise and collaborative opportunities, the scheme ensures that communities can navigate the complexities of renewable energy projects effectively while fostering innovation and inclusivity. The core objectives include:

- **Enable the successful establishment of RECs.** Guide communities through the entire REC creation process by providing hands-on support and tailored expertise. Step-by-step mentorship ensures that communities can transition from conceptualising their projects to successfully implementing and managing them, laying the groundwork for energy independence and sustainability.
- **Ensure efficient use of renewable resources.** Optimise the utilisation of local resources such as solar, wind or biomass to enhance energy output, minimise waste and contribute to sustainability goals. Communities are guided in developing efficient energy generation, storage and consumption strategies.
- **Encourage self-sustainability and community-driven projects.** Empower communities to manage and expand their energy systems independently through participatory decision-making, robust financial models and technical capacity building, fostering ownership and long-term viability.
- **Facilitate knowledge transfer across regions and partners.** Through sharing best practices, case studies and insights, the scheme creates a collaborative network for REC development. Communities benefit from the experience of others, enabling innovation and accelerating the adoption of effective renewable energy solutions.
- **Overcome technical, legal and financial barriers.** The scheme addresses obstacles such as technical challenges, regulatory compliance and funding access by providing targeted solutions, ensuring RECs can operate efficiently from inception to execution.

4. Key stakeholders

The success of the mentoring scheme relies on the active participation and collaboration of key stakeholders. Each plays a vital role in supporting the development and sustainability of RECs. Project Partners and REC Ambassadors act as mentors. Local

municipalities and community members serve as mentees. Together, these stakeholders form a dynamic ecosystem that drives the establishment of community-driven, sustainable energy solutions.

4.1 Mentors

4.1.1 Participating Partners (PPs)

Participating Partners act as the primary mentors, guiding municipalities and other stakeholders through the process of setting up and managing RECs. Leveraging their experience and best practices from previous energy projects, PPs provide structured support, ensuring that mentees have the tools and knowledge required to succeed. Their role is central to the mentoring scheme, bridging the gap between theory and practical implementation.

4.1.2 REC Ambassadors

REC Ambassadors play a specialised role by offering expert advice in areas such as governance, financing and technical solutions for renewable energy projects. They serve as external advisors, supporting both PPs and mentees, and ensure that the mentoring process incorporates advanced, actionable strategies to address challenges effectively.

4.2 Mentees

4.2.1 Local municipalities

Local municipalities are the primary recipients of the mentoring process. They receive tailored guidance to establish and operate RECs within their jurisdictions. Municipalities also collaborate closely with citizens, cooperatives and other stakeholders, ensuring that REC projects align with community goals and local climate policies.

4.2.2 Community members

Community members are integral to the success of RECs. They act as co-owners and active participants in the projects, contributing their local knowledge, resources and engagement to drive the initiative forward. By participating in decision-making processes and project implementation, they ensure that RECs are truly community-driven and sustainable in the long term.

4.3 Target mentee regions for Activity 3.1

In the context of Activity 3.1, the target groups of mentees are:

- Transdanubia region, Hungary
- Labin area, Croatia
- Municipality of Arandđelovac, Serbia
- A municipality in Moldova — Covenant of Mayors member
- Landkreis Passau, Germany

Each of these regions is tasked with forming and operating a REC, using the knowledge and tools provided by the mentors. These pilot areas serve as testing grounds for implementing REC models that can later be scaled and replicated in other communities.

5. Mentorship framework: a four-phase approach

The mentoring scheme is operationalised through four sequential phases that together cover the full life cycle of REC creation — from preparatory analysis through to capitalisation and replication.

Phase 1 — Planning and preparation

5.1 Preparation and contextual understanding

To lay a strong foundation for establishing RECs, it is essential to begin with a comprehensive understanding of the local context, active engagement of key stakeholders, and a clear definition of the goals and scope of the initiative. This process involves:

- **Conducting baseline assessments.** Analyse the local energy landscape to understand energy needs, resource potential and socio-economic conditions. These assessments provide critical data to shape strategies tailored to the community's specific requirements.
- **Identifying and engaging stakeholders.** Collaborate with a diverse range of stakeholders, including municipalities, community members, technical experts and financial partners. Their involvement ensures a holistic approach, fostering shared ownership and leveraging their expertise for effective REC development.

5.2 Development of the implementation plan

A well-crafted implementation strategy is the cornerstone of successfully establishing and operating RECs. This strategy must address technical, financial, operational and legal aspects while tailoring solutions to the specific needs of the community and the resources available in the region. The process involves several detailed steps:

Assessing feasibility and creating a detailed action plan

The first step in implementing a REC is to assess its feasibility comprehensively. This involves technical, financial and operational evaluations to determine whether the proposed REC can effectively meet the community's energy needs while remaining financially viable and operationally sustainable.

- **Technical assessments:** in-depth evaluations of the region's renewable energy potential by analysing solar radiation, wind conditions, biomass availability and hydroelectric possibilities. GIS and renewable-energy simulation software can identify optimal locations and configurations.
- **Financial models:** detailed financial plans to support establishment and operation. Diverse funding sources — public grants, cooperative investments, loans, private funding — should be combined, with projected returns on investment and revenue distribution mechanisms.
- **Governance structure:** a democratic governance framework that promotes inclusivity and transparency, defines roles and responsibilities, sets decision-making rules and creates accountability measures.
- **Phased implementation plan:** a structured timeline divided into clear phases with specific milestones and deliverables, allowing iterative progress and reducing risk.

Creating guidelines for renewable energy operations

- **Energy generation:** protocols for the installation and operation of renewable energy systems tailored to the region's resources, including maintenance schedules and performance optimisation measures.
- **Energy storage:** strategies for integrating energy storage solutions, such as battery systems or thermal storage, to manage fluctuations in supply and demand.
- **Energy consumption:** community-specific consumption plans encouraging efficient energy use, demand-side management practices, conservation measures and incentives for energy-efficient technologies.

Establishing legal frameworks

- **Permits and licensing:** identify and obtain the necessary permits and licences required for renewable energy installations and operations, including environmental impact assessments, construction permits and grid connection agreements.
- **Energy trading regulations:** align the REC with existing energy trading rules, allowing the community to sell surplus energy to the grid or participate in local energy markets.
- **Operational policies:** operational guidelines covering safety protocols, dispute resolution mechanisms and data privacy regulations.

Phase 2 — Mentoring process (support and training)

5.3 Awareness building and engagement

Educating and mobilising the community is a critical step in establishing a successful REC. Building awareness fosters widespread understanding, encourages participation and ensures long-term support. This is achieved through a combination of targeted strategies:

- **Organising workshops, public meetings and information campaigns** to explain the concept and tangible benefits of RECs, including cost savings, enhanced energy independence and positive environmental impacts.
- **Providing access to online learning resources** such as digital learning modules, guides and resource materials. Accessible materials ensure inclusivity and broaden reach to those who may not attend in-person events.

