

Voices from the Grid: Stories Powering Policy Change Whitebook

The project **ECOEMPOWER** – ECOsystems EMPOWERing at regional and local scale supporting RECs receives funding from the European Climate, Infrastructure and Environment Executive Agency (CINEA) under Grant Agreement n°101120775.



Table of Contents

Project Communities	2
Glossary	3
Introduction	4
Our Proposal: Diversify Ownership, Empower Citizens, and Commit to Clean Energy	5
Policy Recommendations to Help RECs Flourish	7
Pilot Sites and Project Results	9
Leaving No One Behind: Domokos Energy Community, Greece	10
Building a Strong Community: VercorSoleil, France	14
Creating Public-Private Cooperation: CESLA, Italy	19
Building a Smarter Energy Future: Zlín Energy Community, Czech Republic	23
Growing Acceptance for Renewable Energy in Rural Areas: Eppishausen, Germany	27
Continuing the Journey	31
Endnotes	32
Imprint	33

Project Communities



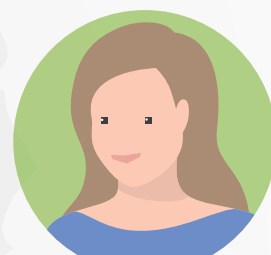
*"Energy cooperatives keep
our rural communities alive."*

Dorfenergie Eppishausen eG, Germany



*"Our sun, our wind, our energy.
And our value should stay here."*

VercorSoleil, France



*"We're building a large and intercon-
nected community that truly pays off."*

Zlin Energy Community, Czech Republic



*"A new generation is stepping up and
shaping the energy future of our valley."*

CESLA, Italy



*"This is more than power – it's solidarity,
strength, and people supporting people."*

Domokos Energy Community, Greece

Glossary

Renewable Energy Community (REC)

According to the European definition in the Clean Energy Package (CEP), a 'REP' refers to a group of volunteers that collectively own a renewable energy project. Members can be private individuals, local public authorities or also small businesses. The focus of all activities lies on environmental, economic or social community benefits and rather than on financial gains.⁽¹⁾ RECs may use the energy they produce by themselves or sell it on the energy market.

One-Stop Shop (OSS)

By 'One Stop Shop' we refer to an online or in-person service provider that serves all the needs a REC might have. An OSS has personnel who support, consult, and assist RECs on their journey to growing or maintaining their work. An OSS can for example provide legal support, trainings or a network for the RECs.

Collective Self-Consumption

This concept describes a group of people (like in a REC) that collectively owns and consumes the energy from the local renewable energy source (such as PV-plants or wind turbines). In doing so, the group practices "collective self-consumption".

Introduction

Imagine it's 2050 and that things have changed. We live in a system, where wars about scarce resources – that should have stayed in the ground from the very beginning – are finally over, because we have enough energy for everybody – clean, cheap and self-organized. Nobody has died in wars fought about oil, gas or pipelines for ages. The wind turbines next door would not be so much of a problem since part of them is owned by you and your neighbours and powers your community heat pump.

Since the multiple crises in the mid 2020ies have shown Europe how dearly it needs to grow independent from authoritarian oil and gas suppliers, the European Commission has committed to citizen energy⁽²⁾. They have set up financing schemes to decentralise energy supply and set up a system of many small Renewable Energy Communities (RECs) – exchanging clean energy locally. Your local REC is deeply rooted in the community, every citizen is empowered to participate and has access to basic training to understand how to install their own PV. With kick-starting funds from the EU you could install storages, smart meters for data collection and additionally you are using the newly established European open source software to calculate and forecast your energy exchange and model community energy sharing. Your energy community does much more than share energy: There are solidarity tariffs for low-income households, you have a small office in the neighbourhood where people can gather and work together on new projects, your energy community organizes a local car sharing, a skill share network, a repair cafe and a network of neighbouring RECs to inspire and support each other.

Sounds like a magical fairytale? Just that it is not a fairytale but the solution to many interconnected problems: Rising energy prices leading to the decline of industry and economy, the big impact fossil fuels have on climate change, dependency on authoritarian and brutal regimes. Also rising levels of loneliness in all generations of our societies, the feeling of being disconnected, the numbness in the face of climate crisis and loss of community belonging. We are living in times of enormous shifts in interconnected systems. It is our responsibility to design these shifts in a way that ensures just, decent and resilient living conditions for all, today and for coming generations.

Our Proposal: Diversify Ownership, Empower Citizens, and Commit to Clean Energy

Us – that's a group of local stakeholders, researchers, local governments and energy agencies forming the consortium of the Life-project **ECOEMPOWER**. Throughout the three past years (2023–2026), we tried to find out how to best implement support structures for RECs. Our pilot sites in five different European countries have served as real-life test environments to try out what can help RECs to flourish. Our proposal? Diversify energy ownership into a network of Renewable Energy Communities (RECs).

