English

ECOEMPOWER
Final Publishable Report

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ECOEMPOWER

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Executive Summary

ECOEMPOWER was launched to address one of the central implementation challenges of Europe's clean energy transition: energy communities are widely recognised as powerful instruments for citizen participation, renewable energy deployment, local value creation and social innovation, but they are difficult to establish and sustain in practice. They may involve different renewable energy technologies, legal forms, business models, governance structures, stakeholder groups, territorial conditions, regulatory frameworks and levels of technical capacity. This diversity is a strength, because it allows energy communities to respond to local needs, but it also creates complexity for citizens, municipalities, small businesses, public authorities and community organisers.

The project responded to this challenge by developing regional support ecosystems for energy communities in five European territories. Namely, these territories are found in Italy, France, Germany, Czechia and Greece. At the centre of these ecosystems are five regional One-Stop Shops (OSSs), designed to provide practical support to energy communities from early awareness and mobilisation through to project development, business modelling, governance, financing, technical planning and long-term operation. **ECOEMPOWER** also developed digital tools, participatory methods, business model guidance, social impact indicators, an online monitoring dashboard, peer-learning activities and policy recommendations.

The project's approach was based on the understanding that support to energy communities requires more than assigning responsibility to an existing regional institution or agency. An energy community OSS is an entity which evolves together with the context it serves. It is in constant interaction with other actors, both from the vertical, multi-level organisational viewpoint, as well as on the horizontal level, interacting with actors operating on the same regional level, but with adjacent areas of responsibility (i.e. energy is inherently cross-sectoral).

The OSS guidelines developed by **ECOEMPOWER** describe the steps for setting up such support structures: mobilising stakeholders, preparing a strategic plan, launching the OSS and implementing a service roadmap. They also aim to help new territories create their own OSS without starting from scratch.

By the final stage of the project, **ECOEMPOWER** had delivered a wide portfolio of outcomes. These include the establishment or development of OSSs in the five regions, a functioning Energy-ICT Platform, a participatory engagement framework, business modelling and financial planning tools, national and regional framework analysis, peer-to-peer learning activities, service roadmaps, social impact indicators and a dashboard for monitoring social outcomes.

The project has also generated important learning for replication. It showed that support for energy communities must be regional, accessible and adaptable. A common European toolbox is valuable, but it must be tailored to local languages, regulations, stakeholder capacities, energy infrastructure, public funding conditions and the maturity of existing initiatives. The project also confirmed the importance of social impact, relating it to democratic governance, energy justice, community empowerment, local awareness and social cohesion. But these impacts must be addressed and measured with care, particularly because they are less standardised than technical or economic indicators.

1 Empowering Europe's Energy Communities: The ECOEMPOWER Vision

This section introduces the overall vision behind **ECOEMPOWER** and explains why energy communities matter for Europe's energy transition. It frames energy communities not only as technical renewable energy projects, but as local and regional initiatives that can strengthen citizen participation, community ownership, social innovation, territorial identity and resilience. It presents the project's core response to the complexity of energy community development through supportive ecosystems at regional and local level, with One-Stop Shops (OSS), participatory engagement methods, digital tools and policy guidance working together. In this sense, the section sets the scene for the rest of the report by showing how **ECOEMPOWER** moved from a broad European challenge to a practical approach implemented across five regional contexts.

1.1 The Role of Energy Communities in Europe's Green Transition

Energy communities are increasingly recognised as a key building block of Europe's energy transition, as promoted through the new Citizens Energy Package of the European Commission (European Commission, 2026). These communities allow citizens, local authorities, small businesses and civil society organisations to participate directly in renewable energy production, self-consumption, energy sharing and local energy governance. In doing so, they help move the energy system away from a centralised model, towards one in which citizens are active participants, potentially benefiting the grids and energy markets through increased flexibility and market participation.

Their importance is not limited to energy, but lies in the combination of technical, social and democratic benefits they can provide. On the technical side, energy communities can support renewable energy deployment, local energy optimisation and more efficient use of distributed generation. On the social side, they can build trust, create local ownership, increase awareness and strengthen cooperation between people and institutions. On the democratic side, they can give communities a real role in shaping how energy is produced, used and valued in their territory.

The **ECOEMPOWER** Whitebook frames Renewable Energy Communities as initiatives that focus on environmental, economic or social community benefits rather than financial gains, and it defines the One-Stop Shop as an online and in-person service provider that supports RECs through services such as legal support, training and networking (Vordemfelde, 2026). This broad framing reflects a central insight of the project: energy communities need support structures that help them transform rights and opportunities into functioning local projects.

Energy communities also play a role in making the energy transition more acceptable and tangible. Local ownership can reduce resistance to renewable energy projects because citizens can see direct local benefits. Communities may create revenues, fund social activities, support energy-poor households, stimulate local employment or increase resilience. At the same time, **ECOEMPOWER**'s work shows that these outcomes do not happen automatically. They depend on governance quality, financing, technical choices, participation methods, regulatory clarity and long-term support.

The European context is therefore both promising and challenging. Energy communities are aligned with the goals of the European Green Deal, renewable energy expansion, local climate action and citizen participation. However, national frameworks remain uneven, and local actors often face uncertainty. **ECOEMPOWER** was designed to operate exactly at this intersection: between the European ambition for citizen energy and the local work needed to make it real.

1.2 The ECOEMPOWER Approach



ECOEMPOWER's approach was based on a practical question: what do energy communities need in order to emerge, develop and endure? The answer developed by the project was not a single tool or platform, but an ecosystem of support. This ecosystem includes seven main components, as explained in the following paragraphs, and depicted in the figure, below.

First, the project established and further developed **regional One-Stop Shops**. These OSSs act as entry points for energy communities and their supporting actors. They provide information, tools, contacts, advice and networking opportunities. Their overall purpose is to make the energy community formation experience easier to navigate.

Second, the project developed **digital tools for energy planning and decision-making**. The so-called Energy & ICT Platform supports forecasting, modelling, scheduling and financial assessment. It helps energy community managers and stakeholders understand future production and consumption patterns, investment implications and optimisation opportunities.

Third, the project created a **participatory engagement approach**. This recognises that energy communities rely on people's participation, cooperation and mutual trust. Engagement therefore requires a strategy, the identification of cultural values and tailored methods for the specific needs in every interaction and engagement step.

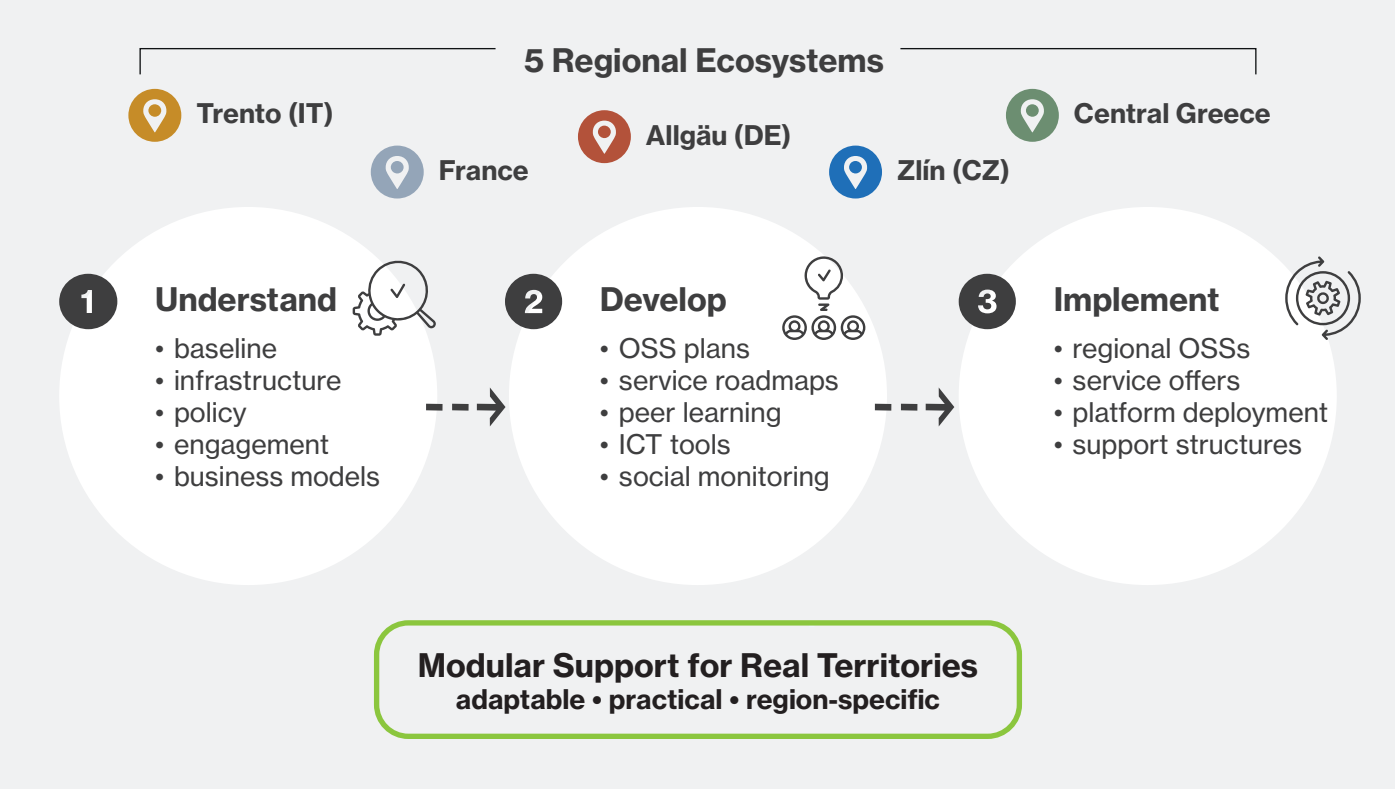
Fourth, **ECOEMPOWER** developed **business modelling and organisational guidance**. Energy communities need robust legal and organisational forms, clear missions, viable business models and financial planning. The project addressed these needs through business modelling support documents, and financial and time planning templates to help communities and OSSs plan and reflect on these issues.

