Roll-out strategy

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Abstract

This deliverable presents the SHAREs+ roll-out strategy for the pilot communities supported in Bulgaria, Cyprus, North Macedonia, Romania and Ukraine. It provides a common implementation framework for advancing a diverse portfolio of citizen-led energy initiatives from their current stages of development towards implementation, operation and wider replication. The strategy translates pilot ambitions into **structured and actionable implementation pathways**, combining a common strategic approach with pilot-specific actions, responsibilities, decision gates and monitoring indicators. It addresses a broad range of energy-community models and technologies, including renewable and recovered heat, photovoltaic generation, energy storage, collective self-consumption, municipal and residential applications, agrivoltaics and shared e-mobility.

Designed as a practical implementation framework, the strategy identifies the evidence, stakeholder alignment and enabling conditions required for pilots to progress through successive stages of development. It establishes a decision-based approach in which technical feasibility, legal and administrative requirements, governance and ownership arrangements, financial sustainability and informed participation are progressively validated before projects advance to investment, procurement, implementation or expansion.

By combining a consistent portfolio-wide methodology with pathways tailored to national and local conditions, the roll-out strategy provides a common basis for **coordinated implementation, adaptive support, peer learning, monitoring and replication** across the five participating countries. In doing so, it supports the development of credible and transferable models for citizen-led energy initiatives and strengthens their potential for wider uptake beyond the SHAREs+ pilot communities.

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1 | Introduction

The SHAREs+ project supports the practical advancement of citizen-led energy initiatives across Bulgaria, Cyprus, North Macedonia, Romania and Ukraine at a time when energy communities are becoming increasingly relevant to the decentralisation, resilience and democratisation of energy systems. Across the five countries, local authorities, citizens, civil-society organisations, housing associations, businesses and technical actors are exploring new ways to produce, share and manage energy collectively. These initiatives respond not only to climate and renewable-energy objectives, but also to rising concerns about affordability, local energy security, infrastructure resilience and the need for stronger participation in the energy transition.

The diversity of the SHAREs+ pilot portfolio illustrates how these objectives translate into different local contexts. In **Bulgaria**, the emerging initiative in Pernik is examining the feasibility of recovering industrial waste heat from Stomana Industry and using it to supply nearby public, industrial and, potentially, residential consumers. In **Cyprus**, the Kourion pilot is developing a municipality-led renewable energy community based on distributed photovoltaic generation, with a phased approach that can progressively involve municipal buildings, schools, businesses and households. In **North Macedonia**, Green Commune Belica provides an example of community-led renewable energy already moving into practice, with rooftop photovoltaic generation installed on a community building and further development envisaged as the community formalises its governance and operating model. **Romania** demonstrates several complementary pathways, including a potential energy-community model for multi-apartment residential buildings in Brașov, municipality-led photovoltaic and storage initiatives, and community-based shared e-mobility. In **Ukraine**, emerging initiatives in Bucha, Samar, Sheptytskyi and Teofipol combine renewable generation and storage with local resilience, continuity of critical public services and new forms of cooperation between municipalities, citizens and businesses.

Within this context, the present deliverable establishes the roll-out strategy for the SHAREs+ pilot portfolio under Work Package 3. Its purpose is to provide a structured pathway through which the pilot initiatives can progress from their current level of development towards implementation, operation and wider replication. The strategy translates local ambitions into a sequence of practical steps, clarifies the evidence and decisions required at each stage, and defines the responsibilities, outputs and coordination arrangements needed to support credible project development.

A common framework is applied across the portfolio in order to ensure consistency, comparability and effective coordination between partners. At the same time, each pilot pathway is adapted to its specific socio-economic, institutional, technical and geographical conditions. This balance is essential because the initiatives differ significantly in terms of maturity, technology, governance model, stakeholder composition and access to finance. The roll-out strategy therefore provides both a shared implementation logic and tailored national and pilot-level routes capable of responding to the realities of each local context.

By structuring the progression from initial concept to implementation readiness, the document also supports longer-term replication. The experience generated through the pilot communities can inform future projects, strengthen local and national support ecosystems, and provide practical reference models for municipalities, citizens and organisations seeking to develop energy communities under comparable conditions.

The initiatives begin from different levels of maturity. Some have installed assets or secured funding; others remain at concept stage. Some have identified community organisations and governance

principles, while others are municipality-led and still need to establish formal participation and operating structures. The strategy therefore does not impose a uniform timetable. It identifies the next credible decision for each initiative and prevents premature investment or participation commitments based on unverified assumptions.

The strategy performs four functions: it establishes a common implementation logic; provides tailored pilot pathways; creates a basis for monitoring and adaptive support; and requires the documentation needed for replication. It should be read as a working implementation framework that can respond to technical findings, regulatory developments, stakeholder decisions and financing conditions during the project.

Chapter 2 defines the strategic principles and implementation dimensions. Chapter 3 provides a portfolio and readiness overview. Chapter 4 presents the common roll-out phases and decision gates. Chapter 5 contains tailored strategies for the five countries. Chapters 6 and 7 define consortium support, monitoring, and adaptation. Chapter 8 addresses replication and scale-up, and Chapter 9 concludes with the immediate next steps.

2 | Strategic approach to pilot implementation

2.1 From concept to implementation readiness

Moving from an initial concept to implementation readiness requires more than demonstrating that an energy initiative is technically possible. Citizen-led energy initiatives bring together technical, regulatory, organisational, financial and social considerations that need to develop in parallel and progressively converge into a credible implementation model. The purpose of the roll-out process is therefore to transform an initial idea into a sufficiently defined and evidence-based proposition on which the responsible actors can make an informed decision to proceed.

At the outset, initiatives may be based on an identified opportunity—such as the availability of a renewable energy resource, recoverable heat, suitable municipal or residential assets, or interest from prospective participants—while important assumptions remain to be tested. Progress towards implementation readiness involves systematically reducing these uncertainties. Technical assessments need to establish a feasible configuration based on reliable information about resources, demand, sites, infrastructure and network conditions. In parallel, the applicable legal and administrative pathway needs to be understood, including the approvals, registrations, contractual arrangements and institutional responsibilities relevant to implementation.

Technical and regulatory feasibility alone, however, is not sufficient. The initiative must also establish who will take decisions, own or manage the assets, operate the system and assume the associated responsibilities and risks. These governance and ownership arrangements provide the foundation for developing a credible business and financing model that explains how investment and operating costs will be covered and how the resulting benefits will be allocated among the participating actors.

Participation is equally important to implementation readiness. Prospective users and members should be engaged on the basis of a sufficiently defined proposition that allows them to understand the expected costs, benefits, responsibilities, risks and decision-making rights associated with participation. Expressions of interest or general stakeholder support are valuable during early development, but they should not be treated as firm commitments until participants have sufficient information to make an informed decision.