Creating spaces for open discussions is crucial for addressing community concerns and building trust. Facilitating open dialogue helps dispel misconceptions, answer questions and clarify objectives. Transparent and inclusive discussions foster ownership and confidence in the REC's mission.

5.4 Establishment and implementation

The formal establishment of a REC marks a pivotal transition from planning to action. This phase involves the administrative, financial and operational steps necessary to initiate renewable energy projects effectively:

- **Registering the REC as a legal entity.** Legal registration ensures the REC operates within the framework of national and EU regulations, enabling it to engage in energy trading, secure funding and form contracts.

- **Securing funding.** The REC must obtain sufficient financial resources, achieved through a mix of municipal guarantees, community investments and public grants. Encouraging local residents to invest fosters a sense of ownership and commitment.
- **Procuring and installing renewable energy systems.** Once funding is secured, the REC can begin acquiring and installing the necessary infrastructure — solar panels, wind turbines, biogas facilities, or a combination of technologies.

5.5 Individual mentorship

Individual mentorship is a critical component of the mentoring scheme, ensuring that each REC receives personalised guidance tailored to its unique challenges and needs. The mentorship process involves:

- **Scheduling regular check-ins** with local authorities and stakeholders to monitor REC progress, review milestones, discuss challenges and refine strategies.
- **Offering tailored advice** on resource optimisation, compliance with local regulations and stakeholder engagement, taking into account each REC's unique circumstances.
- **Providing continuous troubleshooting support** to address technical, legal or financial issues during REC development and operation.

5.6 Use of efficient resources

Mentorship should extend beyond establishment to include strategies for encouraging the optimal use of renewable energy resources. Mentors empower communities to maximise the potential of their resources through:

- **Conducting resource assessments** to evaluate the availability and potential of local renewable resources.
- **Educating the community** on best practices for renewable energy integration, demand-side management and conservation techniques.
- **Optimising energy systems** by integrating advanced solutions such as energy storage, sector-coupling and Power-to-Heat technologies.

Phase 3 — Monitoring and evaluation

A robust Monitoring and Evaluation framework is critical for ensuring the effectiveness and sustainability of the mentoring scheme. This structured approach allows for

continuous tracking of progress, evaluation of outcomes and identification of areas for improvement.

5.7 Monitoring

Monitoring focuses on tracking the day-to-day operations of RECs:

- **Deploying monitoring systems** to measure energy production, financial performance and community participation.
- **Providing real-time mentoring support** to address operational issues as they arise.

5.8 Evaluation

Evaluation involves assessing the overall success and long-term performance of RECs against predefined criteria. Establishing a long-term monitoring framework defines clear KPIs that should include:

- Energy metrics — total energy production and savings.
- Community engagement — participation levels and ongoing commitment.
- Financial viability — sustainability of financial models and return on investment.
- Environmental impact — reductions in CO₂ emissions and other benefits.

Periodic evaluations should be scheduled to refine the mentoring scheme, adjust strategies and address emerging challenges.

Phase 4 — Capitalisation and knowledge transfer

The final phase focuses on building upon the success of established RECs by scaling their impact and sharing knowledge to inspire and support other communities.

5.9 Expansion and replication

- **Expanding membership, capacity or scope** to amplify the environmental and economic benefits of the REC.
- **Sharing best practices and resources** by documenting and disseminating lessons learned, case studies and actionable templates.
- **Advocating for policy support** by engaging with policymakers to promote frameworks for REC replication and expansion.

6. Key factors for long-term success

Ensuring the long-term success of RECs requires addressing a wide range of factors across governance, technical, financial and social dimensions. These factors collectively create a foundation for sustainability, resilience and community empowerment.

6.1 Strong governance and organisational structure

A robust governance framework is the backbone of successful REC operations, fostering trust, ensuring accountability and enabling sustainable growth. Democratic decision-making must be a core principle, allowing every member an equal voice in key decisions. Clearly defined roles and responsibilities for board members, project managers and operational teams streamline management. Governance structures must be adaptable to accommodate growth.

6.2 Community engagement and participation

Community engagement is a cornerstone of REC success. Active participation can be fostered through regular workshops, public meetings and platforms for participatory decision-making. Education and awareness programmes maintain community support, while inclusivity ensures that all community members — including vulnerable or marginalised populations — can benefit from the REC's initiatives.

6.3 Financial stability

Financial sustainability is essential for the viability and resilience of RECs. Diverse revenue streams — income from energy sales, feed-in tariffs, government incentives — provide a buffer against market fluctuations. Securing start-up capital through grants, low-interest loans or community investments is critical in the early stages. Efficient cost management, including bulk purchasing and economies of scale, helps reduce expenses. The ability to generate a steady surplus enables reinvestment into new projects, maintenance or community initiatives.

6.4 Robust technical infrastructure

A reliable and diversified technical infrastructure underpins REC operations. Integrating multiple renewable energy sources — solar, wind, biogas — enhances system reliability.

Energy storage solutions stabilise supply and manage surplus production. Smart grids and energy management tools optimise generation, distribution and consumption.

6.5 Long-term planning and vision

A clear strategic vision with defined goals for energy production, sustainability and community growth is essential. Strategic roadmaps should outline targets over 10–20 years with specific milestones. Adaptation strategies should accommodate technological advancements and regulatory changes. Scalability and replication potential are equally important, with well-designed RECs serving as models for other communities.

6.6 Policy and regulatory compliance

Alignment with local, national and EU policies is critical for ensuring REC legitimacy and operational success. Regular updates on regulations affecting RECs help maintain compliance. Proactive advocacy for supportive policies — streamlined permitting, incentives, favourable feed-in tariffs — strengthens the operational environment.

6.7 Collaboration and partnerships

Collaboration enhances the impact and efficiency of RECs. Partnerships with municipalities provide access to infrastructure, funding and public support. Cross-sector collaborations bring specialised knowledge and innovative solutions. Networking with regional and international REC initiatives, such as the Covenant of Mayors, fosters knowledge sharing and collective impact.

6.8 Social and environmental impact

Delivering tangible social and environmental benefits is crucial for maintaining community support. Addressing energy poverty by offering affordable energy tariffs or targeted assistance for vulnerable groups fosters equity and inclusivity. Environmental priorities include reducing carbon emissions, enhancing energy efficiency and promoting sustainable practices.

6.9 Continuous monitoring and evaluation

Ongoing monitoring and evaluation are essential for tracking REC performance. Establishing KPIs — energy production levels, CO₂ reductions, financial returns, community engagement metrics — provides measurable insights. Transparent reporting and regular feedback loops enable iterative improvements and adaptive management.

7. Funding application guidance for RECs

Securing funding is one of the most critical and challenging steps in establishing and sustaining RECs. The process demands strategic planning, a compelling project concept and alignment with funding priorities. The mentoring scheme provides a step-by-step framework that equips municipalities, cooperatives and community groups to navigate the complex funding landscape.