Fifth, the project analysed **policy and regulatory conditions**. Energy communities' success depends on national laws, regional strategies, municipal support, grid rules, permitting procedures, financial incentives and administrative capacity. **ECOEMPOWER** therefore examined both national frameworks and regional/local framework conditions accordingly.

Sixth, the project developed **engagement indicators** to reflect the local or regional cultural values, and an indicators dashboard to present and monitor the social constitution of an energy community. Communities differ with regards to the social groups which shape them. These indicators provide insight into a community's diversity and are in line with the participatory design approach developed within the project.

Seventh, the **knowledge community** provides the broader public with a point of access into **ECOEMPOWER** results, including **ECOEMPOWER** tools, and facilitated through regional groups in each region's language which include the project's translated deliverables. Additionally, the knowledge community promoted cross-OSS collaboration through knowledge conferences and webinars, as well as discussion forums, event promotion and a platform for direct exchange among participants.

1.3 The Journey: From Idea to Action Across Europe



ECOEMPOWER was implemented across five regional ecosystems with different starting points. These territories included the Autonomous Province of Trento in Italy, Auvergne-Rhône-Alpes and Grand Est in France, Allgäu in Germany, the Zlín region in Czechia and the Region of Central Greece. The project therefore worked across different languages, governance systems, energy infrastructures, levels of OSS maturity and policy environments.

The journey began with understanding the regional conditions. Baseline work examined existing or planned energy communities and the stage of each region's supportive ecosystem (most of which were

represented by an organisation leading the creation or development of the region's OSS).

Broadly, technical work initiated by assessing the available infrastructure, the available data, and by developing relevant use cases for energy modelling. Policy work analysed national and regional enabling frameworks. Social engagement work developed a framework on how citizens and stakeholders could be involved. Business modelling work considered energy community success factors, purpose classes, business models and organisational forms.

This diagnostic phase was necessary because the project was not developing generic solutions for an abstract user. It was developing support mechanisms for real territories. For example, the technical infrastructure analysis highlighted that each pilot site was at a different stage of development, which could affect the quality and availability of information (Kotali & Ntovom, 2025). That variability became an important design principle: tools and services needed to be modular, adaptable and capable of working with incomplete or changing data.

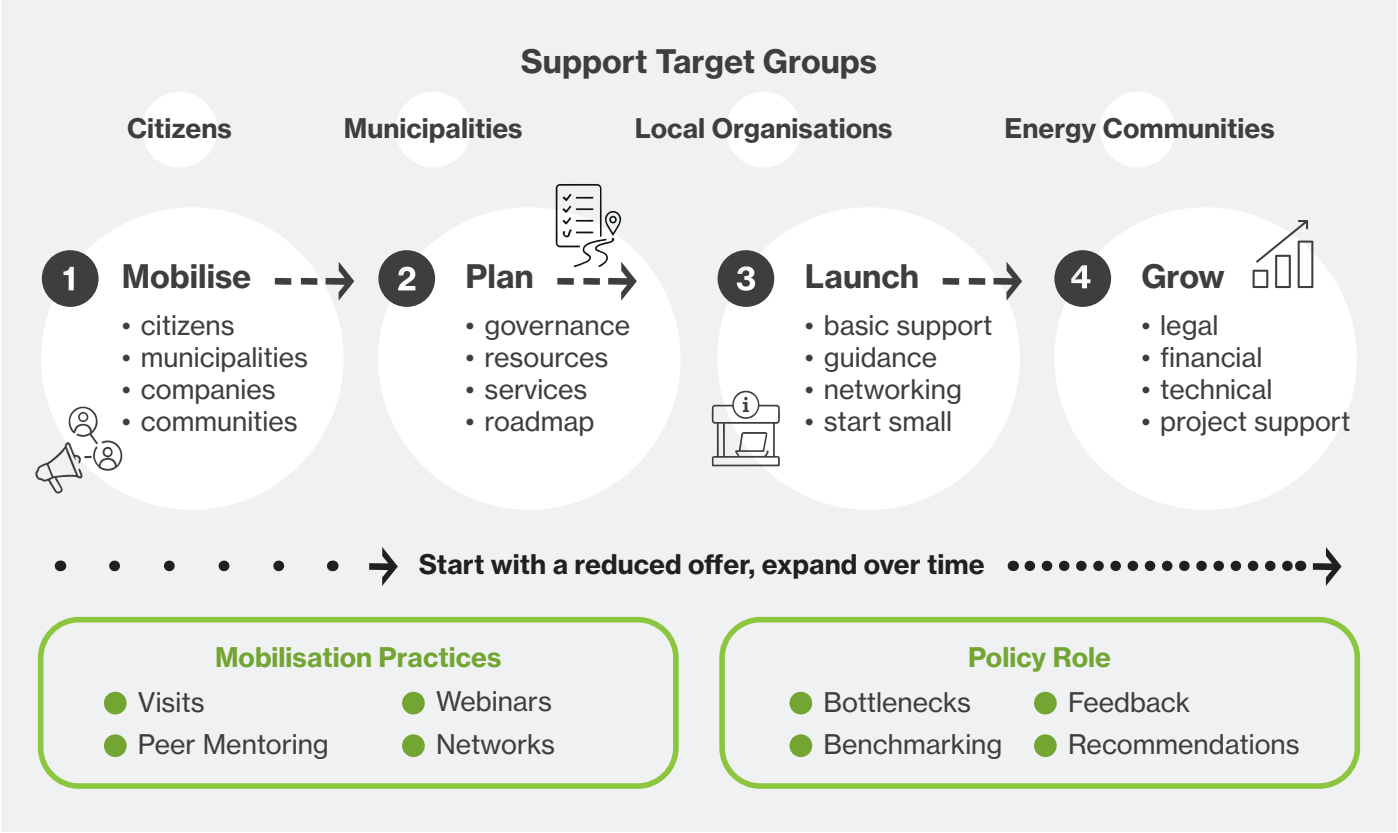
The next phase translated this understanding into concrete structures and outputs. Strategic plans were prepared for each OSS, regional business models were elaborated, peer-learning workshops were organised, service roadmaps were drafted, digital platform functionalities were developed, and pilot data began to feed social impact monitoring.

By the final phase of the project, the work had moved from concept to implementation. OSSs were not only described in deliverables but evidenced through websites, commitment letters and regional service offers. The ICT Platform was developed and adapted through multiple iterations, to provide an easier interface for non-technical users, and to enable its migration to a publicly accessible version (Kotali, 2025). Knowledge conferences, as well as other knowledge exchange activities took place, and the outcome of stakeholder engagement activities in each region was put into action, for example by developing the offering of the OSSs.

2 Turning Ideas into Reality: What ECOEMPOWER Delivered

This section focuses on the concrete results produced by the **ECOEMPOWER** project and highlights that **ECOEMPOWER** did not deliver isolated outputs, but an integrated support framework for energy communities at different stages of development; spanning from early awareness and mobilisation to planning, operation, evaluation and replication. It also shows how the project combined technical, social, organisational and financial dimensions, recognising that successful energy communities require much more than renewable energy technology alone.

2.1 A One-Stop Shop for Energy Communities



ECOEMPOWER's most important contribution is the creation and development of regional One-Stop Shops for energy communities in each of the five regions involved in the project. The OSS model responds to a clear need: energy communities often involve non-professional members who require structured, understandable and trustworthy support. The OSS guidelines state that the objective of an OSS is to provide support to RECs in a territory, and they explicitly note that a well-structured and tailored approach is necessary to adequately support energy communities (Poize & Levannier, 2025).

The **ECOEMPOWER** OSS development model followed a structured pathway, including stakeholder mobilisation, strategic planning, OSS launch and operation, and the implementation of a service roadmap. The OSS guidelines also recognise that setting up an OSS takes time; with the preparation phase usually taking around 1.5 years, and the operational phase beginning with a

reduced service offering which is intended to develop progressively as resources become available (Poize & Levannier, 2025), similarly to capacity building requirements in other areas of the economy.