An initiative can therefore be considered implementation-ready when its preferred technical configuration is supported by sufficient evidence; the legal and administrative pathway is understood; governance, ownership and operational responsibilities have been agreed; the business and financing model is credible; relevant users have been engaged on the basis of a defined participation offer; and an accountable body is in a position to authorise the next stage, whether detailed design, procurement or installation.

Implementation readiness does not imply that every uncertainty has been eliminated. Complex energy initiatives will continue to face technical, financial, regulatory and organisational risks as they progress. What is essential is that the remaining uncertainties are clearly identified, their implications are understood, responsibilities for managing them are allocated, and the residual risks are considered acceptable and manageable. In this sense, implementation readiness represents a decision threshold: the point at which sufficient evidence, commitment and organisational capacity exist for an initiative to move responsibly from preparation towards delivery.

2.2 Strategic principles

The roll-out of the SHAREs+ initiatives is guided by a set of strategic principles intended to ensure that project development remains evidence-based, locally grounded and oriented towards sustainable implementation. These principles apply across the portfolio while recognising the significant differences in technology, maturity, stakeholder composition and institutional context between the initiatives.

① Context-Specific Development

Each initiative should follow a development pathway that reflects its particular starting conditions rather than being required to conform to a uniform implementation model. Technology, resource availability, prospective users, project maturity, institutional capacity and the applicable national and local framework all influence the sequence and type of actions required. The common SHAREs+ framework therefore provides consistent implementation logic, while allowing individual pathways to be adapted to the realities of each initiative.

② Evidence Before Commitment

Decisions with significant technical, financial or organisational consequences should be based on sufficiently validated information. Investment, procurement and binding participation should therefore precede the assessment of the relevant technical, legal, administrative and financial conditions. This approach helps ensure that stakeholders make informed decisions and reduces the risk of committing resources or participants on the basis of assumptions that may later prove unrealistic.

③ Phased Implementation

Complex initiatives should progress through manageable stages, with each stage producing the evidence and decisions needed to support the next. Phasing allows uncertainties to be addressed progressively and enables projects to test technical configurations, governance arrangements, financing approaches or participation models before committing to larger-scale implementation. Where appropriate, experience from an initial phase can therefore provide the basis for subsequent expansion.

④ Local Ownership and Accountability

Sustainable implementation requires clear responsibility at the local level. Each initiative should have an identifiable local lead during project development and, as it progresses, a clearly defined entity or arrangement responsible for ownership, operation and decision-making. Responsibilities should be sufficiently explicit to ensure that key actions are followed through, risks are appropriately allocated and the initiative does not depend indefinitely on external project support.

⑤ Financial and Operational Sustainability

External grants and public support can play an important role in enabling project preparation and initial investment, but they should not substitute for a credible long-term operating model. Each initiative should therefore consider not only how initial investment will be financed, but also how operating, maintenance and replacement costs will be covered over time, how benefits will be distributed and whether the proposed arrangements remain affordable and viable once external support ends.

⑥ Adaptive Management

Roll-out pathways should provide direction without becoming rigid implementation plans. New technical findings, regulatory developments, financing conditions, stakeholder decisions or changes in local circumstances may affect the feasibility or attractiveness of an initially preferred option. The strategy

should therefore allow pathways to be reviewed and adjusted when new evidence emerges, provided that changes are documented and remain consistent with the overall implementation logic.

⑦ Replication Through Documentation

Replication should be supported from the beginning of implementation rather than treated solely as an activity undertaken once a project has been completed. Key assumptions, data requirements, decisions, methodologies, governance arrangements, financing approaches and lessons learned should therefore be documented throughout the development process. Recording both successful approaches and options that were modified or rejected will help transform individual project experience into practical knowledge, templates and decision criteria that can support other communities and initiatives.

2.3 Common implementation dimensions

While each SHAREs+ initiative follows a pathway adapted to its specific context and level of maturity, implementation readiness depends on progress across a set of interconnected dimensions. Technical feasibility alone is not sufficient to move an initiative towards implementation; it must be accompanied by a workable legal and administrative pathway, clear governance and ownership arrangements, a credible business and financing model, informed stakeholder participation, and sufficient capacity to operate and sustain the initiative over time.

These dimensions provide a common structure for assessing progress across the SHAREs+ portfolio. For each dimension, the framework identifies a key strategic question that should be addressed during project development and the minimum evidence required to support informed decision-making. The purpose is not to prescribe identical solutions across countries or initiatives, but to ensure that critical implementation conditions are considered systematically and that decisions are supported by appropriate evidence. The dimensions are also interdependent and should therefore not be treated as separate or strictly sequential workstreams. Technical choices may influence costs and financing needs; governance arrangements may determine ownership and operational responsibilities; regulatory requirements may affect the available business models; and the terms offered to prospective participants will depend on decisions made across all these areas. As initiatives progress, evidence generated within one dimension should therefore inform and, where necessary, lead to adjustments in the others.

The table below summarises the six common implementation dimensions, the strategic question associated with each, and the minimum evidence expected to demonstrate sufficient progress.

Dimension	Strategic question	Minimum evidence
Technical configuration	What system or service is technically feasible and reliable?	Validated resource, demand, site, network and integration data; comparative scenarios.
Legal and administrative pathway	What approvals, registrations and contracts are required?	Mapped procedures, unresolved questions and confirmed institutional responsibilities.
Governance and ownership	Who decides, owns, operates and bears risk?	Governance concept, role allocation and draft agreements or statutes.

Business model and financing	How are investment, operating costs and benefits allocated?	Investments /Operational costs (CAPEX/ OPEX) model, financing route, affordability and sensitivity assessment.
Participation and legitimacy	Who must participate and on what terms?	Stakeholder map, defined offer, engagement evidence and decision procedures.
Operational capacity and replication	How will the initiative continue and be transferred?	Operating procedures, monitoring arrangements and replication documentation.

2.4 Decision-gate approach

To translate the common implementation dimensions into a practical development process, the SHAREs+ roll-out strategy applies a decision-gate approach. The gates provide a structured sequence of decision points through which initiatives can progress from initial concept development to implementation, operational validation and, where appropriate, scale-up or replication. Their purpose is to ensure that progression is based on sufficient evidence and informed decisions rather than on the completion of activities alone.