RECs already have a vital role to play in the European plans to reach climate neutrality by 2050: Collective self-consumption⁽³⁾ in its different forms and participation of citizens is a main lever of acceptance of the energy transition as it is described in the Renewable Energy Directive from 2023⁽⁴⁾ (RED III). Various countries are now implementing the renewed directive including the subsequent updates to speed up the rollout of renewable energy sources. The directive positions RECs as a solution to multiple challenges: enhancing system flexibility, acting as market players in mobility, offshore and onshore wind, heat and contributing to the diversification of Europe's energy system. Their role in decentralizing and decarbonising the energy system of Europe is significant.

Many stakeholders now recognise that to fulfil this ambitious role, RECs require targeted support. The structures in which they operate are highly specific: Many RECs start off based on volunteer work while they represent a crucial pillar of the energy transition. This volunteer-based engagement is naturally not financially rewarded nor institutionalised. This means so far the European Commission relies heavily on individuals with privileges such as financial resources, language skills and time capacities to diversify the energy system. To widen the amount of people who can take care of diversifying the energy system, RECs and the volunteers behind them need targeted support.

Within **ECOEMPOWER** we have explored in depth how RECs can build movement, design business

cases, gain access to suitable digital tools, benefit from networks and dedicated training programs and become inclusive for all citizens. We aim to share the experiences gathered throughout the project by giving RECs a voice. We are convinced that the ground knowledge is among the most valuable sources of insight for shaping effective support structures. In this report one can find not only the key findings from the **ECOEMPOWER** project but stories about the RECs and the people we have worked with and come to know over the past three years.

Our objective is to connect RECs with the institutions trying to support them in just the right way throughout Europe and make sure everyone knows that the problems they face are faced by many and that many actors are actively working on solutions. We hope to inspire some connections and bring usable insights to the community.

Stories Form Policies

Why did we decide to center this report around stories? Many reports draw out the financial, the technical or organizational upsides to some aspect of the energy transition. While these dimensions are essential, RECs are something more. They are bottom-up micromovements that exist in so many different forms across Europe. They bring together all kinds of professionals, neighbours, families and friends. They are not purely technical initiatives; rather they operate at the interconnection of social movements and technological innovation. They diversify local energy systems and make them more resilient, but at the same time they grow connection within a community, grow local industry and ultimately make communities more resilient on an interpersonal level.

This is why their story matters. RECs are not merely instruments for delivering renewable energy or flexibility. They represent a collective movement of people reshaping energy systems from the ground up.

Our interviews conducted for this report confirm this perspective. Citizens involved in RECs express a strong desire to move things forward, to participate actively in their community, to shape local income and energy flows and to take responsibility. Energy citizenship, in this sense becomes an act of responsibility. Not only does an energy community reshape the local energy system but it touches emotion of people, people feel proud, in charge, connected. In contrast to the fossil-based energy system, historically organized in a largely top-down manner by a small number of powerful stakeholders, RECs promise flexible, small-scale and resilient solutions, where people are welcome to join their forces. From the RECs we worked with in this project we could see how their engagement works like an antidote to lethargy and surrender, how doing something about a specific problem brings joy and hope to people.

What stuck with us was to think about the form and ability to participate and thus power structures as a key aspect of a transition. A diversification of energy production inevitably entails a diversification of power (power over production, technologies, costs and ultimately policies). In a decentralized system, influence is no longer concentrated in the hands of a few producers but distributed among citizens who assume responsibility in the system⁽⁵⁾. However, when we speak of participation we must also ask: Who is able to participate?

Participation requires the ability and capacity to participate. Long working days in the low-paying sector can cut time capacities short, since one must work many hours to keep food on the table. Language barriers can hinder people to participate, when they are just learning a language and are not at the level of understanding technological specificities. Child or elderly care can cut time capacities short. People might not feel welcome to a community where the level of engineering

knowledge is quite high and technical or no onboarding process can be provided. We might not find solutions for all these problems, but we want to point them out and invite to consider them when forming a REC. The movement of RECs is fundamentally socio-technical. Neglecting its social dimension risks co-optation, resulting in diversification that reproduces existing market logic rather than transforming them.

Within **ECOEMPOWER** we found that RECs can be effectively supported with many of the above problems through networks, skill training and tailored software solutions. We frame this approach under the concept of the One-Stop-Shop, a model strongly promoted within European policy discourse, through which we identified and responded to the practical needs of RECs. Throughout the project we mapped and synthesised these needs and gathered the services that proved most valuable to communities. We developed specific technical, interpersonal and software solutions that could help RECs thrive. This document highlights the challenges they face in their everyday practice and outlines pathways to address them. It is intended as a practical guide to design suitable policy. We want to thank all our partners for the great collaboration to bring this summary of our activities alive and encourage to connect, call and message each other, since this movement lives off the interconnectedness of all its parts.