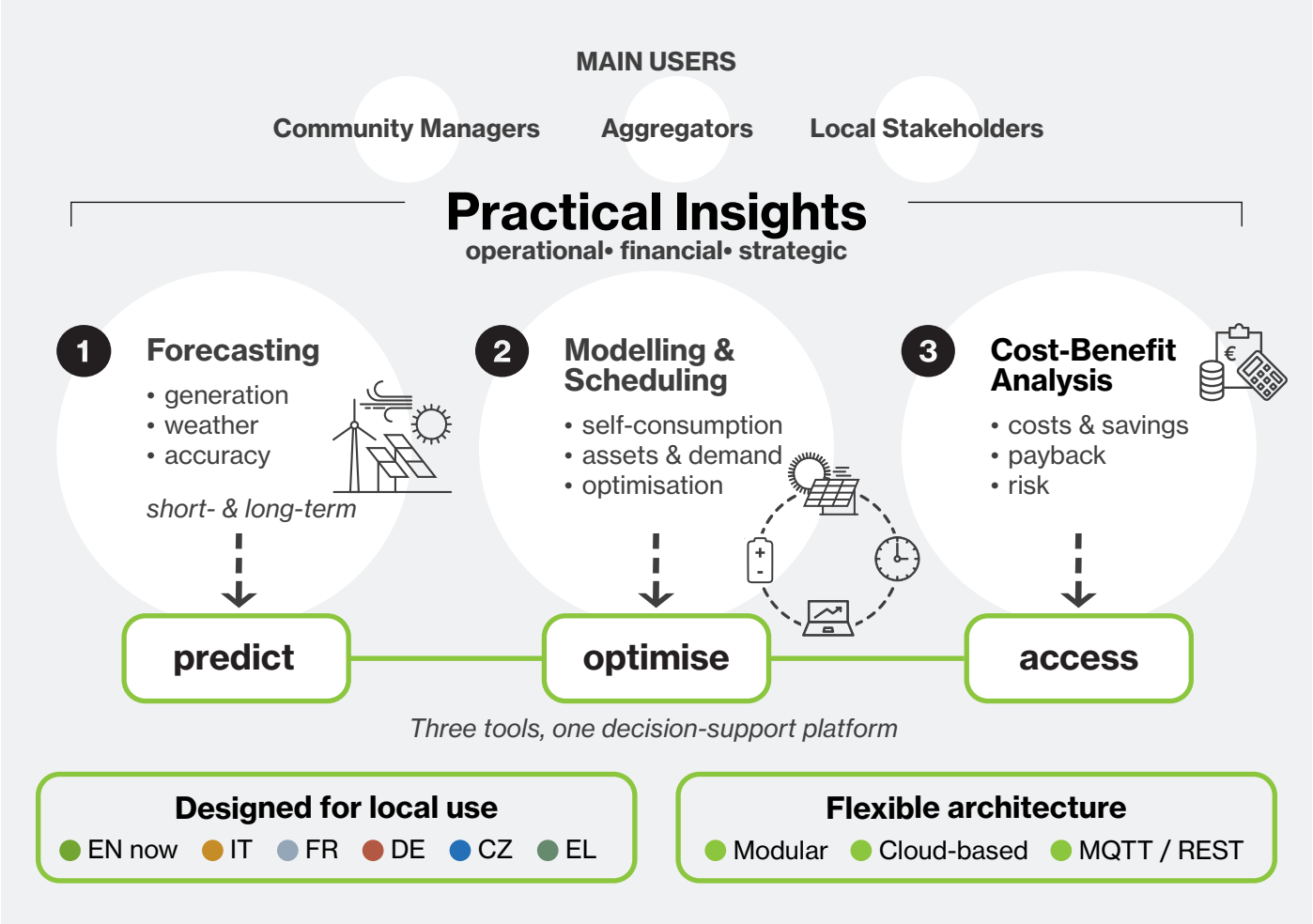
This staged approach is important because it avoids overpromising. Energy community support must be credible. A new OSS does not need to offer every service immediately. It can begin with awareness raising, basic guidance, networking and links to existing tools, then gradually expand into more advanced legal, financial, technical and project development assistance.

ECOEMPOWER's OSS-related work also showed that stakeholder mobilisation is not a one-off communication exercise. It requires careful attention to different target groups in order to adequately serve the needs and interests of each when promoting and carrying out the corresponding engagement activities. For example, citizens may be interested in being involved in the energy transition in their region, in regional benefits and in knowledge on the potential business models, municipalities may need reassurance that RECs can deliver quality projects and contribute to local objectives, and local companies need clarity about their role and commitments when forming part of an energy community. Overall, energy communities need easy-to-use resources and supporting materials to build strong business models which go beyond monetary benefits to its members.

The project identified several mobilisation practices that can help. Among them, visits to existing RECs, webinars, bilateral meetings with municipalities, networking between elected officials, engagement with chambers of commerce, mentorship between experienced and emerging energy communities, and attention to how people are welcomed into projects. These practices are especially relevant because energy communities are often built on trust and personal motivation.

Importantly, the OSSs have a policy-facing role, facilitating the vertical translation of national and international frameworks, and aggregating feedback from local communities to improve the quality of said frameworks from knowledge stemming from the bottom-up. Additionally, these may learn from other regions and promote best-practice approaches. This makes them more than advice desks; they are learning infrastructures for the energy transition, and a much-needed node in the institutional network of innovative democracies.

2.2 Smart Energy Made Simple: The ICT Platform



The **ECOEMPOWER** Energy-ICT Platform was developed to help energy communities make informed operational, financial and strategic decisions. Its aim is to translate energy data into practical insights that communities can use. Energy communities often need to understand when renewable energy will be produced, how demand can be managed, how self-consumption can be optimised, and whether investments are financially viable. These are complex questions which are best addressed through advanced methods of modelling and simulation. Thus, the platform addresses this through three complementary tools:

1. the **Energy Forecasting Tool**,
2. the **Energy Modelling and Scheduling Tool**, and
3. the **Cost-Benefit Analysis Tool**.

These tools are designed to help community managers, aggregators and local stakeholders predict renewable generation, optimise consumption and resource use, and assess investment viability (Kotali, 2025).

The **Energy Forecasting Tool** supports both short-term and long-term planning. It allows users to compare forecasts with actual photovoltaic generation, compare model performance, review future production forecasts and examine weather metrics such as irradiance and cloud cover. The platform also provides accuracy indicators, helping users understand the reliability of forecasts.

The **Energy Modelling and Scheduling Tool** helps communities understand how energy assets and consumption patterns interact. It can support decisions about self-consumption, scheduling, resource allocation and community-level optimisation. This is

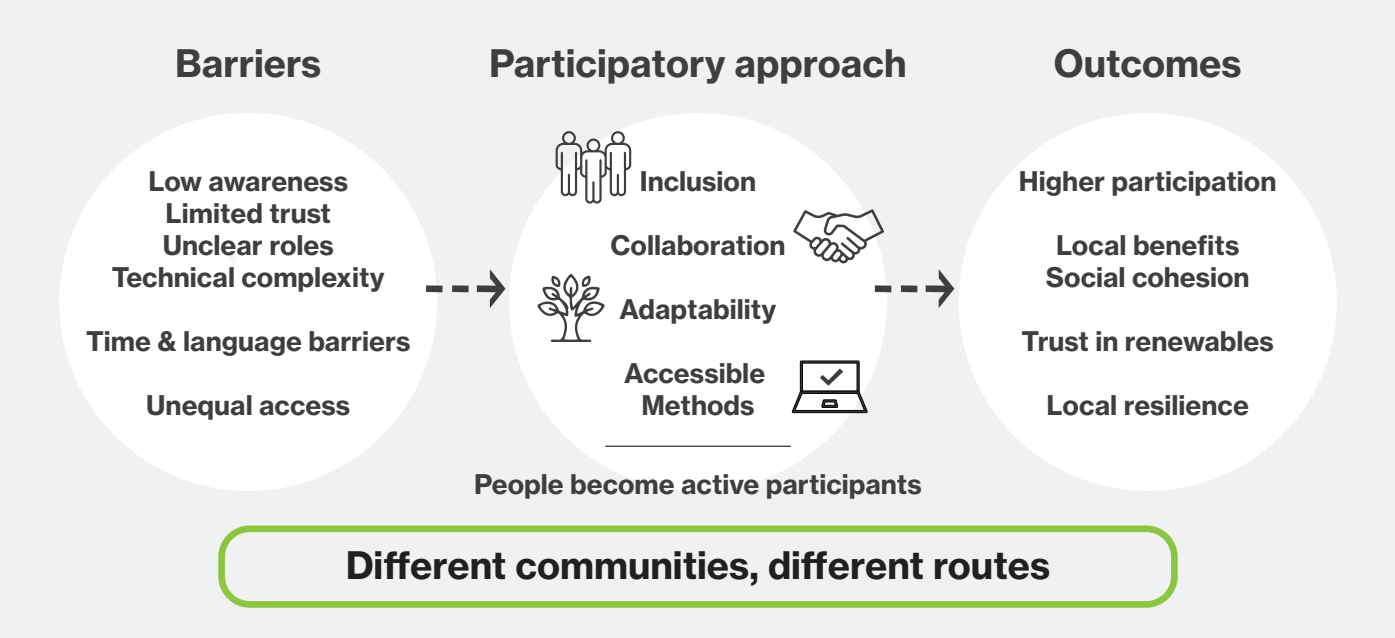
particularly valuable for communities seeking to use energy locally rather than simply exporting excess production, supporting them with knowledge of their optimal operation.

The **Cost-Benefit Analysis Tool** supports financial decision-making. Energy communities must evaluate investments in renewable generation, storage, flexibility, energy efficiency or shared infrastructure. The CBA tool helps users compare costs, savings, payback periods and financial risks. This makes financial planning more transparent and supports discussions between communities, municipalities, investors and service providers.

The platform is also designed with localisation in mind. The current version is in English, but future versions are planned in the native languages of the **ECOEMPOWER** energy communities: Italian, French, German, Czech and Greek. This is essential because language barriers can limit participation and reduce their utilisation and usefulness.

The technical specifications also emphasise modularity. The **ECOEMPOWER** Platform is designed as a flexible suite of tools that can be used together or independently, and it can connect with external platforms. It is supported by a cloud-based data management system using standard protocols such as MQTT and REST (Kotali & Ntovom, 2025). This modular design makes the platform more adaptable to different regional conditions and levels of data availability.

2.3 Designed with People, for People



A key message of **ECOEMPOWER** is that energy communities must be co-created with people, and not only with energy systems in mind. The project therefore developed a participatory approach to engagement and community building. This approach is necessary because many barriers to energy community development are social (e.g. limited awareness, lack of trust, unclear roles, uncertainty about benefits and unfamiliarity with legal or financial procedures). Moreover, it is people who build and shape the support systems in each region, as well as the communities themselves.