Each gate represents a defined level of confidence that must be reached before an initiative proceeds to the next stage. At each decision point, the available technical, legal, organisational, financial and participation-related evidence is reviewed against the relevant decision criterion. Where the required conditions are met, the initiative can advance. Where important evidence remains incomplete or critical risks have not been sufficiently addressed, further preparation, analysis or adjustment is required before progression. A gate may therefore result in a decision to proceed, proceed if specific conditions are fulfilled, revise the proposed pathway, or retain the initiative at its current stage until outstanding issues are resolved. SHAREs+ initiatives start from different levels of maturity and may therefore enter the framework at different points or progress at different speeds. More advanced initiatives may already satisfy some of the earlier gate requirements, while emerging concepts may require additional work. Importantly, the gates also create a link between project development, monitoring and adaptive management. They make explicit what evidence is required for the next decision, help identify unresolved constraints and support the targeting of technical, legal, financial or organisational assistance where it is most needed. In this way, the decision-gate approach provides both a quality-control mechanism for individual initiatives and a consistent basis for assessing progress across the wider SHAREs+ portfolio.

Gate	Purpose	Decision criterion
Gate 1 - Baseline confirmed	Confirm the resource, assets, users, data and applicable pathway.	Sufficient evidence exists to compare realistic implementation options.
Gate 2 - Preferred configuration selected	Choose the technical and organisational configuration to develop.	The preferred option is feasible, and its critical constraints are understood.

Gate 3 - Governance and business case confirmed	Agree ownership, operation, finance and benefit allocation.	An accountable structure and credible financing route exist.
Gate 4 - Implementation authorised	Approve detailed design, procurement or installation.	Site access, finance, approvals and sufficient user commitment are confirmed.
Gate 5 - Operational validation and scale-up	Assess performance and decide on expansion or replication.	Operational data support continued operation and a transferable model.

3 | Pilot portfolio and readiness overview

3.1 Portfolio overview

The portfolio combines national anchor pilots with related initiatives that can contribute to learning and replication. The table below summarises the current strategic starting points using information supplied by the national partners.

Country / initiative	Technology or model	Current strategic position	Immediate priority
Bulgaria - Pernik	Industrial waste-heat recovery and local heat community.	Concept in formation; source and user configuration not yet validated.	Complete heat-resource and demand assessment.
Cyprus - Kourion	Distributed PV and municipal-led renewable energy community.	Community structure and deployment model under development.	Agree governance and validate municipal-first technical scenario.
North Macedonia - Green Commune Belica	Community rooftop PV, self-consumption and reinvestment.	Installed 20 kW; further 20 kW under development; formalisation in process.	Formalise governance and operating model.
North Macedonia - Brvenica	13 kW community-linked PV.	Installed small-scale generation; community model requires definition.	Clarify ownership, users and benefit allocation.
North Macedonia - Gjorce Petrov	Schoolyard agriphotovoltaic demonstration.	Demonstration and learning site.	Define performance, educational and replication objectives.
North Macedonia - Karposh / related pipeline	Collective PV, heat pumps and public-building opportunities.	Concept and pre-feasibility stage.	Prioritise sites and complete technical baselines.
Romania - Caraiman, Brasov	Multi-apartment-building energy community.	Housing association and resident base exist; model not yet formalised.	Prepare building baseline and resident offer.
Romania - Buteni	Municipal PV, storage and prosumer/community options.	Municipal concept stage.	Compare feasible investment configurations.

Romania - Tulucesti	Municipal project linked to Just Transition funding.	Pre-development; energy audit and specialist capacity missing.	Complete audit and project concept.
Romania - Transylvania Energy Community	Shared light e-mobility and broader community network	Grant secured for initial mobility demonstration.	Validate utilisation, charging and governance model.
Ukraine - Bucha and Samar	Municipal rooftop photovoltaic and storage for critical services.	Early resilience concepts.	Complete site-specific pre-feasibility and load assessment.
Ukraine - Sheptytskyi	Citizen-business-municipality solar and shared EV charging.	Early multi-actor concept.	Validate site, legal structure and participation model.
Ukraine - Teofipol	Neighbourhood photovoltaic on municipal and private buildings.	Early community and energy-sharing concept.	Compare sites, users and surplus-allocation options.

3.2 Readiness classification

The portfolio should be managed as a sequence of differentiated projects rather than as one uniform deployment program. Installed or funded initiatives can produce early operating evidence, while concept-stage pilots should first reduce uncertainty. The common framework allows lessons from anchor pilots to be transferred without forcing all initiatives into the same technology, governance structure, or timetable.

Readiness stage	Definition	Typical next output
1. Concept definition	Objective and potential users identified, but core assumptions unverified.	Baseline data and stakeholder map.
2. Community in formation	Local lead and prospective participants identified; structure not final.	Governance concept and participation route.
3. Technical preparation	Sites, demand and system options under assessment.	Preferred technical configuration
4. Investment preparation	Technical option selected; governance and finance being finalised.	Business case and implementation decision package.
5. Early implementation	Procurement, installation or funded demonstration underway.	Operational procedures and verified performance data.

6. Operational validation	System and community functioning with measurable results.	Scale-up and replication decision.

Progression from one stage to another should be supported by evidence. For example, moving from concept definition to community formation requires more than general stakeholder interest: prospective participants, local leadership and an initial participation pathway should begin to emerge. Progression towards technical preparation requires sufficiently reliable information on sites, resources, demand and system options, while investment preparation requires the preferred technical configuration to be complemented by increasingly defined governance, ownership, financing and implementation arrangements. Early implementation begins when these preparatory elements are sufficiently mature to support procurement, installation or a funded demonstration, whereas operational validation requires evidence from the actual functioning of both the technical system and the associated organisational arrangements.

The classification should also be applied dynamically. As new technical, regulatory, financial or stakeholder information becomes available, an initiative's readiness may need to be reassessed. In some cases, new evidence may confirm progression; in others, it may reveal constraints that require additional preparation or reconsideration of the preferred approach. Remaining at an earlier stage – or returning to address an unresolved issue – should therefore not be regarded as a failure, but as part of an evidence-based development process.

For portfolio management, the principal value of the classification lies in identifying the next credible output for each initiative. This enables SHAREs+ partners to focus resources and support on the actions most relevant to the initiative's current maturity, while maintaining a common basis for monitoring progress across different technologies, organisational models and national contexts.

3.3 Portfolio implications

The initiatives identified in implementation of SHAREs+ project are at different stages of development and should therefore not be expected to follow the same implementation pathway or timetable. Some initiatives are still defining their concept and need to validate basic assumptions, while others have already installed assets, secured funding or begun preparing for implementation.

This means that priorities should be adapted to the readiness of each initiative. Early-stage initiatives should focus on clarifying their technical potential, identifying relevant stakeholders, understanding legal and administrative requirements, and exploring suitable governance and financing options. More advanced initiatives can focus on implementation, operation and the collection of practical evidence on technical performance, participation, costs and benefits.