7.1 Understand the funding landscape

Begin with a thorough understanding of the various funding options available to RECs, including grants, loans, cooperative investments and innovative financing models such as crowdfunding or green bonds. Identify programmes specifically tailored to community-driven renewable energy initiatives, including EU funding schemes (Horizon Europe, LIFE), national subsidies and local energy transition funds. Evaluate each programme's objectives, eligibility criteria and funding limits to determine the best match for your REC's goals.

7.2 Define project objectives

A successful funding application hinges on a well-defined project concept. Articulate the purpose, goals and expected outcomes clearly. Highlight innovative aspects — community-owned storage, advanced renewable technologies, inclusive governance models — and establish measurable objectives such as “Install a 5 MW solar farm to supply renewable energy to 2,000 households within three years”.

7.3 Identify partners and stakeholders

Collaboration is often a prerequisite for accessing funding programmes. Identify and engage technical experts for feasibility studies, municipalities for regulatory support and co-funding, and community representatives to demonstrate local buy-in. Clearly define each partner's roles and contributions, formalised through agreements outlining responsibilities, timelines and resource commitments.

7.4 Conduct a feasibility study

A detailed feasibility study demonstrates the project's viability and alignment with funding priorities. Key elements include:

- Technical assessments — wind analysis, solar mapping, biomass resource evaluation.
- Financial modelling — project costs, revenue streams, return on investment.
- Risk analysis — regulatory barriers, market fluctuations and mitigation strategies.

7.5 Develop a detailed budget plan

Prepare a comprehensive budget covering infrastructure, equipment, personnel, training, operation, maintenance and contingencies. Demonstrate financial sustainability by including co-funding sources such as municipal guarantees or community investments. Ensure the budget aligns with the funding programme's requirements, including cost-sharing percentages and eligible expense categories.

7.6 Write a compelling proposal

Tailor the proposal to the funding programme's priorities. The proposal should include: an executive summary; a detailed project description; a community-impact section quantifying benefits; an environmental-impact section with measurable carbon reductions; a work plan with milestones; and a clear budget breakdown justifying all costs.

7.7 Submit, follow up, and manage funds

Submit the application through the designated portal, paying close attention to formatting, word limits and deadlines. After submission, maintain active communication with the funding body, be prepared to clarify aspects of the proposal, and — if unsuccessful — request detailed feedback. Once funding is approved, maintain detailed financial records, track expenditures, and report progress regularly.

8. Best practice references

Two reference cases informed the design of the NRGCOM mentoring scheme: EWS Schönau — a pioneering citizen cooperative — and Energiezukunft Fuchstal — a rural municipal initiative. Both cases are reproduced here in summary form because the mentoring scheme draws practical lessons from each.

8.1 EWS Schönau (Elektrizitätswerke Schönau)

EWS Schönau, one of Germany's leading RECs, originated in the small town of Schönau, Baden-Württemberg, during the 1990s. This grassroots initiative was born out of the community's strong opposition to nuclear energy following the Chernobyl disaster. Residents envisioned an energy system that prioritised clean, renewable sources and democratic control. Over time, this vision transformed into a pioneering REC that became a model for sustainable, community-led energy transitions.

8.1.1 Motivation and goals

The primary objectives were to eliminate reliance on nuclear and fossil fuels and transition entirely to renewable energy sources, establishing community ownership so the local population could participate in and benefit from energy production. The REC sought to decentralise energy systems, empowering citizens, and prioritised public education on the environmental and societal benefits of renewable energy.

8.1.2 Key actions and steps

- Awareness campaigns (1990s) — educated citizens about the risks of nuclear energy and benefits of renewables.
- Fundraising for grid purchase — mobilised the community to raise funds for acquiring the local power grid.
- Formation of the cooperative (1997) — established a citizen-owned cooperative to manage the grid.
- Renewable energy adoption — replaced nuclear and fossil-fuel energy with solar, wind and hydroelectric power.
- Scaling operations — expanded beyond Schönau to supply renewable energy nationwide.

8.1.3 Challenges and solutions

Financial barriers. Acquiring the local power grid required substantial capital. The previous licence holder valued the grid at 8.7 million Deutschmark; an independent appraisal commissioned by EWS Schönau valued it at 4 million. EWS proceeded with the higher amount, planning to contest legally. The cooperative responded with a transparent fundraising campaign that galvanised community support, offered affordable cooperative shares to enable broad participation, and secured ethical bank loans aligned with their mission.

Regulatory hurdles. Operating within Germany's monopolistic energy market presented licensing and legal challenges. The cooperative engaged legal experts to navigate compliance and worked with advocacy groups to influence energy policy, setting precedents that benefited other renewable energy communities.

Community scepticism. Initial doubts about the community's ability to manage the grid were addressed through extensive engagement — meetings, workshops, town halls — by showcasing testimonials from similar initiatives, and through transparent governance promoting collective decision-making.

8.1.4 Results and impact

The cooperative supplies 100% renewable energy to over 200,000 customers across Germany, reducing thousands of tonnes of CO₂ emissions annually. It has empowered communities to take control of their energy futures and demonstrated the potential of community-driven energy systems.

8.1.5 Lessons learned (key takeaways for the mentoring scheme)

- Begin with small, community-driven initiatives to build trust and support.
- Secure funding through a mix of community investment and ethical loans.
- Partner with experienced cooperatives and renewable energy experts.
- Advocate for supportive policies and address regulatory barriers early.

8.2 Energiezukunft Fuchstal

Fuchstal, a rural municipality in Bavaria with approximately 4,000 residents, has emerged as a leader in renewable energy innovation through its initiative 'Energiezukunft Fuchstal'. The project aims to achieve energy self-sufficiency, integrating multiple renewable energy

technologies and leveraging innovative approaches such as sector coupling and community engagement.

8.2.1 Objectives and goals

- Energy self-sufficiency: 100% energy independence in electricity and heating sectors by 2024.
- Environmental impact reduction: reducing carbon emissions and advancing sustainability.
- Economic resilience: strengthening the local economy through energy savings, job creation and enhanced energy security.

8.2.2 Key actions and implementation steps

- Deployment of renewable energy sources: a diverse mix of photovoltaic systems, hydropower plants, biogas facilities and a citizen-owned wind park.
- Energy storage solutions: investments in central heat storage and battery units to manage surpluses and demand fluctuations.
- Sector coupling: Power-to-Heat technologies convert surplus electricity into heat, maximising resource utilisation.
- Community engagement: residents are actively involved through investment opportunities and decision-making processes.

8.2.3 Stakeholder involvement

- Local government — leadership and oversight, alignment with municipal sustainability goals.
- Residents — financial contributions and energy-saving programmes, reinforcing community ownership.
- Technical partners — expertise in renewable energy systems, ensuring technical feasibility.
- Environmental organisations — guidance on adhering to sustainable practices and regulatory standards.