The work on social impact has highlighted the challenge of assessing social outcomes. It notes that social impacts are less tangible and less standardised

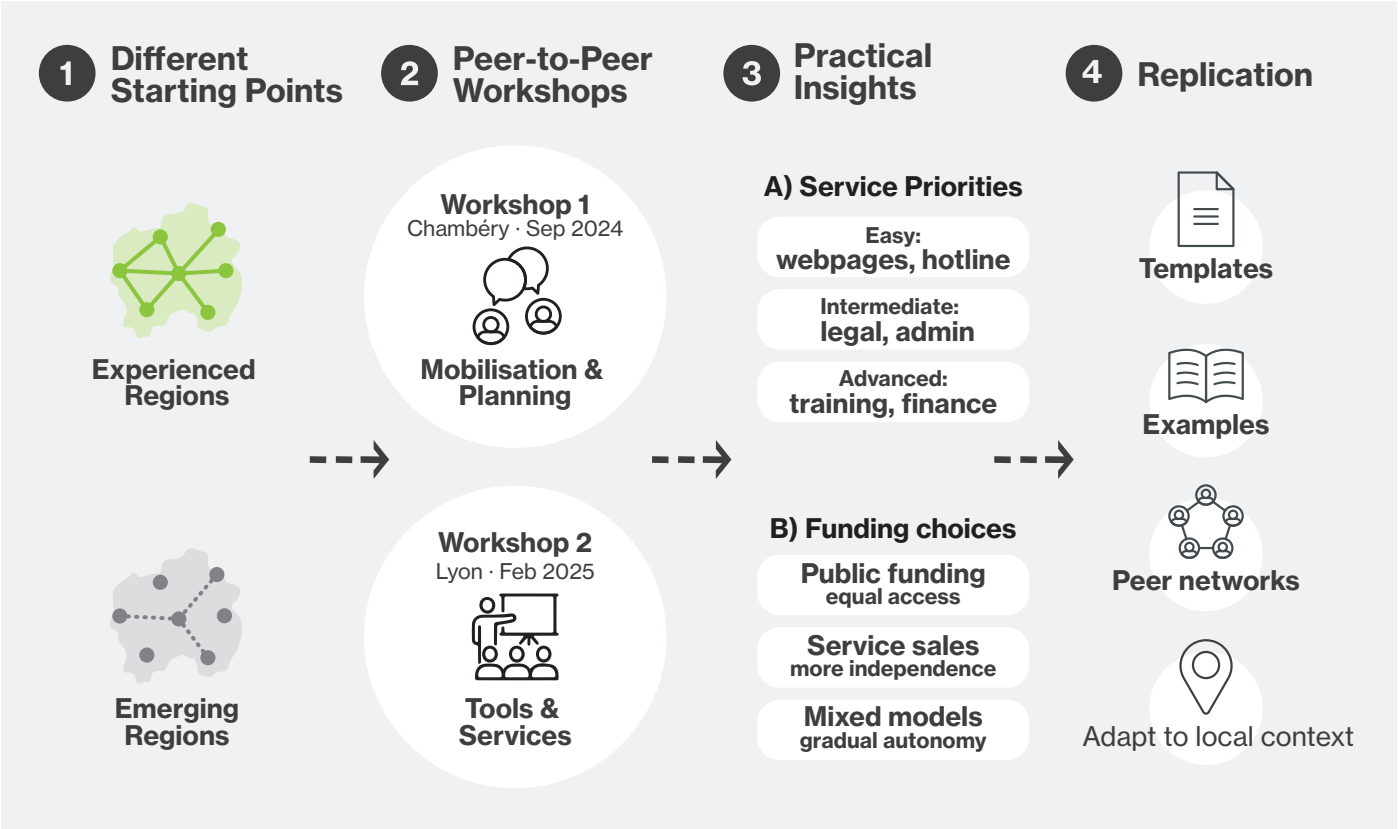
than economic and environmental effects, even though energy communities can contribute to social cohesion, local resilience and democratic governance (Bruni, D'Andrea, Dudka, & Zampino, 2025). Social participation is not easily reduced to numbers, but it is central to the impact and success of energy communities.

ECOEMPOWER's participatory work therefore focused on inclusion, collaboration and adaptability. The engagement strategies considered the target groups of each engagement action, how information is presented, what barriers exist and how citizens can become active participants. The project recognised that different communities require different engagement routes. For example, a school-based energy community, a rural cooperative, a municipal self-consumption initiative and a regional network of communities will not use the same engagement process.

The OSS peer-learning activities reinforced the importance of accessibility. Partners explicitly warned against proposing elitist tools and recommended that support materials should be easy to understand and use, preferably based on free or open solutions where possible. This principle is important because if tools are only usable by experts, energy community development is put at risk by limiting member engagement.

The project also showed that engagement is strongest when linked to concrete local benefits. Citizens and municipalities are more likely to participate when they understand how an energy community can help reach renewable energy targets, generate local revenue, strengthen social links, reduce misinformation and build trust in renewable energy projects (Poize & Levannier, 2025).

2.4 Connecting Communities Across Europe



ECOEMPOWER created structured peer-learning opportunities to connect and engage actors across regions; enabling them to learn from each other. This was especially important because the five regions

had different levels of experience. Some partners had already worked with established energy community networks, while others were building new, energy community-related structures during the project.

The project organised two peer-to-peer workshops as side events of partner meetings in Chambéry in September 2024 and Lyon in February 2025. The first workshop focused on stakeholder mobilisation and strategic planning for OSS creation, and the second focused on tools and services an OSS can offer (Poize & Levannier, 2025). These workshops were not simply information-sharing events. They created space for partners to compare challenges, generate new ideas and learn from the leading OSS, formed by AURA-EE and officially named the Association des Centrales Villageoises, serving (i.e. providing support to) the whole country of France.

The peer-learning activities produced practical insights (Poize & Levannier, 2025). Among them, they identified different levels of resource (or service offering) complexity, thus helping OSSs prioritise:

- **easy services** such as basic webpages, contact lists, videos, hotlines and mentoring
- **intermediate services** such as legal advice, business plan templates and administrative support
- **difficult services** such as full toolkits, advanced training, technical services and financial advice

Peer learning also highlighted governance and funding choices. Public funding can allow equal access for emerging RECs, but its durability is not guaranteed. Service sales can create independence, but emerging RECs often lack the budget to request them from existing ones. The project therefore identified the need for mixed and evolving business models, including differentiated fees and gradual autonomy (Poize & Levannier, 2025).

Overall, **ECOEMPOWER**'s peer learning activities show that OSS replication requires structured exchange, and that inexperienced territories should not have to invent new OSS models alone. Instead, they can use available resources, follow existing examples and interact with peer networks, but must adapt the learnings to local conditions.

2.5 Facilitating Further Cross-OSS Engagement



Alongside the regional OSSs and technical tools developed within **ECOEMPOWER**, the project also identified the need for a shared space where knowledge, experience and practical learning can continue to circulate across regions. The **ECOEMPOWER** community platform responds to this need by offering a web-based social platform for exchange between OSS teams, energy community practitioners, local and regional authorities, project partners and other stakeholders working on community energy.

The platform can be understood as a bridge between local implementation and European learning. **ECOEMPOWER** has shown that each regional ecosystem faces specific conditions, but at the same time many of the underlying challenges are shared. The community platform creates an opportunity to bring these experiences together, so that each region can learn from the others, while facilitating an easy point of access for **ECOEMPOWER** results.

This role is directly linked to the peer-to-peer learning activities carried out during the project. These activities enabled partners to share experience and receive feedback from organisations with more established OSS experience. The **ECOEMPOWER** community platform can extend this model beyond individual workshops by making peer learning more continuous, accessible and interactive. Through the platform, OSS teams could exchange practical resources, compare service models, discuss common challenges and share examples of what works in their region.

The community platform is particularly relevant because the project has shown that local and regional authorities often have many possible ways to support energy communities, but may lack capacity, resources, time or structured knowledge. Knowledge sharing can reduce the resources needed to provide support, and the community platform intends to facilitate this knowledge exchange, while providing access to the project's findings.

In practical terms, the platform can support cross-OSS collaboration in several ways:

- by enabling OSSs to ask questions and receive input from peers in other regions