The different levels of readiness also create opportunities for learning across the SHAREs+ portfolio. Experience from more advanced initiatives can help those at earlier stages by providing practical examples, methods and lessons learned. However, these experiences should be adapted to the specific conditions of each country and initiative rather than copied directly.

4 | Common roll-out framework

4.1 Phase 1 - Baseline and stakeholder alignment

The first phase establishes what is known, what is missing and who is responsible for providing the required information. It covers assets, sites, resource and demand data, prospective users, local leadership, institutional contacts and the current legal status. Each pilot should leave this phase with a maturity assessment, stakeholder map, data request and named local lead.

4.2 Phase 2 - Technical and regulatory validation

The second phase compares realistic technical configurations and maps the approvals, registrations, grid procedures and contracts that apply. Technical work should include demand and generation profiles, connection conditions, storage or backup requirements where relevant, site constraints and implementation phasing. Regulatory questions should be documented and escalated through coordinated dialogue rather than resolved through unverified assumptions.

4.3 Phase 3 - Governance and business model

The third phase defines membership, voting, ownership, operation, maintenance, data access, cost allocation, benefit sharing and risk. These decisions provide the basis for Investments and Operational costs estimates, revenue or savings models, affordability tests and financing. The selected structure must be capable of continuing after external project support ends.

4.4 Phase 4 - Participation and financing

Stakeholders should be invited to commit only when a credible offer exists. Engagement must explain costs, responsibilities, expected benefits, risks and decision rights. Financing packages may combine grants, municipal resources, member contributions, cooperative finance, commercial investment or guarantees, but each source must be matched to a defined cost and responsibility.

4.5 Phase 5 - Implementation preparation

All outputs are brought into one decision package. Detailed design, procurement or installation proceeds only when approvals, site access, governance, finance and user commitment are sufficiently confirmed. Where a gate is not passed, the pilot returns to preparation rather than progressing on unsupported assumptions.

4.6 Phase 6 - Monitoring, adaptation and replication

After implementation begins, operational and organisational performance is reviewed against the expected model. Variances are analysed and the pathway is adjusted. The pilot records data

requirements, decisions, contractual arrangements, financing structure, engagement methods and rejected options so that replication is based on evidence rather than a simplified success narrative.

5 | Tailored national and pilot roll-out strategies

For each country a common framework is applied, allowing the current starting point and strategic ambition, identifies the main steps required to advance the initiatives, clarifies the roles of the relevant actors, and sets out priority actions and expected outputs. It also identifies the key decision points and monitoring indicators that can be used to follow progress and highlights the experience and tools that may be relevant for replication.

The objective is not to prescribe a single model for energy communities across the five countries, but to provide a practical direction for moving each initiative forward from its current position. The national strategies therefore combine a shared implementation logic with the flexibility needed to respond to local circumstances and to adapt as new technical, regulatory, financial or stakeholder information becomes available.

5.1 Bulgaria

5.1.1 National pilot portfolio and strategic ambition

The Bulgarian strategy centers on the Pernik thermal energy-community concept, which would recover unused heat from Stomana Industry and supply nearby users. The strategic ambition is to create a technically dependable and financeable local heat service while generating a development model for other industrial or renewable-heat communities.

5.1.2 Starting point and implementation readiness

The initiative remains in formation. The indicative concept includes public or industrial users in an initial phase and possible later expansion to four multi-family buildings constitute as energy community. Heat quantity, temperature, weekly availability, user demand, network configuration, ownership, operation and financing are not yet validated. The interruption of industrial operation during weekends is a critical design condition.

5.1.3 Tailored roll-out pathway

The roll-out begins with a verified heat-resource and demand baseline, followed by comparison of user clusters, network options, backup arrangements and storage where justified. The preferred configuration then informs the legal route, governance structure and investment model. Residential engagement follows only after technical continuity, connection implications, affordability and service terms can be explained credibly.

5.1.4 Roles and stakeholder coordination

Stomana Industry controls source access and operating data; the Municipality of Pernik convenes local actors and identifies public and residential users; BSERC coordinates project preparation and national expertise. Engineering, legal and financial specialists prepare the evidence, while regulators, prospective operators, investors and users participate at defined decision points.

5.1.5 Priority actions and expected outputs

Priority action	Lead and supporting actors	Required output
1. Validate heat resource and demand	Stomana Industry, BSERC, engineering team	Verified heat profile, demand map and comparative technical scenarios.
2. Select phased user and infrastructure configuration	Engineering team, municipality, prospective users	Preferred initial user cluster, preliminary design and continuity solution.
3. Confirm legal, ownership and operating model	BSERC, municipality, industry, regulator, legal advisers	Regulatory pathway and governance heads of terms.
4. Build investment and financing case	Financial advisers, asset owners, municipality, potential financiers	Investments and Operational costs model, pricing principles and financing-gap assessment.
5. Prepare implementation and replication decision	Pilot steering group	Go/no-go package, implementation plan and reusable heat-community checklist.

5.1.6 Decision gates and monitoring indicators

Gate 1 confirms a usable and sufficiently reliable heat resource. Gate 2 selects the first user group and infrastructure configuration. Gate 3 confirms governance, operation and financing. Gate 4 authorises detailed implementation. Residential expansion remains conditional on continuity of supply, affordability and informed building-level decisions.

Monitoring should cover source and demand data completed, candidate users assessed, technical scenarios compared, regulatory questions resolved, governance agreements, investment estimates, financing sources approached and expressions of interest obtained. Energy savings and participating citizens should be reported as confirmed results only after design validation.

5.1.7 Replication potential

Transferable outputs include the heat-resource assessment method, user-selection logic, ownership and risk-allocation model, continuity assessment, financing structure and engagement checklist. Site-

specific industrial conditions must remain clearly distinguished from the elements reusable in other Bulgarian municipalities.

5.2 Cyprus

5.2.1 National pilot portfolio and strategic ambition

The Kourion pilot aims to establish a municipal-led renewable energy community based on distributed photovoltaic generation and progressive participation by public buildings, schools, businesses and households. The strategic ambition is to move from legal possibility and stakeholder interest to an operational governance and deployment model that other Cypriot municipalities can use.

5.2.2 Starting point and implementation readiness

The community structure, asset ownership, member rules, electricity-sharing arrangements, technical deployment sequence and long-term financing are still under development. Municipal assets provide the most manageable starting point, but private participation requires a transparent offer and operational evidence. The isolated electricity system and grid conditions make coordination with the competent authorities and distribution system operator particularly important.

5.2.3 Tailored roll-out pathway

The first stage establishes the legal and governance framework and confirms the municipal asset base. Technical assessment then compares generation, consumption, self-consumption and connection scenarios. A municipal-first implementation phase should validate procedures and performance before expansion to businesses and households. Financing and participation are developed in parallel with the selected configuration, not as separate promotional activities.