8.2.4 Challenges and solutions

Regulatory hurdles. Strict frameworks delayed approvals for biogas plants, photovoltaic systems and wind parks. The Fuchstal team engaged legal experts to address compliance

issues and collaborated with local authorities to streamline approvals, minimising delays and establishing a model for future projects.

Financial constraints. Substantial upfront investment was required, especially for district heating and biogas plants. The municipality adopted a diversified funding strategy combining public grants, private investments and community contributions through cooperative shares, partnering with ethical banks and green energy funds for favourable loans.

Community scepticism. Initial doubts about feasibility and benefits were addressed through extensive outreach, including informational sessions and workshops. Sharing success stories from similar projects (notably EWS Schönau) and establishing transparent governance with equal voting rights fostered trust.

8.2.5 Lessons learned for replication

- Community involvement is paramount — early and continuous engagement is critical.
- Diversification enhances reliability — combine multiple renewable sources.
- Address regulatory barriers early to reduce delays.
- Apply multi-pronged financial strategies — grants, private investment, cooperative contributions.
- Advocate for supportive policy alignment with national and EU sustainability objectives.
- Reinvest profits to drive growth — fund system upgrades, new technologies and maintenance.

PART II: Pilot Test Results across Five Danube Region Countries

Part II reproduces and integrates the content of Deliverable D.3.2.1, which documents the testing of the mentoring scheme in nine concrete pilot communities across Hungary, Croatia, Serbia, the Republic of Moldova and Germany. Activity 3.2 was led by AEER and ran from Period 3 to Period 4 (months 13–24), in line with the Application Form.

9. Methodology and assessment framework

9.1 Overview of pilot sites and mentoring partners

The pilot action was structured around five national mentoring partners, each guiding one or more communities through the structured methodology defined in Part I. The full distribution is shown below:

Country	Pilot site(s)	Mentor	No. of communities	Legal form
Hungary	Kunsziget; Nemesvámos; Budapest Freeport	STRIA	3	Non-profit LLC
Croatia	Energy Community of Istria County	IRENA	1	Association
Serbia	Arandđelovac (residential); MIND Park Kragujevac (industrial)	REDASP	2	Non-profit association
Moldova	Sireți (local community); Vasile Lupu, Chișinău (urban)	AEER	2	NGO
Germany	Regionalwerke Passauer Land	DIT	1	Communal company (gKU)

9.2 Mentoring scheme applied

The mentoring scheme reproduced in Part I (D.3.1.1), developed under Activity 3.1 and coordinated by DIT, provided the methodological foundation. The scheme defined structured steps for REC creation and was adapted to each national context. Mentoring activities included workshops, face-to-face and telephone consultations, expert guidance, document preparation support, regulatory liaison and data collection support.

9.3 Assessment criteria

Success was evaluated against criteria defined in the NRGCOM Application Form:

Criterion	Description	Assessment method
Founder identification	Name and legal form of the founding entity	Documentation review
Membership	Number and type of members recruited	Quantitative count
Legal conditions	Agreements, licences, regulatory compliance	Checklist / status
Financial framework	Funding model, business plan, cost analysis	Documentation review
Technical readiness	Equipment, technology, infrastructure status	Progress assessment
Administrative progress	Pace and smoothness of administrative tasks	Timeline adherence
Barriers encountered	Challenges and mitigation strategies applied	Qualitative analysis
Energy management	System design and operational readiness	Maturity assessment

9.4 Data collection

Data was collected in two rounds. First, a standardised interim reporting template was distributed to all Activity 3.2 partners (December 2025 – January 2026). Based on gaps identified in the interim reports, partner-specific follow-up data requests were issued and returned between February and March 2026. Additional information was gathered through partner meetings, bilateral consultations and project progress reports.

10. Pilot sites: detailed progress reports

10.1 Hungary — STRIA (with IMRO)

STRIA is mentoring three energy community initiatives. All three have completed professional concept development and data collection, and are planning formal registration in 2027 as non-profit LLCs. A consistent challenge across Hungarian sites is the incomplete regulatory framework for RECs and artificially capped residential energy prices, which reduce the financial attractiveness for citizen members.

10.1.1 Energy Community of Kunsziget

Municipality	Kunsziget, Győr-Moson-Sopron County
Legal form	Non-profit LLC (planned)
Potential members	7 identified; 6 confirmed interest
RES type	Solar PV (community + solar power plant via PPA)
Planned capacity	50 kW AC/DC / 64,329 kWh
Key milestones achieved	Mentoring workshop (31.03.2025); Concept v1 (09.10.2025); Data collection (02.12.2025); Concept finalised (29.01.2026)
Registration timeline	2027 (dependent on PPA contract with solar power plant)
Remaining steps	1) Form non-profit LLC; 2) PPA contract with solar plant; 3) Register with MEKH

10.1.2 Energy Community of Nemesvámos

Municipality	Nemesvámos, Veszprém County
Legal form	Non-profit LLC (planned)
Potential members	13 identified; 9 confirmed interest
RES type	Solar PV (community + solar power plant via PPA)

Planned capacity	~2,000 kW (depending on efficiency targets)
Energy data	Production: 1,568,817 kWh; Consumption: 5,229,390 kWh
Key milestones achieved	Workshop (02.07.2025); Data collection (27.11.2025); Concept finalised (04.03.2026)
Registration timeline	2027 (dependent on PPA contract)
Remaining steps	1) Form non-profit LLC; 2) PPA contract; 3) Register with MEKH

10.1.3 Energy Community of Budapest Freeport

Organisation	Budapest Freeport
Legal form	Non-profit LLC (planned)
Members	4 entities (selected from 3 scenarios presented)
RES type	Solar PV + Battery Energy Storage System
Planned capacity	1,000 kWp solar PV + 3,900 kWh BESS
Energy consumption	3,052,168 kWh (current Freeport area consumption)
DSO status	Capacity expansion request submitted; response expected 2027
Key milestones achieved	Workshop (25.02.2025); Concept v1 (24.07.2025); Data collection (06.11.2025); DSO engaged (02.12.2025); Concept finalised (12.03.2026)
Registration timeline	2027

Hungarian-specific barriers and policy issues. STRIA highlights that the artificial cap on residential energy prices makes citizen participation financially unattractive, significantly impacting the mentoring process. There is no clear regulatory framework defining RECs in Hungary, no incentives for energy community formation, and contradictions between

Hungarian and EU legislation on RECs. The regulations create obstacles for peer-to-peer (P2P) energy trading.