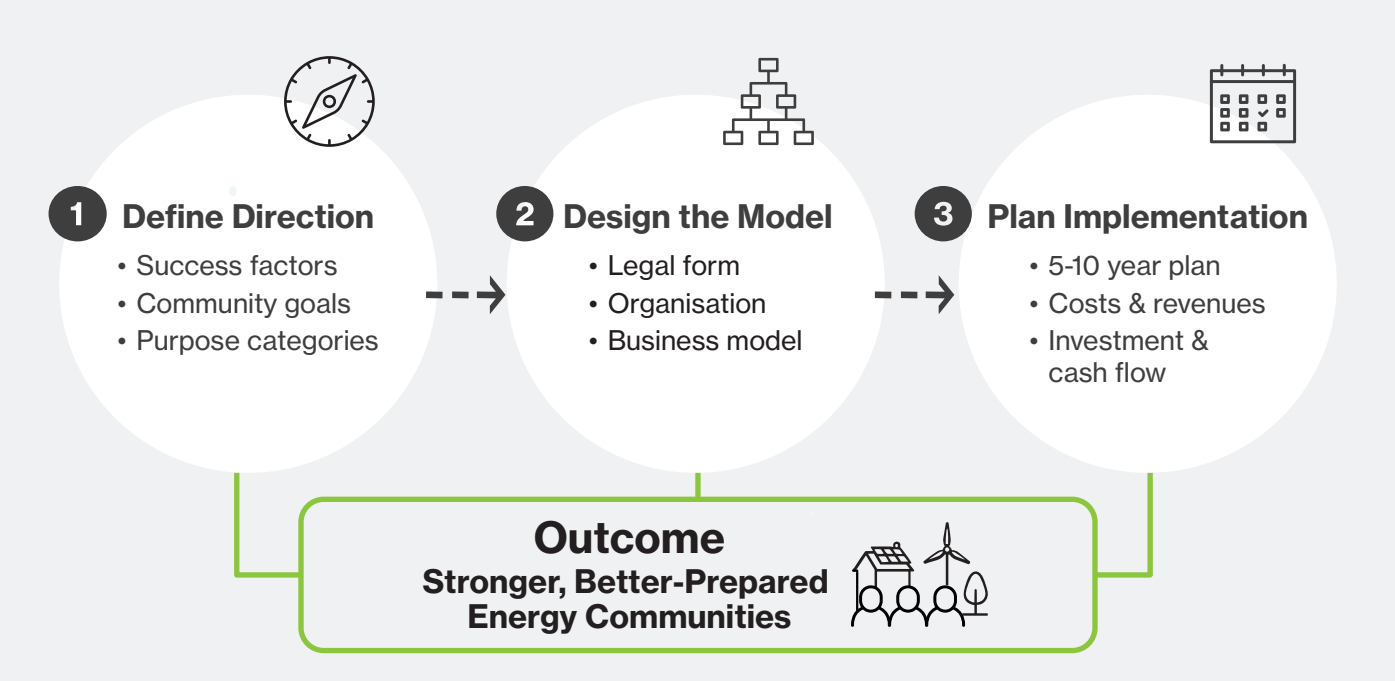
- ⇢ by collecting practical examples of services, tools and regional approaches
- ⇢ by supporting thematic discussions on issues such as financing, legal frameworks, stakeholder mobilisation, energy sharing, social engagement and communication
- ⇢ by helping partners identify opportunities for collaboration with other projects and European networks
- ⇢ by making project outputs easier to reuse and adapt in new regional contexts

This way, the platform complements the regional service offers developed by the five OSSs of the project, potentially helping them strengthen these services after the project.

For energy communities themselves, the platform can become a space for inspiration and visibility. Communities can learn from examples in other regions, understand different development pathways and see that their own challenges are part of a wider European movement. Seeing how other citizens and regions organise can inspire action, strengthen confidence and reduce isolation.

The **ECOEMPOWER** community platform should therefore be presented not only as a communication tool, but as a vision for the project's long-term support infrastructure. Its value lies in keeping the **ECOEMPOWER** ecosystem active. This is done by connecting regional OSSs, enabling peer learning, supporting replication and enabling communication between multiple levels of governance, even reaching the energy community level. In this sense, the platform contributes directly to the project's ambition to empower energy communities at regional and local scale, while improving interaction and engagement with national and European organisational structures.

2.6 Tools That Make It Work



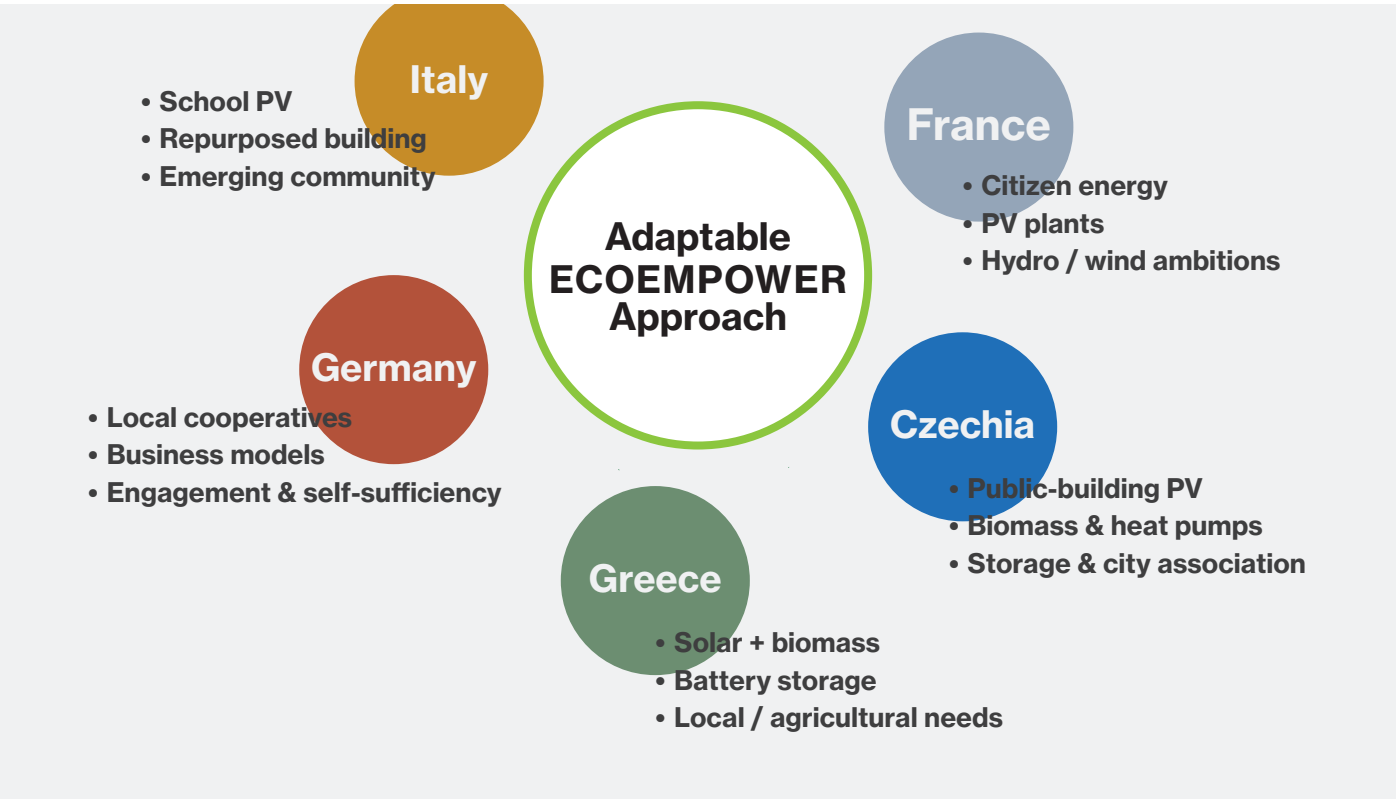
ECOEMPOWER delivered a broad toolkit for energy communities and the organisations that support them. These tools address different stages of the community journey. The project developed guidance on success factors, purposes, organisational forms and business models. Related project work explains that challenges which OSSs and national advisory bodies face are often tied to the different objectives and unanswered questions about business models and legal forms around energy communities. It also notes that advisory institutions often lack high-quality material for this kind of support.

The business models support document created during the project identifies multiple success factors (such as shared mission, values, business model choice, financial viability, technological infrastructure, partnerships, and others) to foster the successful formation of an energy community (Winklehner, Karg, & Ayon, 2024). These factors help energy communities think systematically about what they need to succeed. The same work also classified ten purpose categories for energy communities (including collective generation and trading, collective self-consumption, citizen-controlled municipal utilities, technical service provision and smart digital systems), providing clarity and a broad overview on what specific energy communities aim at achieving. For example, a community focused on photovoltaic (PV) self-consumption has different needs from a community focused on PV grid feed-in.

Alongside this conceptual guidance, the work was accompanied by financial and timeline planning templates (accessible in the **ECOEMPOWER** website). These help communities prepare 5- to 10-year business plans, including revenue, costs, investments, financing, cash-flow and profit-and-loss planning. These tools can be adapted to regional contexts, as was done within the project, and are especially important for emerging communities that may have strong social motivation but limited financial planning capacity.

These tools do not aim at replacing the use of the energy and ICT platform, but instead to provide a complementary methodology for facilitating the use of the platform itself. This relates to the benefit of effective business modelling for understanding the functional components of potentially diverse energy communities.

2.7 From Theory to Practice



ECOEMPOWER's value lies in its application to real territories and pilot cases. The project did not only produce conceptual deliverables; it worked with concrete regional ecosystems, existing and emerging energy communities, municipalities, agencies and local stakeholders. The pilot sites show the diversity of contexts.

In **Italy**, the Val di Fassa pilot includes a school-driven energy community initiative linked to a photovoltaic installation on a kindergarten roof, with proceeds intended for educational materials. Levico Terme involves the repurposing of a disused school building for an 80 kW photovoltaic plant. Valle dei Laghi aims to create an energy community with around 200 kW of PV capacity and possible future biogas development.

In **France**, the pilots include Centrales Villageoises Eau et Soleil du Lac, VercorSoleiL and Vezouze-en-Piémont. These initiatives are already engaging citizens, municipalities and small businesses, and include multiple photovoltaic plants, future mobility servicecs as well as hydroelectric development and even wind project ambitions.

In **Germany**, the pilots include historic and local energy cooperatives such as Elektrizitätswerke Hindelang eG, Elektrizitätswerke Reutte and Dorfenergie eG. Their challenges include regulatory adaptation, sustainable business models, balancing decentralised supply and demand, expanding self-sufficiency and engaging citizens.