5.2.4 Roles and stakeholder coordination

The Municipality of Kourion provides local leadership and asset access; the national project partner coordinates support and stakeholder engagement; legal, technical and financial experts prepare the implementation package. The regulator and distribution system operator clarify the operational route. Prospective members participate in governance design and later assess the defined participation offer.

5.2.5 Priority actions and expected outputs

Priority action	Lead and supporting actors	Required output
1. Establish community governance	Municipality, project partner, legal advisers, prospective members	Draft statutes, membership rules and responsibility matrix.

2. Validate municipal-first technical scenario	Municipality, technical consultants, DSO	Site and demand baseline preferred photovoltaic and sharing configuration.
3. Confirm administrative and contractual route	Municipality, regulator, DSO, legal advisers	Permit, registration and contract roadmap.
4. Develop business and financing model	Municipality, financial advisers, funding institutions	Investments and Operational costs model, member contribution and funding plan.
5. Implement, evaluate and prepare expansion	Community management and stakeholder engagement, contractors, municipality	Operational first phase, verified results and expansion decision.

5.2.6 Decision gates and monitoring indicators

Gate 1 confirms the governance and legal structure. Gate 2 confirms technical and grid feasibility. Gate 3 confirms financing and member conditions. Gate 4 authorises municipal deployment. Gate 5 determines whether evidence supports expansion to commercial and residential participants.

Indicators include governance documents adopted, sites assessed, photovoltaic capacity validated, grid questions resolved, financing secured, participating organisations, implementation milestones and operational self-consumption or savings once verified.

5.2.7 Replication potential

The pilot can provide a municipal entry model, standard governance documents, a phased participation method, technical assessment template and evidence-based recruitment approach. Replication should account for local grid capacity and the institutional arrangements applicable in each municipality.

5.3 North Macedonia

5.3.1 National pilot portfolio and strategic ambition

The North Macedonian portfolio combines operational small-scale photovoltaic systems, a community organisation in formalisation, an agriphotovoltaic demonstration, building-energy concepts and a wider pipeline of public-rooftop and e-mobility opportunities. The strategic ambition is to use the most mature initiatives as anchor cases while establishing a common route for future community projects.

5.3.2 Starting point and implementation readiness

Green Commune Belica operates from a community building with 20 kW rooftop photovoltaic and a further 20 kW under development; formalisation remains in process. Brvenica has a 13 kW photovoltaic system but needs a clearer community model. Gjorce Petrov is a schoolyard agriphotovoltaic

demonstration. Other initiatives remain in formation or pre-feasibility. Secondary legislation, administrative procedures, grid interaction, finance and local expert capacity are still developing.

5.3.3 Tailored roll-out pathway

The portfolio is first classified by maturity. Belica and Brvenica are used to test formalisation, governance, self-consumption, export and benefit allocation. Gjorce Petrov focuses on technical and educational validation. Building and public-rooftop concepts proceed through site prioritisation and feasibility before participation or finance commitments. A shared legal and administrative pathway reduces duplicate uncertainty across the portfolio.

5.3.4 Roles and stakeholder coordination

SDEWES Skopje coordinates the portfolio and knowledge transfer. Community organizations, municipalities and pilot owners provide local leadership and data. The DSO and competent authorities clarify implementation conditions. Technical, legal and financial specialists support project preparation, while schools, residents, vulnerable households and businesses are engaged according to the maturity of each initiative.

5.3.5 Priority actions and expected outputs

Priority action	Lead and supporting actors	Required output
1. Map common legal and administrative pathway	SDEWES, authorities, DSO, legal advisers	Reusable registration, approval and grid checklist.
2. Classify portfolio and select anchor pilots	SDEWES and pilot organisations	Maturity matrix and sequenced work programme.
3. Validate pilot-specific technical configurations	Pilot owners, engineers, DSO	Production, demand and integration baselines.
4. Formalise governance and business models	Community organisations, municipalities, advisers	Draft statutes, ownership and financing models.
5. Establish replication and one-stop-shop function	SDEWES, Belica, national partners	Service concept, templates and project-development checklist.

5.3.6 Decision gates and monitoring indicators

The implementation of the SHAREs+ pilot portfolio is governed by a sequence of Decision Gates. Each gate serves as a quality-control milestone where specific evidence must be produced before the project is authorized to advance to the next level of maturity.

Key Implementation Indicators	Target Maturity Level	Phase Description	Decision Gate
• Completion of a comprehensive "data map. Identification of a local lead and core group of stakeholders.	Transition: Stage 1 to Stage 2 (Concept Definition to Community in Formation)	"The Reality Check" – Confirms the available resources (e.g., heat or solar), identifies primary users, and establishes the applicable legal route.	Gate 1: Baseline Confirmed
• Validated generation and demand profiles. Resolution of critical grid-connection or site-specific constraints.	Stage 3: Technical Preparation	"The Technical Choice" – Selection of the most feasible technical and organizational setup after comparing various scenarios (e.g., system sizing).	Gate 2: Preferred Configuration Selected
• Signed governance documents and statutes. A credible financing plan and CAPEX/OPEX model.	Stage 4: Investment Preparation	"The Commitment" – Agreement on ownership, decision-making statutes, and the long-term financial model (addressing both setup and running costs).	Gate 3: Governance & Business Case Confirmed
• Finalized permits and confirmed site access. • Official list of committed members based on a clear "participation offer".	Transition: Stage 5 (Early Implementation)	"The Green Light" – Final authorization to proceed with procurement, contracting, and the physical installation of the energy system.	Gate 4: Implementation Authorised
• Verified operational data (energy savings/production). Published "how-to" guides and replication checklists.	Stage 6: Operational Validation	"The Proof of Success" – Evaluation of the system's real-world performance to determine if the model is ready for expansion or replication.	Gate 5: Operational Validation & Scale-up

5.3.7 Strategic Monitoring Indicators

To track progress effectively, the strategy focuses on quality of evidence rather than simple activity counts. Projects are evaluated across four strategic dimensions:

- Legal & Institutional: Confirms that the "rules of the game" (registrations, approvals, and institutional responsibilities) are mapped and resolved.
- Technical Credibility: Ensures the system design is based on site audits and realistic energy demand, rather than unsupported assumptions.
- Financial Sustainability: Verifies that the initiative can sustain itself through a viable operating model after any initial grant funding is exhausted.
- Participation & Legitimacy: Confirms that participants are joining based on an informed decision – understanding their specific costs, rights, benefits, and risks

5.3.8 Replication potential

Belica and Brvenica can provide practical community and small- photovoltaic models; Gjorce Petrov can generate an Agri photovoltaic learning package; the public-rooftop work can create a site-prioritisation method. Replication requires separating technology-specific evidence from common legal, governance and project-development tools.