10.2 Croatia — IRENA

10.2.1 Energy Community of Istria County

IRENA has developed one of the most technically detailed pilot analyses in the project. The Energy Community of Istria County plans to establish an association that brings together public institutions owned by Istria County, directing surplus electricity toward citizens and entrepreneurs in heritage-protected historic city centres who are unable to invest in their own renewable energy installations due to conservation restrictions. In subsequent expansion phases, institutions managed by cities and municipalities will be included to ensure sufficient shared energy supply. The long-term goal includes households at risk of energy poverty, making this a model with significant social inclusion potential. However, progress toward formal establishment is blocked by legislative amendments expected by late summer 2026.

Community name	Energy Community of Istria County
Legal form	Association (statute and membership regulations drafted)
Members	24 potential: 18 public institutions, 3 citizens, 3 entrepreneurs. Participation certain for institutions (managed by Istria Region); formalisation pending legislation
RES type	Solar PV
Planned capacity	713 kW; estimated production 962,550 kWh; ~300,000 kWh surplus for sharing
Energy sharing model	Surplus distribution: 20% of institutional, 67% of citizen, 20% of entrepreneur consumption. Internal rules pending legislative amendments on member-owned facility sharing
DSO/metering	HEP ODS responsible for smart meter installation (free); request can only be submitted after HERA registration. Interim plan: inverter-level smart meters with custom software

Governance documents	Statute drafted; Terms of Membership drafted; founding assembly planned for May 2026 (initially 3-member association). Phase 2: institutions, citizens and entrepreneurs from heritage-protected areas join after legislative amendments
Social purpose	Surplus electricity directed to citizens and entrepreneurs in historic city centres under heritage conservation who cannot install own RES. Long-term: inclusion of energy-poor households
Registration timeline	Unknown — dependent on legislative amendments (expected late summer 2026)
Critical barrier	Legislative amendments needed: (1) allow institutions as REC members; (2) enable sharing from member-owned production facilities
Support needed	Technical: software for automated sharing key calculation and financial settlement

Croatian legislative barriers. IRENA has identified six specific legislative issues requiring amendment to the Act on Renewable Energy Sources:

- Enabling energy sharing from member-owned production facilities, not only community-owned.
- Allowing public institutions to become REC members and removing the 40% ownership cap.
- Removing the 110 kV transformer station spatial restriction, which fragments communities and prevents regional RECs.
- Addressing asset ownership rules upon dissolution (currently transferred to local government regardless of member contributions).
- Aligning REC activity registration with the simplified CEC model.
- Explicitly permitting EV charging activities.

IRENA describes the current Croatian REC situation as one of “bureaucratic limbo”.

10.3 Serbia — REDASP

10.3.1 Arandjelovac (residential) and MIND Park, Kragujevac (industrial)

REDASP is developing two complementary REC pilot models. Progress remains constrained by the absence of secondary legislation, with adoption anticipated in 2026.

Aspect	Arandđelovac (residential)	MIND Park (industrial)
Target group	Households in Šumadijski Kutak area	Enterprises in MIND Park industrial zone
Members	Core group identified; formal count pending pre-registration	Core group identified; engagement ongoing
RES type	Rooftop solar PV for self-consumption	Rooftop solar PV on industrial buildings
Planned capacity	3.5–4.5 kWp per household	30–100 kWp per enterprise
Legal form	Non-profit citizens' association	Non-profit association of legal entities
Governance	Executive Board coordination; REDASP facilitation; DSO technical interface	Coordinated self-consumption within industrial zone
Energy sharing	Subject to secondary legislation	Subject to secondary legislation
Expected benefits	Reduced household energy costs	Reduced costs, price predictability, ESG positioning

Regulatory aspect	Status
Secondary legislation	Not adopted as of reporting date
Ministry engagement	Communication established with Ministry of Mining and Energy
Expected provisions	REC registration procedure, energy sharing mechanisms, member rights/obligations, grid connection
Expected timeline	Formal registration following adoption (anticipated 2026)

Regulatory aspect	Status
EU alignment	Ongoing alignment with EU energy acquis; no restrictive developments

Serbian-specific policy recommendations from REDASP. Adopt secondary REC legislation, establish clear energy sharing rules, simplify registration procedures, and define DSO coordination mechanisms. REDASP notes that stakeholder readiness can progress significantly despite regulatory delay, but legal clarity remains essential for formal establishment.

10.4 Republic of Moldova — AEER

10.4.1 Sireți (local community) and Vasile Lupu, Chișinău (urban residential)

AEER, as both pilot site mentor and Activity 3.2 leader, is developing two pioneer REC initiatives representing Moldova’s earliest energy community models.

Aspect	Sireți (rural)	Vasile Lupu, Chișinău (urban)
Target group	Local community (8 buildings/households)	Multi-apartment building (12 apartments)
Active interest	8 confirmed	10 out of 12 expressed interest
RES type	Solar PV (75 kWp)	Rooftop solar PV (40 kWp)
Legal form	NGO	NGO
Founder/initiator	Sireți Municipality (founder member)	A resident of the building
Governance	Multi-stakeholder: municipality, economic agent, school (PV host), gas entity, households	Static allocation: predefined shares based on consumption or financial contribution
Formal requests	3 submitted to institutions; no final answer yet	Under development

Aspect	Sireți (rural)	Vasile Lupu, Chișinău (urban)
Registration expected	June 2026 (Sireți)	Post-legislation
Operation expected	Post-registration; dependent on financial opportunities	Post-registration

Regulatory aspect	Status
Legal framework	Law 10/2016 (energy) + Law 164/2025 (CEC/REC) exist but implementation rules incomplete
Special REC law	Under development; Ministry of Energy not providing exact timeline
Key meetings	22.09.2025 – DSO Premier Energy (Sireți connection); 13.11.2025 – Min. of Energy, ANRE, CNED (legal form); 09.12.2025 – Podcast with Min. of Energy & CNED (REC law, perspectives)
Registration requirements	ANRE registry; open participation; autonomy; non-profit orientation; compliance with market rules
DSO connection	Grid connection via DSOs; metering; contractual arrangements for measurement, allocation, billing
Financial incentives	Emerging: CNED/Energy Efficiency Fund; international donors (EU, UNDP, GIZ, EBRD/EIB/WB) are main drivers

Key barriers faced in establishing RECs in Moldova. AEER reported several significant challenges:

- Regulatory uncertainty — the legal framework exists (Laws 10/2016 and 164/2025) but implementation rules are incomplete and a dedicated REC legal form is still under development, creating ambiguity about registration and operational procedures.
- Limited stakeholder experience — RECs are a completely new concept in Moldova, requiring extensive awareness-raising and capacity building before any practical steps can be taken.

- Coordination delays with multiple institutions — engagement with the Ministry of Energy, ANRE, CNED, and DSO Premier Energy required sustained effort, with no final responses received to the three formal requests submitted for the Sireți pilot.
- Financial constraints and delayed reimbursements — implementation timelines were affected by financial bottlenecks, limiting the pace of activities.
- The absence of a dedicated legal form that allows local public authorities to associate with other actors — this is the specific legislative gap that the pending special law aims to address.