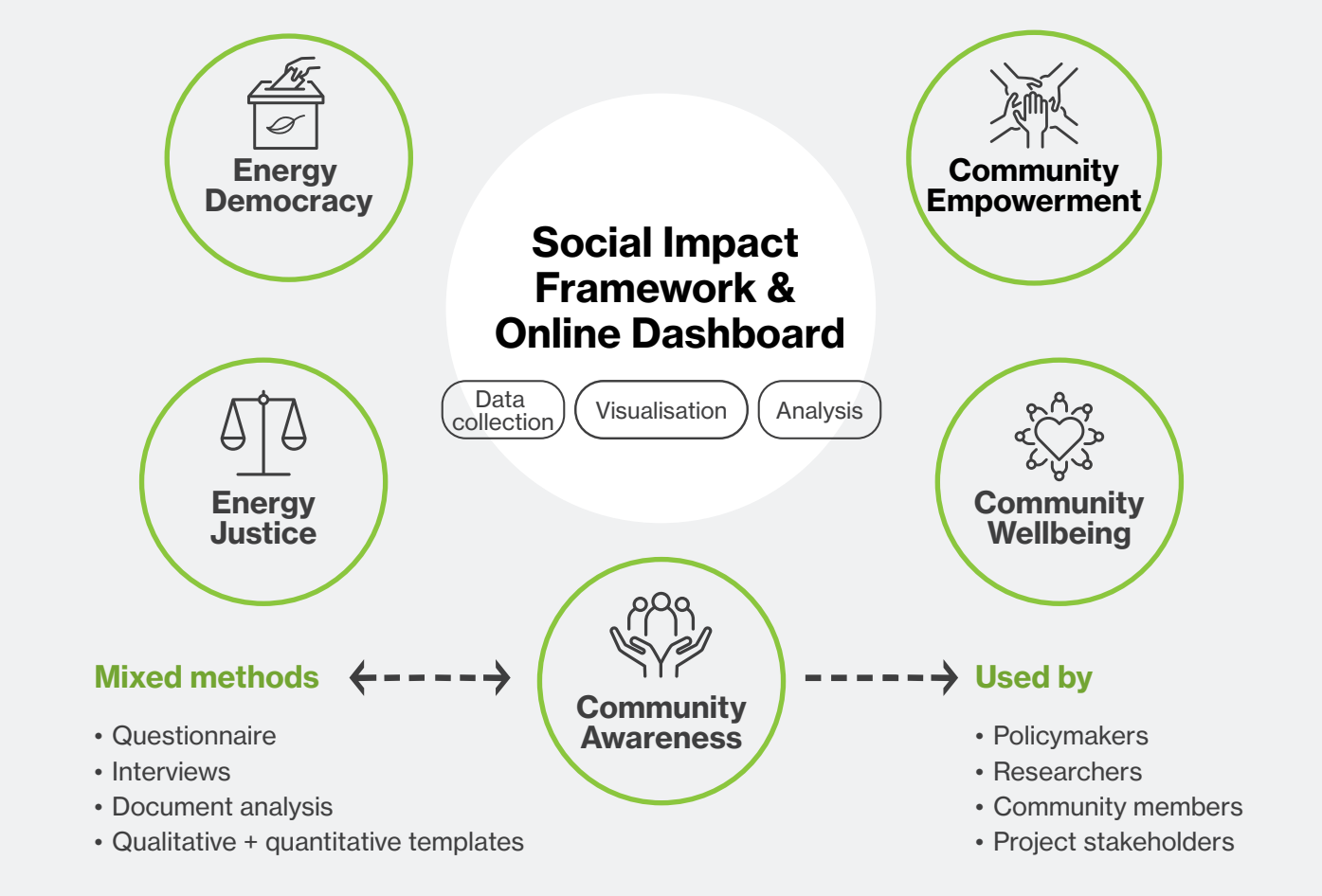
In **Czechia**, the Zlín region includes pilot work in Vlčnov, Slavičín and Zlín itself. These pilots involve photovoltaic plants on public buildings, biomass heating, solar-powered heat pumps, battery storage and a community energy association involving city entities.

In **Greece**, the pilots in Domokos, Kamena Vourla and Amfikleia focus on photovoltaic energy, decentralised energy models, battery storage and combinations of solar and biomass to support local needs and agricultural activities.

These examples show why **ECOEMPOWER** needed an adaptable approach. Some pilots are school-based, some municipal, some cooperative, some rural, some urban, some already operational and others still

emerging. The same service package cannot be applied mechanically to all of them. The project's role was to create methods and tools that could adapt and be implemented flexibly across these differences in context.

2.8 Building Knowledge for the Future



ECOEMPOWER has produced knowledge that can be used beyond the project's five regions. It provides a practical model for regional support structures, a toolbox for energy community planning, and evidence about the barriers and enabling conditions that shape community energy.

A particularly important contribution is the social impact framework. **ECOEMPOWER** identified five dimensions for assessing social impact: energy democracy, energy justice, community empowerment, community wellbeing and community awareness (Bruni, D'Andrea, Dudka, & Zampino, 2025). These dimensions help stakeholders understand whether energy communities are not only producing renewable energy, but also supporting democratic governance, fair access, empowerment and awareness.

The online dashboard built on these indicators is designed to track and analyse social impact through data collection, visualisation and analysis. It allows stakeholders to assess energy democracy, energy justice, community empowerment and awareness, and is intended for policymakers, researchers, community members and project stakeholders to understand an energy community through a social lens.

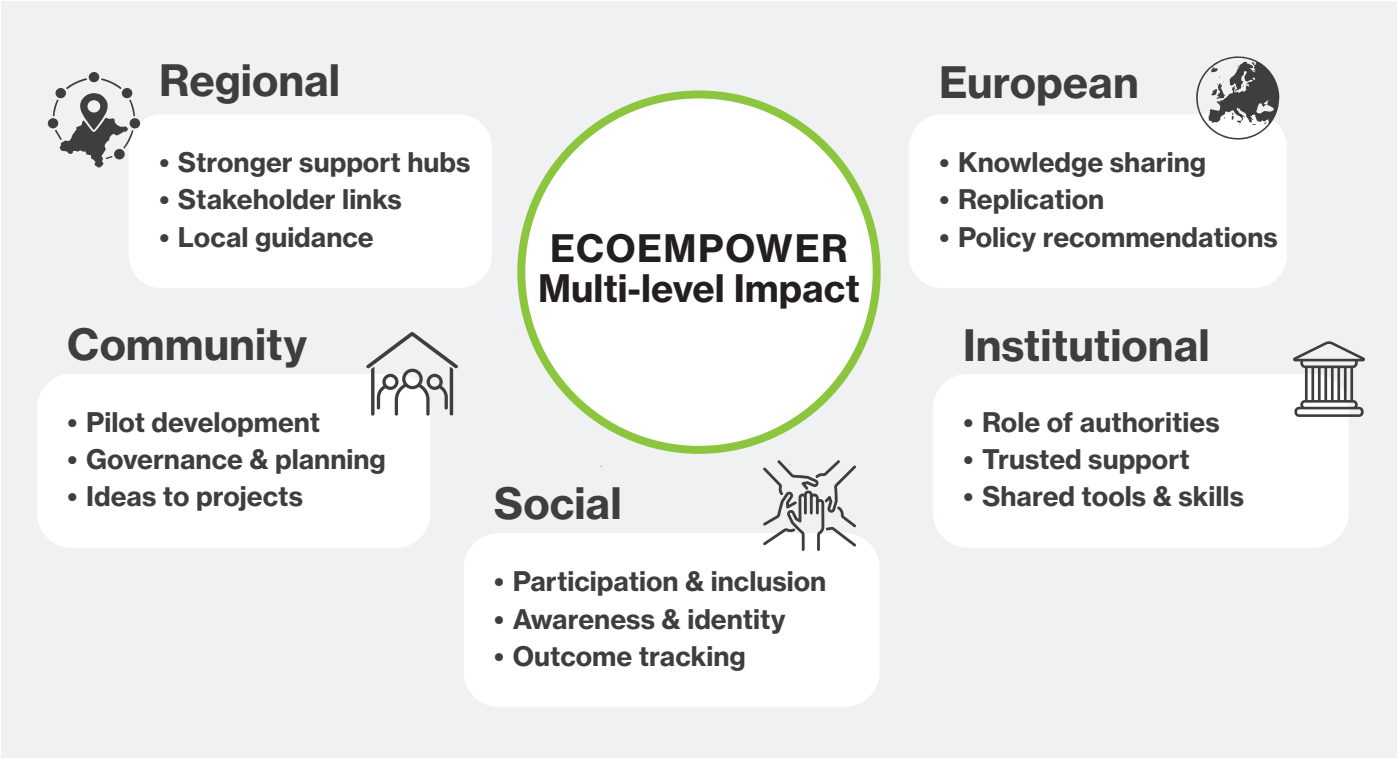
Recognising that data collection is difficult, aside from a simple questionnaire, the project used other methods to complement the data presented in the dashboard.

Said methods include interviews, documentary analysis and qualitative and quantitative templates (Bruni, D'Andrea, Dudka, & Zampino, 2025). This methodological honesty is important. Social impact monitoring must combine quantitative indicators with qualitative understanding, especially when communities are at different stages of maturity; highlighting the active role researchers and experts may perform for a holistic understanding of energy communities.

3 Lasting Change: Impact, Growth and What Comes Next

Looking beyond individual project outputs, this section reflects on **ECOEMPOWER**'s wider impact, its potential for replication and the steps needed to sustain its results after the project ends. It explains how the project has strengthened regional support ecosystems, improved the capacity of local actors, created tools for long-term community development and contributed to a better understanding of the social, policy and governance conditions needed for energy communities to flourish. This section also addresses the remaining challenges, which broadly relate to adapting tools to local contexts, maintaining OSS services, supporting multilingual and regional engagement, responding to changing legal frameworks and promoting continuous knowledge exchange with other European initiatives. It positions **ECOEMPOWER** as a transferable model for empowering local actors and helping energy communities become a lasting part of Europe's clean energy transition.