5.4 Romania

5.4.1 National pilot portfolio and strategic ambition

The Romanian portfolio covers multi-apartment housing, municipality-led renewable generation, public-sector project preparation and community-based e-mobility. Its strategic ambition is to create distinct but comparable pathways for resident-led, municipal and association-based initiatives, while using practical experience to strengthen the national support ecosystem.

5.4.2 Starting point and implementation readiness

Caraiman in Brasov manages six residential buildings and needs a building baseline, resident decision pathway and financing model. Buteni is comparing PV, storage, prosumer and community options. Tulucesti requires an energy audit, specialist support and preparation for Just Transition funding. The Transylvania Energy Community has secured EUR 45,000 for an initial light e-mobility demonstration and can produce early operational evidence.

5.4.3 Tailored roll-out pathway

The portfolio begins with a common legal and administrative map and a maturity assessment. Each pilot then completes its specific technical baseline. Caraiman develops a resident offer and governance structure; Buteni selects a municipal configuration; Tulucesti remains in preparation until the audit and co-financing conditions are clear; the mobility pilot validates utilisation, charging, governance and benefit allocation before broader expansion.

5.4.4 Roles and stakeholder coordination

CdE coordinates the common framework and links pilots with ANRE, DSOs, programme authorities, auditors, engineers and financial actors. Each initiative retains an accountable local lead: the

homeowners association, municipality or founding associations. Residents, citizens and public institutions are involved when project-specific offers are sufficiently defined.

5.4.5 Priority actions and expected outputs

Priority action	Lead and supporting actors	Required output
1. Confirm legal and administrative route	CdE, ANRE, DSOs, legal advisers, pilot leads	Reusable pathway for residential, municipal and mobility models.
2. Complete technical baselines	Housing association, municipalities, auditors, engineers	Preferred configuration for each pilot.
3. Define governance and ownership	Pilot leads, members, legal advisers	Draft agreements, decision procedures and operating roles.
4. Build financing and affordability plans	CdE, financial advisers, programme authorities	Investment models, grant/co-financing plans and sensitivity tests.
5. Authorise implementation and document replication	Romanian pilot steering group	Go/no-go packages and model-specific replication checklists.

5.4.6 Decision gates and monitoring indicators

Gate 1 confirms the legal route and project maturity. Gate 2 validates the technical configuration. Gate 3 confirms governance, finance and informed participation. Gate 4 authorises procurement or installation. The mobility demonstration may reach operational validation earlier than the other pilots and should be used to improve the shared framework.

Indicators include audits and technical studies completed, buildings and users assessed, governance decisions, investment estimates, grant applications or co-financing confirmed, resident expressions of interest, mobility utilisation and implementation decisions.

5.4.7 Replication potential

The portfolio can generate separate replication packages for multi-family buildings, municipal projects and shared mobility. Cross-cutting outputs include resident engagement methods, municipal preparation checklists, financing pathways and DSO coordination practices.

5.5 Ukraine

5.5.1 National pilot portfolio and strategic ambition

The Ukrainian portfolio links energy-community development with local resilience and the continuity of public services. Bucha, Samar, Sheptytskyi and Teofipol explore photovoltaic generation, storage, municipal assets, citizen and business participation and, in some cases, shared mobility or neighbourhood energy use. The strategic ambition is to demonstrate that resilience investments can also establish durable community ownership and governance.

5.5.2 Starting point and implementation readiness

All four concepts remain at an early stage. Technical sizing, site and load data, legal form, municipal participation, grid connection, asset ownership, financing, benefit allocation and long-term operation are not yet confirmed. Wartime infrastructure damage, municipal budget constraints and investment risk increase the importance of phased decisions and verified local data.

5.5.3 Tailored roll-out pathway

The first stage clarifies the current legal and administrative route and compares the maturity and public-service value of the four concepts. Bucha and Samar are logical candidates for early resilience pre-feasibility because municipal buildings and critical loads can be assessed within a defined perimeter. Sheptytskyi and Teofipol require broader citizen and business participation and should seek commitments only after site, governance and economic conditions are clear.

5.5.4 Roles and stakeholder coordination

Ecoaction coordinates policy dialogue, project preparation and community facilitation. Municipalities provide sites, load data and local legitimacy. Citizens, businesses and prospective prosumers contribute to governance and participation design. Technical, storage, legal and financial specialists prepare the evidence, while distribution-system actors and national authorities clarify implementation conditions.

5.5.5 Priority actions and expected outputs

Priority action	Lead and supporting actors	Required output
1. Map legal route for municipality-linked communities	Ecoaction, municipalities, authorities, DSO, legal advisers	Regulatory pathway and required agreements.

2. Complete portfolio and site maturity assessment	Ecoaction, municipalities, technical advisers	Anchor-pilot selection and data plan.
3. Undertake technical resilience pre-feasibility	Municipal asset owners, engineers, storage specialists	PV, storage, critical-load and connection scenarios.
4. Define ownership, participation and finance	Municipalities, citizens, businesses, advisers, funders	Governance concepts and financing-gap assessments.
5. Authorise pilots and produce municipal replication package	Pilot steering groups	Go/no-go decisions and resilient energy-community checklist.

5.5.6 Decision gates and monitoring indicators

Gate 1 confirms the legally workable route. Gate 2 validates sites, loads and technical configurations. Gate 3 confirms ownership, finance and stakeholder commitment. Gate 4 authorizes detailed design and procurement. Models involving community shares, private rooftops, or energy sharing remain conditional on transparent settlement and participation rules.

Indicators include sites assessed, critical loads documented, storage autonomy scenarios, regulatory questions resolved, governance agreements, financing sources approached, site access confirmed, citizen and business expressions of interest and implementation decisions.

5.5.7 Replication potential

Replication outputs should distinguish emergency-resilience requirements from the durable community model. Transferable elements include municipal asset assessment, critical-load methodology, ownership and participation structures, donor-finance packaging and transparent benefit allocation.

6 | Consortium-level implementation and support strategy

6.1 Coordination of pilot support

CdE, as lead beneficiary for the roll-out strategy, should maintain the common framework, consolidate progress information and facilitate comparison across the five national portfolios. National partners remain responsible for local coordination, data collection and stakeholder relationships. Support should be organised around the next decision required by each pilot rather than through identical activities for all communities.