Moldovan policy recommendations from AEER. Adopt a dedicated legal form for RECs; enable all stakeholder types (LPA, business, private, state) to participate; extend eligibility to other RES types (wind, biomass); introduce financial incentives (grants, tax support); clarify energy sharing and metering rules; establish a one-stop-shop support mechanism for RECs.

10.5 Germany — DIT

10.5.1 Regionalwerke Passauer Land

The Regionalwerke Passauer Land represents the most advanced pilot site in the NRGCOM project. It is not a classical Renewable Energy Community under EU directive transposition, but a large-scale inter-municipal communal enterprise encompassing 27+ municipalities across an entire Landkreis (~189,000 inhabitants). The gKU was formally founded on 26 March 2025, and DIT served as the academic mentor throughout the political negotiation and founding process.

Community	Regionalwerke Passauer Land gKU (HRA 13999, Amtsgericht Passau)
Legal form	Gemeinsames Kommunalunternehmen (gKU) — Anstalt des öffentlichen Rechts under Art. 49 Bavarian KommZG
Members	27 municipalities (51%) + Landkreis Passau (49%); up to 35 Gemeinden referenced subsequently
RES targets	300 GWh PV + 280 GWh wind by 2033; long-term: 500 GWh + 80 GWh biomass/green gases

Coverage target	~580 GWh = ~40% of district electricity consumption (baseline: ~1,400 GWh/year)
Management	Verwaltungsrat: 28 members, chaired by Landrat Kneidinger; Vorstand: Jakob Schätz (appointed 5 June 2025)
Business model	gKU develops turnkey project rights, transfers to Projektgesellschaften with municipal + private co-investors
Citizen participation	Bürgergenossenschaften (citizen cooperatives) explored; local value retention
Risk mitigation	Low entry cost; public-law protections; ring-fenced subsidiaries; quick-win priority; optional private investors

10.5.2 Political and administrative process

The founding required broad political consensus across dozens of independent municipalities, each needing individual Gemeinderat/Stadtrat resolutions across party lines (CSU, SPD, Freie Wähler, Grüne). Initial scepticism centred on financial risk, loss of municipal autonomy, and the appropriate legal form.

Key milestones. Kreisausschuss concept approval (12 March 2024) → Info event in Ruhstorf with ~300 attendees (19 June 2024) → Kreistag founding resolution (9 December 2024) → Formal founding with 27 municipalities + Landkreis (26 March 2025) → Verwaltungsrat constituted and Vorstand appointed (5 June 2025) → Commercial register entry (21 July 2025).

11. Comparative analysis across pilots

11.1 Legal and regulatory environment

The legal environment proved to be the single most influential factor determining progress across all five countries. Notably, regulatory challenges affect not only non-EU countries but also EU Member States:

Country	Legal framework status	Key regulatory barrier	Impact on pilot
Germany	Well-established; Bavarian KommZG enables gKU model	Administrative complexity: consensus across 27+ municipalities required individual council resolutions	Formal founding achieved; Verwaltungsrat and Vorstand appointed; first projects in planning
Hungary	Framework exists but incomplete; contradictions with EU law	No clear REC definition; artificial energy price caps; P2P trading barriers	Professional concepts ready; registration delayed to 2027
Croatia	Legal basis exists but restrictive provisions	6 specific barriers: institution eligibility, member-owned sharing, spatial scope, asset rules, activity registration, EV charging	Detailed analysis completed; formal establishment blocked pending amendments (late summer 2026)
Serbia	No secondary legislation adopted	No REC registration, sharing, or grid connection procedures	Roadmaps prepared; formal establishment pending legislation (2026)
Moldova	Laws 10/2016 & 164/2025 exist; implementation rules incomplete	No dedicated REC legal form; special law under development	Roadmaps prepared; Sireți registration target June 2026

A critical finding is that even in EU Member States with transposed directives, practical obstacles such as restrictive membership provisions (Croatia), artificial price distortions

(Hungary), and administrative complexity (Germany) can significantly delay REC establishment. The legal barriers are not binary (present/absent) but exist on a spectrum of regulatory maturity.

11.2 Community engagement and stakeholder management

Engagement strategies were adapted to the type of community and the regulatory context:

- **Municipality-driven models (Hungary, Germany, Moldova/Sireți).** Local authorities played a central convening role. In Germany, the district united 27 municipalities into a single gKU. In Hungary, workshops were organised by municipalities for potential members. In Moldova, Sireți Municipality is the founding member.
- **Institutional model (Croatia).** IRENA leveraged the Istria Region's ownership of 18 public institutions as a guaranteed base of members, planning to add citizens and entrepreneurs from heritage-protected areas in a second phase.
- **Resident-initiated model (Moldova/Chișinău).** An individual resident is driving the urban REC, demonstrating that citizen initiative can emerge even in countries with nascent REC frameworks.
- **Pre-legislative engagement (Serbia, Moldova).** Both maintained stakeholder interest through consultations, awareness-raising and institutional dialogue despite the inability to formalise. AEER emphasised that direct on-site mentoring combined with stakeholder meetings was the most valuable activity for building trust.

A notable challenge identified by STRIA (Hungary) is that artificially capped residential energy prices undermine the financial motivation for citizen participation, making engagement more difficult even where legal frameworks permit RECs.

11.3 Technical and infrastructural readiness

Technical progress correlates with both legal maturity and local capacity:

Country	RES type	Planned capacity	Energy data available	DSO interaction
Hungary (Kunsziget)	Solar PV	50 kW	Collection complete	Planned 2027
Hungary (Nemesvámos)	Solar PV	~2,000 kW	Prod: 1.57 GWh; Cons: 5.23 GWh	Planned 2027
Hungary (Bp Freeport)	Solar PV + BESS	1,000 kWp + 3,900 kWh	Cons: 3.05 GWh	Request submitted
Croatia	Solar PV	713 kW	Prod: 962 MWh; Surplus: 300 MWh	Post-HERA registration
Serbia (residential)	Solar PV	3.5–4.5 kWp/house	Pending	Pending legislation
Serbia (industrial)	Solar PV	30–100 kWp/enterprise	Pending	Pending legislation
Moldova (Sireți)	Solar PV	75 kWp	Pending	Meeting held (Sept 2025)
Moldova (Chișinău)	Rooftop solar	40 kWp	Pending	Pending
Germany	Wind + solar	580 GWh target (300 PV + 280 wind)	Cons: ~1,400 GWh/year	Active

Croatia stands out for the depth of its technical analysis, having modelled surplus distribution scenarios across member categories and validated financial sustainability. Hungary's Nemesvámos site has the most ambitious capacity target (~2 MW), while Budapest Freeport includes battery storage (3,900 kWh), the only BESS in the project. A common technical challenge is DSO engagement: IRENA notes that software for automated sharing key calculation is critically needed as communities scale.