3.1 Real Impact on People and Places



To grasp the role of energy communities within society at large, **ECOEMPOWER** has taken a multi-level perspective on organisational and socio-political frameworks. Accordingly, its impact can be seen at several levels:

At the **regional level**, the project helped create or strengthen OSSs that provide practical support to energy communities. These OSSs increase the capacity of regions to respond to local questions, connect stakeholders and guide new initiatives in the formation of energy communities.

At the **community level**, the project supported the development of energy community pilots and related services. It helped communities reflect on governance,

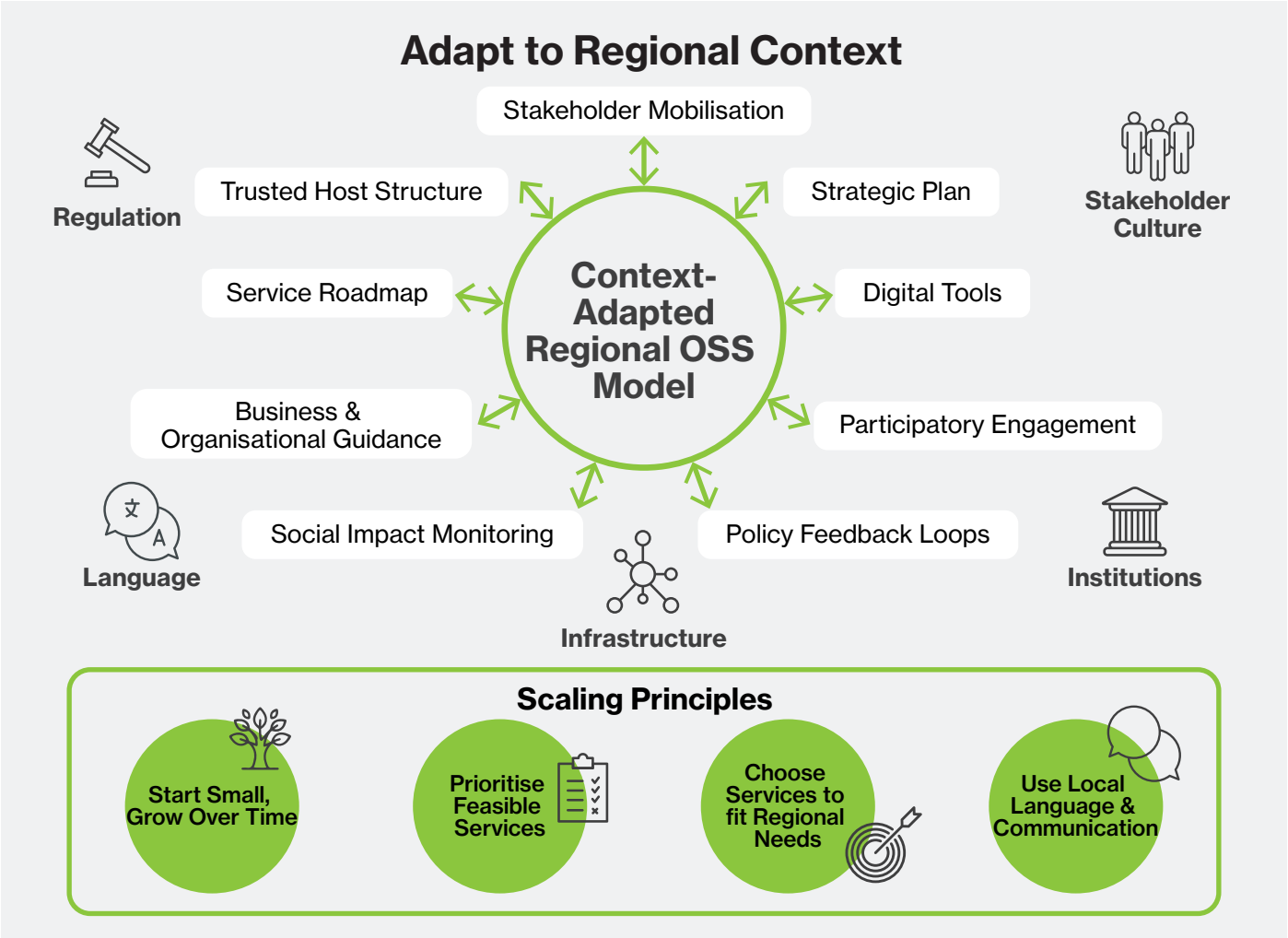
technical feasibility, business planning and social engagement. It also provided tools that can help communities move from ideas to implementable projects.

At the **institutional level**, **ECOEMPOWER** promoted engagement with, and improved understanding of what local and regional authorities can do. OSSs can function as neutral, trustworthy structures that bring stability to renewable energy development, strengthen territorial links and mutualise tools, services and skills (Poize & Levannier, 2025). A key relationship for an OSS is found with local and regional institutions.

At the **social level**, the project helped make visible the less tangible effects of energy communities, particularly through communication efforts. Said effects include participation, inclusion, awareness, local identity, community empowerment and democratic decision-making. Complementarily, the indicators dashboard provides a way to track these outcomes over time (Bruni, D'Andrea, Dudka, & Zampino, 2025).

At the **European level**, the project contributes to multi-level communication, fostering the exploitation of results and the replication of efforts. The project's guidelines, templates, service categories, peer-learning outputs and policy recommendations can support other territories that want to develop OSSs and energy community support systems.

3.2 Scaling Up: Bringing ECOEMPOWER Across Europe



As stated, replicating and scaling **ECOEMPOWER** results relates to a set of methods, and not copying a single structure. The project makes clear that each region needs to adapt tools and services to its context due to wide variations in regulations, languages, energy infrastructure, institutional responsibilities and stakeholder cultures.

A replicable and scalable **ECOEMPOWER** model should therefore include the following building blocks:

1. a **regional OSS** hosted by a trusted structure
2. a **stakeholder mobilisation process** adapted to local actors
3. a **strategic plan** defining targets, services, governance, resources and deployment phases
4. a **service roadmap** that prioritises achievable support offers
5. **digital tools** for forecasting, modelling and financial analysis
6. **business modelling** and **organisational guidance**
7. **participatory engagement methods**
8. **social impact monitoring**
9. **policy feedback loops** between local practice and higher-level governance

The OSS guidelines recommend identifying targets, services, fields of intervention, budget, resources, governance and planning. They also state that OSS creation is a long-term initiative and should proceed step by step rather than being overly ambitious in the short term (Poize & Levannier, 2025). This is an important scaling principle. Many territories can begin with limited services and build capacity over time.

The service roadmap-related work directly relates to the practical scaling model. NBot arranged in a particular order for scaling, the regional service roadmap covers awareness raising, capacity building, networking, project development assistance, project aggregation and commercialisation support, and assistance to policy development (Poize & Levannier, 2025). This allows regions to choose services according to context, resources and regional priorities.

The project also highlights the need for multi-language and local communication. A European platform or English-language tool may support expert exchange, but citizen engagement often requires local languages and regionally embedded facilitators. Future replication should therefore consider budget requirements accordingly.

3.3 What Needs to Happen Next

The final steps of the project, as well as the post-project efforts should focus on strengthening and consolidating the results already achieved in the creation and development of OSSs in each region.

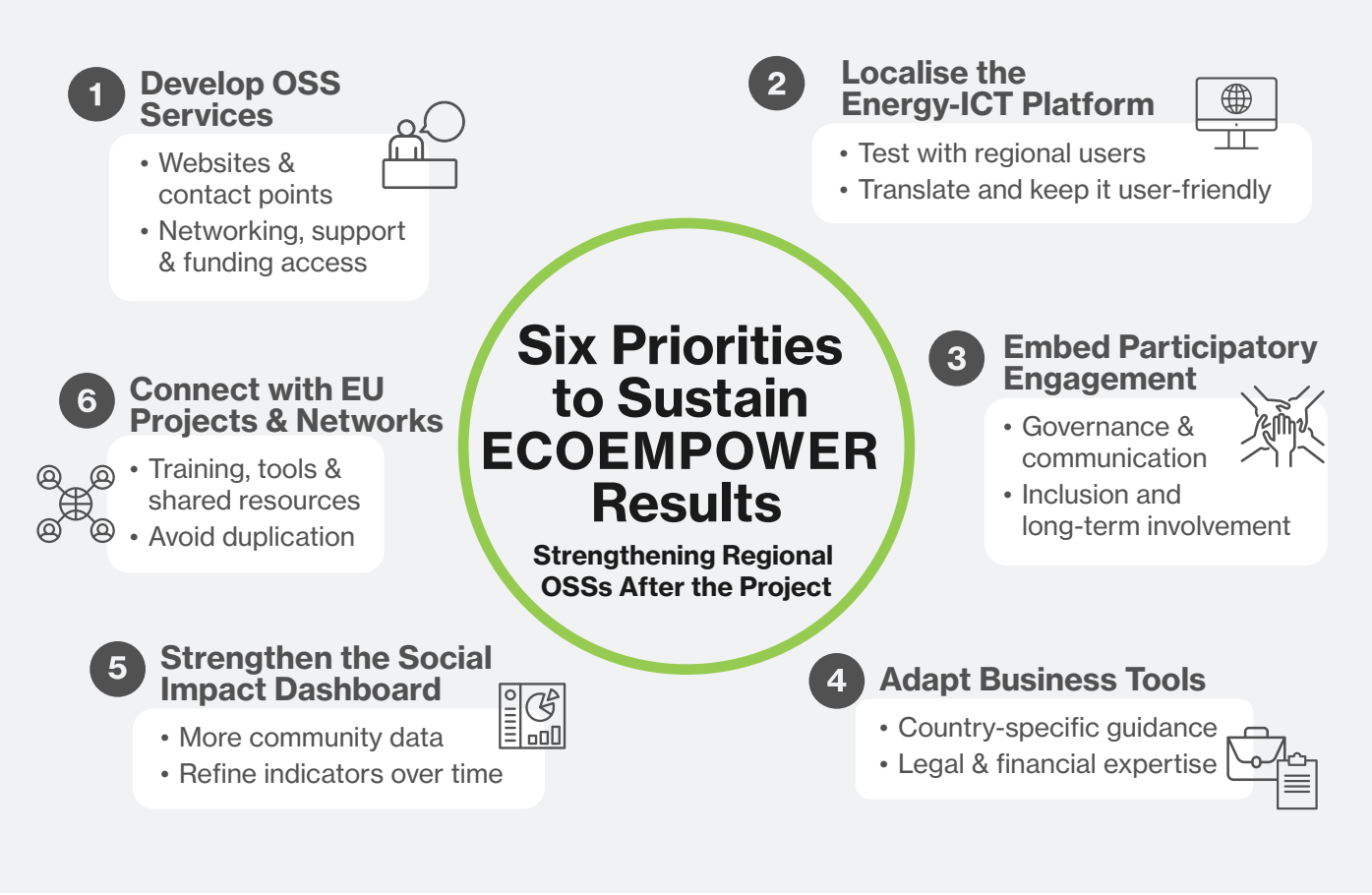
First, each regional OSS should continue to develop its service offering. This includes keeping websites updated, maintaining contact points, organising networking activities, supporting emerging energy communities, linking communities together, and facilitating access to existing tools and funding opportunities. Dedicated human resources are essential. The OSS guidelines note that an OSS should not be only virtual; it should include physical resources to provide support and organise in-person activities such as networking events and site visits (Poize & Levannier, 2025).