6.2 Matching needs with project support

Pilot need	Appropriate support	Expected result
Legal or administrative uncertainty	Targeted legal analysis, coordinated authority dialogue and reusable Q&A.	Confirmed pathway and reduced duplicate interpretation.
Technical definition	Expert review, data templates, feasibility support and peer examples.	Comparable scenarios and preferred configuration.
Governance and participation	Model statutes, facilitation, peer mentoring and decision templates.	Accountable structure and informed membership route.
Finance and business model	Financial modelling, funding database, lender or programme engagement.	Credible financing package and visible bankability gap.
Operational learning	Peer Circle exchange, mentoring workshops and study visits.	Faster problem solving and reusable implementation knowledge.
Replication	Gateway resources, checklists and documented case methods.	Transferable support package for additional communities.

6.3 Escalation and peer learning

Issues that cannot be resolved locally should be recorded in a common issue log containing the question, responsible actor, evidence required, deadline and effect on the next decision gate. Cross-country exchange should focus on comparable problems - such as municipal governance, resident participation, storage, DSO coordination or funding - rather than assuming that one national solution can be copied unchanged.

6.4 Support governance

Each national portfolio should have a small steering arrangement comprising the national project partner and the accountable local pilot leads. The consortium-level coordination should review readiness, critical risks and support requests at agreed intervals. Specialist support is commissioned or mobilised only against a defined output and decision need.

7 | Monitoring and adaptive management framework

7.1 Monitoring purpose

Monitoring is intended to support decisions and corrective action. Activity counts alone are insufficient. Progress should be demonstrated through completed evidence, agreed responsibilities and passed decision gates. Where a pilot does not progress, monitoring should show which condition remains unresolved and what support or redesign is required.

7.2 Common indicators

Indicator group	Examples	Interpretation
Baseline readiness	Data requests completed; sites, users and assets assessed; maturity stage confirmed.	Shows whether the pilot can compare realistic options.
Technical progress	Feasibility study, preferred scenario, grid or continuity assessment.	Shows whether the proposed system is technically credible.
Institutional progress	Legal questions resolved, approvals mapped, responsible bodies confirmed.	Shows whether implementation has a predictable route.
Governance progress	Statutes, ownership, operator and responsibility matrix agreed.	Shows whether the initiative has accountable local ownership.
Financial progress	CAPEX/OPEX, funding plan, co-financing and sensitivity assessment.	Shows whether the preferred model can be financed and sustained.
Participation progress	Stakeholders engaged, decision procedures completed, expressions of interest.	Shows whether participation is informed and sufficiently credible.

Implementation progress	Go/no-go decision, procurement, installation and operating procedures.	Shows transition from preparation to delivery.
Operational and replication results	Generation, savings, resilience, use, membership and reusable tools.	Shows whether evidence supports continued operation and scale-up.

7.3 Adaptive review cycle

National partners should review pilot status against the decision-gate framework and update the next required output. A material change in regulation, site availability, cost, financing, user commitment or technical feasibility should trigger a pathway review. Adaptation may include changing the first user group, reducing or phasing capacity, selecting a different governance model, postponing a component or stopping an option that no longer presents a credible route.

7.4 Reporting discipline

Planning assumptions should remain clearly labelled until validated. Indicative investment, capacity, energy savings and participant figures should not be reported as achieved results. Operational indicators begin only when the system and organisational arrangements are functioning and data can be verified.

8 | Replication and scale-up strategy

8.1 Conditions for replication

Replication should begin when the original pilot has produced sufficient evidence on technical requirements, governance, costs, participation and institutional procedures. Replication does not mean copying every design feature. It means transferring a tested development method and adapting it to the new location.

8.2 Transferable outputs

- pilot maturity and data-readiness assessment;
- stakeholder and responsibility mapping templates;
- technical baseline and scenario-comparison checklists;
- legal and administrative pathway maps;
- governance, ownership and benefit-allocation models;
- Investments and Operational costs, affordability and financing templates;
- participation and informed-decision methods;
- decision-gate and risk-review tools;
- operational monitoring and replication notes.

8.3 Replication pathways by model

Model	Primary transferable element	Main adaptation requirement
Industrial or renewable heat	Resource-demand matching, continuity and asset-risk allocation.	Local heat profile, distance, users and applicable heat-supply rules.
Municipal photovoltaic and storage	Municipal asset baseline, public-service value and procurement pathway.	Grid capacity, budget, site and local public-procurement conditions.
Residential buildings	Resident decision route, cost-benefit offer and internal installation assessment.	Building ownership, metering, roof and member affordability.
Community-owned PV	Governance, member contributions and transparent benefit allocation.	Legal form, market rules and local demand profile.

AgriPV	Dual-use assessment and learning-site methodology.	Agricultural activity, land, education and technical design.
Shared e-mobility	Utilisation, charging, governance and cost-sharing model.	Mobility demand, charging sites and electricity supply.
Resilience communities	Critical-load, storage-autonomy and public-interest financing method.	Security conditions, network reliability and local service priorities.

8.4 Scale-up through the SHAREs+ ecosystem

The national Gateways, peer-learning activities, mentoring and expert resources can convert pilot evidence into accessible support for additional communities. Scale-up should prioritise initiatives that have a committed local lead, access to minimum data and a plausible route to governance and finance. The portfolio should demonstrate a range of models rather than promote one standard technology or legal structure.

9 | Conclusions and next steps

This roll-out strategy establishes a distinct and coherent implementation architecture for the SHAREs+ pilot portfolio. Its principal contribution is the conversion of diverse country and pilot information into a structured development process based on evidence, defined responsibilities, decision points and verifiable outputs. At the same time, the strategy preserves the specific characteristics of each initiative, including differences in technology, maturity, governance, stakeholder composition, financing needs and local institutional conditions.

This balance between common structure and local adaptation is one of the main conclusions of the deliverable. The SHAREs+ pilots cannot be advanced through a single standardised model, because they do not start from the same position and do not face the same implementation conditions. A municipality-led photovoltaic project, a residential energy community, an Agri photovoltaic demonstration, a shared e-mobility initiative, a resilience-oriented storage project and a waste-heat community require different technical assessments, governance arrangements, investment models and stakeholder-engagement methods. Nevertheless, they can all be supported through the same underlying implementation logic: establish a credible baseline, validate the preferred configuration, define ownership and governance, build a viable financing model, secure informed stakeholder commitment and proceed to implementation only when the necessary conditions have been demonstrated.

The strategy therefore avoids two opposite risks. The first would be to treat all initiatives as if they were equivalent and force them into a common timetable or uniform technical and organisational model. Such an approach would obscure differences in readiness and could lead to premature investment, unrealistic participation targets or inappropriate replication. The second risk would be to present the pilots as isolated case studies with no shared implementation method. This would limit the value of the portfolio as a source of transferable knowledge and would reduce the ability of the consortium to coordinate support, compare progress and identify common needs. The proposed architecture addresses both risks by combining a portfolio-wide decision framework with tailored national and pilot-level pathways.