11.4 Barriers encountered and mitigation strategies

Barrier	Countries	Severity	Mitigation
Incomplete/restrictive secondary legislation	HR, RS, MD, HU	High	Roadmap approach; regulatory monitoring; legislative advocacy (HR detailed 6 amendments)
Artificial energy price caps reducing citizen motivation	HU	High	Focus on institutional members; await policy reform
Restrictive REC membership provisions	HR	High	Advocacy for legislative change; phased membership strategy
No dedicated REC legal form for mixed stakeholder types	MD	High	Government-initiated special law; AEER engagement with Ministry of Energy
Administrative complexity in founding process	HU, DE	Medium	Structured mentoring; step-by-step concept development
Political hurdles and delays	DE	Medium	Multi-stakeholder coalition building (27 municipalities + Landkreis)
Limited stakeholder experience with REC concept	MD, RS	Medium	On-site mentoring; awareness-raising; institutional dialogue
DSO integration uncertainty	HR, HU, MD	Medium	Early engagement; capacity requests; interim metering plans
Financial constraints and delayed reimbursements	MD	Medium	Donor programme mapping; phased implementation approach
Financial framework uncertainty	DE, HR	Medium	Detailed feasibility analysis (HR); Wirtschaftsplan development (DE)

Barrier	Countries	Severity	Mitigation
Limited precedent / no operational RECs nationally	HR, RS, MD	Medium	Transnational knowledge exchange; NRGCOM peer learning
Delayed institutional responses to formal requests	MD	Low-Med	Persistent follow-up; multi-channel engagement (meetings, podcast)

11.5 Mentoring process effectiveness

All partners provided feedback on the mentoring process. The findings show a consistent pattern:

Aspect	HU (STRIA)	HR (IRENA)	RS (REDASP)	MD (AEER)
Most valuable activity	Data-driven meetings building confidence	Legal navigation + feasibility studies	Transnational exchange + structured roadmaps	On-site mentoring + stakeholder meetings
Least valuable / improvement needed	Citizen engagement limited by price caps	Activities blocked by legislation; focus more on lobbying/workarounds	Technical steps limited by absent legislation	Generic theory sessions; people want concrete data
Additional support wanted	Full registration process guidance	Software for automated sharing keys	Tailored legal advisory for pre-legislative structuring	Contract templates, financial models, compliance guidance
Transferable to other orgs?	Yes, but requires	Yes, but limited by national context until legal reform	Yes, via regional	Yes, if org has institutional connections +

Aspect	HU (STRIA)	HR (IRENA)	RS (REDASP)	MD (AEER)
	appropriate expertise		development agency network	technical expertise
Advice for new REC founders	Ensure production capacity or optimise energy balance	Marathon not sprint; collect data immediately; watch legal changes	Align stakeholders early; prepare governance in advance	Start with local partnerships; engage DSO/regulator early; clear internal agreements

Key insights from the mentoring evaluation:

- **Practical, data-driven activities outperform theoretical sessions.** Both AEER and STRIA noted that concrete data and on-site consultations were far more effective than generic theoretical guidance.
- **The mentoring method is universally considered transferable,** but all partners add conditions: appropriate expertise (Hungary), institutional connections (Moldova), adapted legal context (Croatia), or regional networks (Serbia).
- **A gap exists in technical tools.** IRENA specifically identified the need for software to automate sharing key calculations, a challenge that will scale across all countries as communities grow.
- **Post-founding support is needed.** The current mentoring scheme focuses on creation, but the transition to operation (Croatia) and the registration process (Hungary) require continued guidance.

12. Cross-site comparison matrix

The matrix below summarises progress against the eight assessment criteria for each pilot country, providing a single-page snapshot of the pilot action's outputs.

Indicator	Hungary	Croatia	Serbia	Moldova	Germany
No. of pilot communities	3	1	2	2	1
Total members/stakeholders	28 (7+13+4 + interested)	24 (potential)	Core groups identified	20 (8+12 targeted)	27 municipalities + Landkreis
Legal form chosen	Yes	Yes	Yes	Yes	Completed
Professional concept ready	Completed	Completed	Draft	Draft	Completed
Energy/feasibility analysis	Completed	Completed	Pending	Pending	In progress
RES capacity planned	50 kW + 2 MW + 1 MW	713 kW	3.5–100 kWp/unit	75 + 40 kWp	580 GWh by 2033
DSO interaction initiated	Partial	Pending	Pending	Yes	Yes
Governance docs drafted	Yes	Yes	Yes	Yes	Completed
Registration / founding	2027 expected	Pending legislation	Pending legislation	June 2026 target	Completed
Key barrier	Price caps + regulation	6 legislative barriers	No legislation	Legal form gap	Political delays (resolved)
Mentoring transferable?	Yes	Yes	Yes	Yes	Yes

Note on reading: 'Completed' = fully achieved; 'Yes' = action taken / in progress as expected; 'Pending' = blocked by exogenous factor (most often legislative).

13. Key findings and lessons learned

13.1 What worked well

- **Diverse pilot design.** Nine communities across five countries with different models (municipal, institutional, residential, industrial, regional utility) provide a comprehensive evidence base for the White Paper.
- **Adaptable mentoring framework.** D.3.1.1 proved flexible enough to guide partners from pre-legislative settings (Serbia, Moldova) through to formal founding (Germany). All partners confirmed its transferability.
- **Data-driven feasibility analysis.** Croatia's detailed energy and financial analysis, and Hungary's quantified production/consumption data (Nemesvámos: 1.57 GWh / 5.23 GWh), demonstrate that rigorous planning strengthens the business case and member confidence.
- **Political coalition building.** Germany's achievement of uniting 27 municipalities and the Landkreis into a single gKU — requiring individual council resolutions across party lines — proves that ambitious, large-scale public-sector-driven models are achievable with sustained political engagement.
- **Proactive regulatory engagement.** Moldova's documented meetings with the Ministry of Energy, ANRE, CNED and DSOs, and Croatia's detailed six-point legislative analysis, demonstrate the value of advocacy and institutional dialogue as integral parts of the mentoring process.

13.2 What could be improved

- **Timeline realism.** Registration in 2027 (Hungary) and unknown timelines (Croatia, Serbia, Moldova) show that 30-month project timelines may be insufficient for full REC establishment in countries with incomplete legal frameworks.
- **Market distortion awareness.** Hungary's experience demonstrates that artificially capped energy prices can neutralise the financial incentive for citizen participation, a factor not anticipated in the original project design.
- **Post-founding mentoring gap.** The scheme focuses on creation but partners need guidance through registration (Hungary), the transition to operations (Croatia), and the initial operational phase.

- **Technical tool deficit.** Automated sharing key calculation software was identified as a critical need (Croatia). This gap will affect all countries as RECs scale beyond a handful of members.
- **Standardised quantitative data.** Some partners could not yet provide quantitative membership or energy data. Earlier standardisation of reporting requirements would improve comparability.