Second, the Energy-ICT Platform should be further validated and localised. It should be tested with regional communities, adapted to viable regional business models and translated into the relevant languages. Its usability should remain a priority so that non-expert users can benefit from its outputs.

Third, the participatory engagement approach should be embedded in OSS practice. Engagement should continue after the creation of a community; and put into practice to create links among existing communities in each region. It should support governance,

communication, conflict prevention, inclusion of underrepresented groups and long-term member involvement.

Fourth, business modelling tools should be adapted to national contexts. Considering that organisational forms and legal frameworks differ considerably between Member States, direct national application of generic organisational guidance is correspondingly limited (Winklehner, Karg, & Ayon, 2024). This means that each OSS should translate generic tools into country-specific guidance, offering legal and financial expertise where necessary.



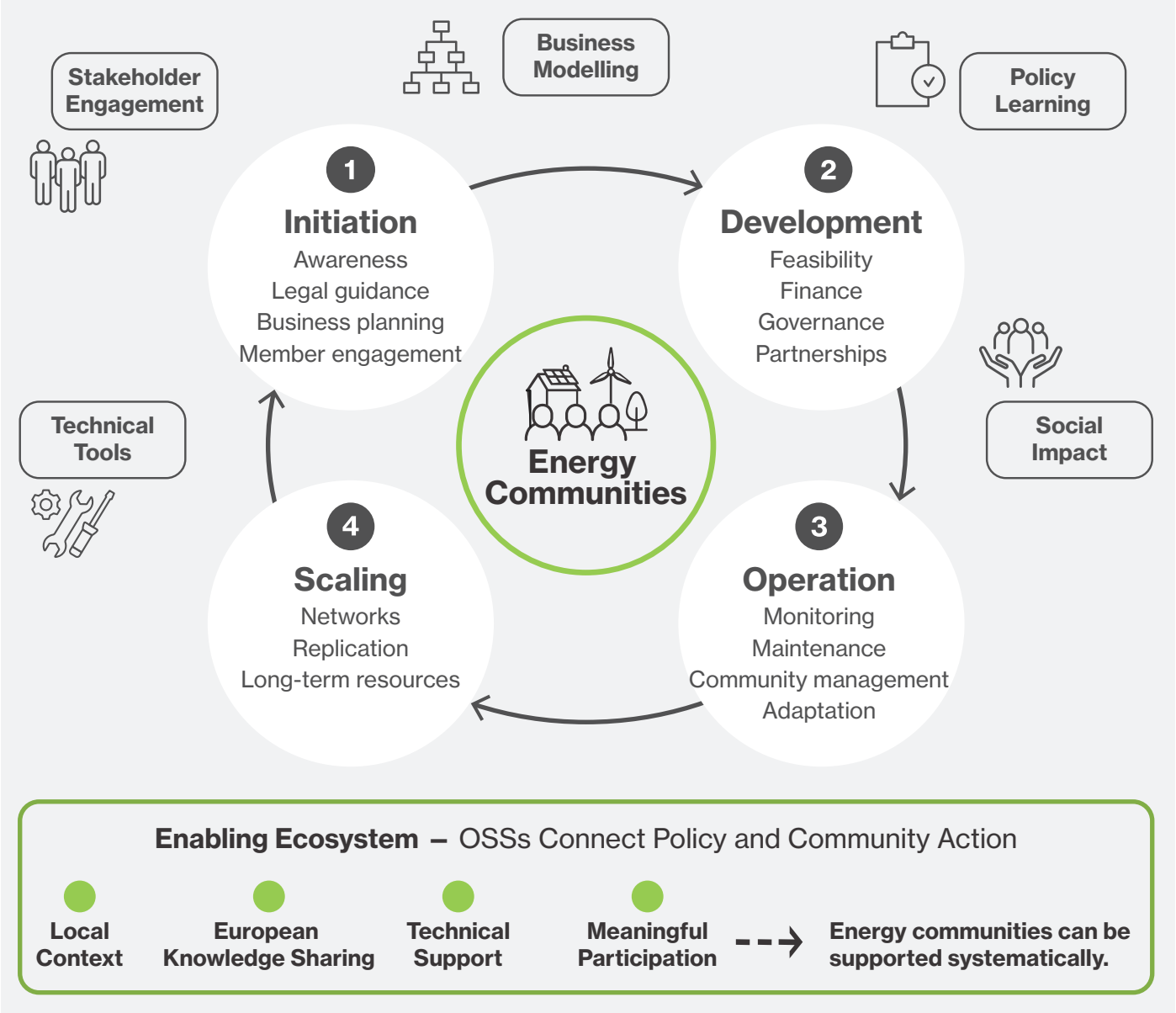
Fifth, the social impact dashboard should be developed further. More communities should be encouraged to provide data, and indicators should be refined as experience grows. Since data will be collected every six months, the dashboard can become a living monitoring instrument rather than a static project output (Bruni, D'Andrea, Dudka, & Zampino, 2025).

Sixth, **ECOEMPOWER** should continue connecting to other EU projects and networks. The Whitebook recommends unlocking knowledge for RECs through trainings, OSSs, libraries of tools and access to resources from European projects and platforms (Vordemfelde, 2026). Continued cooperation will help avoid duplication and ensure that **ECOEMPOWER** outputs remain useful after the project ends.

4 The ECOEMPOWER Legacy

ECOEMPOWER's legacy is an integrated model for supporting energy communities at regional and local scale. It brings together five elements that are often treated separately: technical tools, stakeholder engagement, business modelling, policy learning and social impact assessment.

The project shows that energy communities need support throughout their lifecycle. In the initiation phase, they need awareness, legal guidance, business planning and engagement of potential members. In the development phase, they need technical feasibility, financing, governance, partnerships and administrative capacity. In the operational phase, they need monitoring, maintenance, community management and adaptation. In the scaling phase, they need networks, replication support and long-term resource allocation.



ECOEMPOWER also shows that the energy transition is not only about infrastructure. It is about participation, trust and ownership. The Whitebook describes RECs as bottom-up movements that operate at the intersection of social movements and technological innovation, diversifying energy systems while strengthening community resilience and connection (Vordemfelde, 2026). This social dimension is central to the project's identity. From the top-down, OSSs offer the much-needed vertical translation between international and national frameworks, to support said bottom-up efforts.

The project's long-term value will depend on how its results are carried forward. Among the envisioned efforts:

- ⇢ OSSs will continue to evolve to better serve their regions.
- ⇢ The ICT Platform will continue to integrate feasible business models and extend its capabilities to represent the evolving potential of energy communities.
- ⇢ The business model tools will be updated by the regions as policy and regulatory frameworks change.
- ⇢ The social dashboard will be populated with new energy community member data.
- ⇢ The policy recommendations will feed into regional, national and European debates.

The most important legacy is the demonstration that energy communities can be supported systematically. They do not have to rely only on isolated volunteers, fragmented information or local improvisation. With the right structures, they can access guidance, tools, networks and policy support in a sustained manner, as promoted and facilitated by each region's OSS.

ECOEMPOWER's message for Europe is clear: energy communities can help accelerate the transition to renewable energy, but they need enabling ecosystems. Those ecosystems must be local enough to understand the context, European enough to share knowledge, technical enough to support sound decisions, and social enough to include people meaningfully. Continuous exchange with other projects and multi-stakeholder platforms will be essential to sustain this legacy and ensure that **ECOEMPOWER**'s work continues to empower communities beyond the lifetime of the project.

Project Partners

Auvergne Rhône-Alpes Énergie Environnement

B.A.U.M.

Centrales Villageoises Association

ENERGETICKÁ AGENTURA ZLÍNSKÉHO KRAJE, o.p.s.

eza! Energie- und Umweltzentrum Allgäu

FONDAZIONE BRUNO KESSLER CENTER FOR SUSTAINABLE ENERGY

PROVINCIA AUTONOMA DI TRENTO

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REGION OF CENTRAL GREECE

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