A second major conclusion is that implementation readiness must be assessed through the quality of the evidence available for decision-making, rather than through the visibility or ambition of the initial concept. A pilot should be considered ready to advance only when its key assumptions have been tested and the relevant actors are able to make informed commitments. Depending on the initiative, this may require verified resource and demand data, a confirmed site or user base, a technically feasible system configuration, a clear legal and administrative pathway, agreed ownership and operating responsibilities, realistic capital and operating cost estimates, and sufficient stakeholder interest based on a concrete participation offer.

This means that progression should not be measured exclusively through installed capacity, number of participants or investment value. These indicators become meaningful only when they are supported by validated technical, organisational and financial arrangements. A photovoltaic system installed without a defined community governance structure, an agreed operating responsibility or a sustainable benefit-allocation model does not yet represent a replicable energy community. Similarly, expressions of interest collected before costs, rights and obligations are clear cannot be treated as durable participation commitments.

The strategy consequently places decision quality at the centre of pilot development. Each initiative should advance through explicit decision gates, with progression conditional on the completion of the

required outputs. These gates create a disciplined process for determining whether a pilot should proceed, be revised, remain in preparation or discontinue a specific option. They also provide a transparent basis for allocating project support and avoiding the continuation of activities that are not supported by sufficient evidence.

An important implication is that a negative or conditional decision can also represent a valuable result. A pilot that identifies an unworkable technical scenario, an unaffordable configuration, an unsuitable governance model or an unresolved legal obstacle can redirect resources before unnecessary expenditure occurs. When the reasoning, evidence and alternative options are properly documented, such a decision generates implementation knowledge that can be transferred to other initiatives. The value of the roll-out process therefore lies not only in confirming viable projects, but also in improving the quality and efficiency of project selection and development.

The immediate implementation priority is to confirm the maturity baseline and next decision required for every pilot. This should not be limited to a descriptive status update. Each national partner should establish, for every initiative, which assumptions are already supported by evidence, which remain unverified, which actor is responsible for resolving them and which output is required before the next decision can be taken. This maturity baseline should become the reference point for subsequent monitoring and support.

National partners should then establish or confirm local steering arrangements. Each pilot requires an accountable coordination structure capable of bringing together the relevant community representatives, municipalities, asset owners, technical advisers, regulatory actors, distribution system operators, financial experts and potential operators. The steering arrangement should not duplicate the formal governance of the future community. Its role during project preparation is to ensure that data are collected, responsibilities are allocated, unresolved questions are escalated and decisions are taken on the basis of a common work programme.

Priority technical, legal, administrative and financial tasks should subsequently be mobilised against specific outputs. Technical support should produce validated system configurations, not only general advice. Legal support should clarify the applicable route, required agreements and unresolved regulatory questions. Financial support should develop cost, revenue, affordability and financing scenarios rather than merely identify potential funding programmes. Stakeholder engagement should test a defined participation offer, including expected contributions, rights, responsibilities and benefits, rather than rely only on broad awareness-raising.

The pilot portfolio should also be managed according to maturity. More advanced initiatives should be used to generate early operational evidence, reusable documents and practical lessons. This may include governance rules, model agreements, data requirements, cost-allocation methods, stakeholder-engagement materials, monitoring procedures and implementation checklists. Concept-stage pilots should not be pressured to produce premature implementation results. Their immediate objective should be to reduce uncertainty and establish whether a credible development pathway exists.

This differentiated approach allows the consortium to generate visible progress without distorting the actual readiness of the portfolio. Early operational evidence from mature pilots can strengthen the support available to less advanced initiatives, while the systematic preparation of concept-stage projects can improve the future pipeline of viable energy communities.

A further conclusion is that replication should be based on transferable methods rather than the direct duplication of individual projects. Technologies, institutional settings, grid conditions, financing opportunities and community structures differ significantly between locations. The most valuable outputs are therefore not fixed technical blueprints, but the methods used to define and evaluate the project.

These include maturity-assessment criteria, decision-gate sequences, stakeholder-role matrices, governance options, financial modelling approaches, data checklists, regulatory maps and participation procedures.

Replication should distinguish clearly between three categories of knowledge:

elements that are directly transferable, such as the sequence of project-development decisions or standard data requirements;

elements that are adaptable, such as governance models, financing structures or engagement methods;

elements that are location-specific, such as grid capacity, municipal ownership arrangements, national legislation, resource availability or local affordability.

Making this distinction explicit will reduce the risk of presenting pilot-specific solutions as universally applicable and will improve the practical value of the deliverable for future users.

Monitoring should therefore focus on progression through the development process. The most relevant indicators are the completion and quality of the outputs required for decision-making: technical baselines validated, legal questions clarified, governance arrangements agreed, business models developed, financing sources assessed, participation offers prepared, expressions of interest confirmed and decision gates passed. Operational indicators such as installed capacity, renewable generation, energy savings, resilience benefits, financial savings or number of participating members should be added when verified implementation data become available.

The monitoring framework should also support adaptation. The roll-out strategy is based on the best available evidence at the time of preparation, but several pilots operate in changing regulatory, financial and institutional environments. New legislation, revised funding conditions, technical findings, stakeholder decisions or grid constraints may alter the preferred pathway. The strategy should therefore be reviewed periodically, with changes documented and justified against the agreed implementation logic.

The consortium-level support model is essential to this adaptive process. National partners are responsible for maintaining local engagement and progressing the pilot-specific work programmes, while cross-country coordination should identify common unresolved issues, mobilise specialised expertise and transfer relevant lessons between pilots. Support should be targeted according to the next decision required by each initiative rather than distributed uniformly across the portfolio.

Overall, the deliverable concludes that the successful advancement of citizen-led energy initiatives depends less on the availability of individual technologies than on the capacity to organise a credible development process around them. Technical feasibility, legal clarity, accountable governance, sustainable finance and informed participation must be developed as interconnected components. Weakness in any one of these areas can prevent an otherwise promising initiative from becoming operational or replicable.

By applying the decision-gate framework, maintaining adaptive and targeted support, and documenting transferable development methods, SHAREs+ can use its pilot portfolio to establish practical routes for citizen-led energy action across Southeast and Eastern Europe. The result is a disciplined implementation system that enables local actors to move from broad ambition to viable collective action, while generating the evidence, tools and experience required for wider replication.

The strategic value of the portfolio therefore extends beyond the individual pilots. Together, the initiatives can demonstrate how different types of energy communities may be prepared, evaluated and advanced under diverse national and local conditions. Their combined experience can strengthen municipal

capacity, improve the quality of future project pipelines, support more effective public and private financing, and contribute to the development of more accessible national support ecosystems for citizen-led energy initiatives.

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