13.3 Transferability

All five responding partners confirmed the mentoring method is transferable, with conditions:

- **Universally applicable:** the structured approach (concept → feasibility → engagement → governance → registration) works across contexts.
- **Critical prerequisites:** appropriate technical expertise (Hungary), strong institutional connections (Moldova), active regional development networks (Serbia), and awareness of legal limitations (Croatia).
- **Minimum legal basis needed:** without at least a basic enabling framework, the method delivers preparatory outcomes (roadmaps, stakeholder readiness) but cannot complete full REC creation.

PART III: Synthesis and Conclusions

Part III draws together the methodology of Part I and the results of Part II, formulates recommendations that will feed into the project's White Paper (O.3.3), and confirms delivery of Output O.3.1 against the description set out in the NRGCOM Application Form.

14. Recommendations feeding into the White Paper (O.3.3)

The pilot action has produced nine concrete recommendations, grounded in the practical experience of partners operating across the full spectrum of REC maturity. They are organised into three categories: policy-level, operational, and methodological. Together they provide actionable guidance for policymakers, REC founders and future mentoring programmes in the Danube Region and beyond.

14.1 Policy-level recommendations

Recommendation 1 — Adopt enabling secondary legislation. Countries without operational REC frameworks (Serbia, Moldova) should prioritise adoption. Countries with restrictive provisions (Croatia, Hungary) should amend existing laws to remove barriers to membership, energy sharing and registration.

Recommendation 2 — Address market distortions. Artificially capped energy prices (as in Hungary) undermine the financial case for REC participation. Policy should ensure that energy pricing reflects the true cost savings of community renewable energy.

Recommendation 3 — Enable sharing from member-owned assets. Croatia's experience demonstrates that restricting energy sharing to community-owned facilities limits viability. Legislation should allow surplus sharing from member-owned RES installations.

14.2 Operational recommendations

Recommendation 4 — Invest in early-stage feasibility analysis. Croatia’s detailed energy and financial modelling should be promoted as a replicable best practice. Data-driven planning builds member confidence and demonstrates financial sustainability.

Recommendation 5 — Consider diverse organisational models. The project has validated multiple models: non-profit LLC (Hungary), association (Croatia), NGO (Moldova), non-profit association (Serbia), and communal company (Germany). No single model is optimal; the choice should match national law and local context.

Recommendation 6 — Engage DSOs early. Metering, grid access and surplus management are recurring challenges. Early DSO engagement (as demonstrated by Moldova with Premier Energy and Hungary with the Budapest Freeport request) prevents bottlenecks later.

14.3 Methodological recommendations

Recommendation 7 — Extend mentoring to post-founding operations. The mentoring scheme should include guidance for the registration process, initial governance setup and the first year of REC operation.

Recommendation 8 — Develop shared technical tools. Automated sharing key calculation software, standardised contract templates and financial modelling tools should be developed and made available as open resources for REC founders across the Danube Region.

Recommendation 9 — Embed legislative advocacy in mentoring. IRENA’s detailed six-point legislative analysis demonstrates that mentoring should include structured advocacy and policy dialogue as a core activity, not just technical and organisational support.

15. Conclusions: delivery against Output 3.1

Output O.3.1 — ‘A pilot action testing the jointly developed energy community creation mentoring scheme’ — has been delivered in full. The two underlying deliverables (D.3.1.1 and D.3.2.1) have been completed, integrated, and reproduced in this document. The pilot countries set out in the Application Form (Hungary, Croatia, the Republic of Serbia, the Republic of Moldova and Germany) have all been covered, with designated Project Partners acting as mentors and providing assistance in both legal and technical matters as foreseen.

15.1 Quantitative achievement

Pilot countries planned	5 (HU, HR, RS, MD, DE)
Pilot countries delivered	5 — fully covered
Pilot communities mentored	9 (HU: 3; HR: 1; RS: 2; MD: 2; DE: 1)
Mentoring partners active	5 (STRIA, IRENA, REDASP, AEER, DIT) plus IMRO support
Legal forms tested in parallel	5 (non-profit LLC, association, NGO, non-profit association of legal entities, gKU)
Communities formally founded by reporting date	1 (Regionalwerke Passauer Land, 26 March 2025)
Communities with finalised concept and feasibility	5 (3 in HU, 1 in HR, 1 in DE)
Communities with documented roadmap pending legislation	4 (2 in RS, 2 in MD)
Programme indicator 2.1.3 target value	1 pilot action
Programme indicator 2.1.3 achieved	1 pilot action delivered

15.2 Qualitative achievement

The comparative analysis reveals that legal-framework maturity remains the primary determinant of progress, but the relationship between regulation and outcomes is more nuanced than a simple present/absent binary. Even in EU Member States with transposed directives, specific regulatory barriers — restrictive membership provisions in Croatia, artificial energy price caps in Hungary, administrative complexity in Germany — can significantly delay REC establishment. In Moldova, the combination of regulatory uncertainty, limited stakeholder experience and institutional coordination challenges created a multi-layered barrier that required sustained engagement across multiple government bodies. In Serbia, the absence of secondary legislation prevented formal establishment but did not stop meaningful preparatory work.

The mentoring scheme (D.3.1.1) proved adaptable and was universally considered transferable by all responding partners. Practical, on-site consultations and structured roadmap methodologies were consistently rated as the most effective tools. Generic theoretical sessions were considered less valuable — stakeholders across all contexts demanded concrete data, practical steps and tangible results. This finding should inform the design of future mentoring programmes for RECs.

15.3 Contribution to subsequent project outputs

Output O.3.1 generates substantial and diverse evidence for the White Paper (O.3.3) and other downstream project outputs:

- Comprehensive technical and financial feasibility data from Croatia and Hungary.
- A detailed six-point legislative reform proposal from Croatia with direct relevance for EU policy harmonisation.
- Market distortion insights from Hungary that highlight the unintended consequences of price regulation on community energy.
- Regulatory engagement models from Moldova demonstrating how institutional dialogue can advance REC readiness even in pre-legislative contexts.
- The German Regionalwerke as a pioneering large-scale inter-municipal model with documented political process and governance structures.
- Serbia's dual residential/industrial pilot design providing a template for countries preparing for future legislation.

15.4 Closing statement

Through this pilot action, NRGCOM has built tangible institutional capacity, technical knowledge and regulatory readiness for renewable energy communities to be established, operate effectively and expand across borders. The mentoring scheme is fully developed, has been tested under highly diverse legal, social and economic conditions, and is now ready to be capitalised — by the Project Partners, by the Associated Strategic Partners, and by any local or regional authority in the Danube Region wishing to start its own REC creation journey. Together with Output 3.2 (the technological pilot), Output 3.1 forms the operational core of NRGCOM's contribution to PSO3 and to the wider goal of accelerating the green energy transition in the Danube Region.