Policy Recommendations to Help RECs Flourish

Within the **ECOEMPOWER** project we have found several patterns of problems RECs encounter within their lifespan. We condensate these learnings from the interviews, the projects lifespan and the experience of our many different partners into a comprehensive guideline for policymakers on how policies can support the existence and built-up of RECs.

Starting Up – The Founding Phase of an Energy Community

This initial phase of an energy community is often characterized by a small group of highly committed individuals driven by a strong vision and sustained largely by volunteer work. To support this formative stage, national and federal authorities can implement the following policy measures:

Provide financial aid and give securities for first projects – REC lay the groundwork to their work by founding a legal entity, finding members and building up or buying their first renewable energy project.

- Policy makers should **consider setting up funding opportunities to co-fund first investments** either as a lump sum or as a very favourable loan.
- These opportunities should be **easy to handle** and apply to – consider **easy language and little bureaucracy**.
- Consider **setting up loan programs through national or European investment banks** to secure attractive loans for RECs.⁽⁶⁾

Provide kick-off package with favourable or free planning aid – During the early phase, both technical and community planning are required.

- Much like the European Energy Community Facility, provide a kick-off package with **individualised support possibly through trained personnel** in community building, business plan creation, communication materials but also feasibility studies, developing business plans.

- This should be a **permanent offer, possibly financed through a solidarity REC network fund** that channels funds from already successful RECs to new ones. Providing a permanent offer will lower competition amongst RECs for funding.
- **One Stop Shops** could be the institutions that **host these programmes**.

Consider which RECs get financial help – through eligibility criteria one can direct funding to RECs that especially **promote the idea of fair citizen energy** and focus on energy justice are more likely to get funded.

- **Funding criteria** such as: Diversity in gender and age, promoting solidary options such as price ranges to buy a share, voting power redistribution (eg. each member one vote instead of one vote per share) could be a possibility.
- Make sure to **avoid putting RECs in competition with each other** through programs with very low access.

Keep Going – Running the REC Successfully

Enable access for different citizen groups – Diversity is key for citizen energy. Making a REC accessible can make all the difference. Any solidarity mechanism, such as **solidarity tariffs or price bands for share purchases**, can help.

- Particular attention should be paid to **under-represented groups**, which, in our experience, are economically vulnerable groups, women and young people.
- Solve these problems by **open conversations about a groups needs**, possibly involving local experts (eg. social workers from the region).
- Consider establishing **dedicated RECs for specific groups**, such as the **WenCOOP** – an all-women energy cooperative.

Unlock knowledge for RECs – For volunteer-led RECs, it is vital to have access to knowledge.

- Consider **opening access to higher education courses**, organize **trainings through One-Stop Shops (OSSs)** and enable **stable funding for OSS's**.
- Incentives such as **job relevant certificates** can help people to take courses to increase technical knowledge.
- Keep a **library of Europe-wide or national tools**, where the resources from European projects and platforms can be harvested – such as our **ECOEMPOWER** project or European platforms such as **REScoop**.

Provide stable and long-lasting directives – Building up RECs is a long-term job.

- To best support RECs, it is necessary to **ensure lasting regulatory frameworks**.
- If possible, establish an implementing body **within institutions that are not directly affected by changes in political leadership**, to help RECs stabilise.
- In particular, **financial support programmes should not change every four years**.

Build up open access digital platform for grid data – RECs depend on a **smooth data exchange to share energy and/or profits**.

- Providing an online platform that supplies all grid data needed for successful energy sharing can be very helpful – such as the Energy Data Centre (EDC) in Czech Republic.
- Also consider **national OSSs** to be able to **help RECs with software provision**.

Growing Older – Long Established RECs

Enable and finance exchange between long-standing and starting-up RECs – Long established RECs are the best experts there are to learn from.

- Institutionalize the **exchange between older and new RECs**, possibly provide funding for exchange events or start **mentoring programs**.
- Acknowledge volunteers as experts and as the primary source of practical information for and about RECs.
- **Involve long-time volunteers in shaping future policies**.

Pilot Sites and Project Results

In the following chapters we want to tell the stories behind some of the **ECOEMPOWER** RECs. They are all brave movements that have started at some point to challenge the existing energy system and provide an alternative for citizens and territories. The heart of each community are the volunteers who research, activate, mobilize and network in their own spare time and who believe that things can change. Without volunteers and the local authorities and companies taking part in the initiatives this movement would not be happening. Here are their stories.

Leaving No One Behind: Domokos Energy Community, Greece

The municipality of Domokos is located in central Greece at the foot of Mount Othrys and surrounded by valleys that provide fertile ground for agriculture. Like so many places in Greece it has a vital history and historical heritage such as a medieval fortress that served many different cultures as settlement. The social life in Domokos is very focussed on the cooperation and relationship between the citizen of the area, which is why a main vision for its energy community is that it *grows without losing its warmth*, tells us **Ioannis Markou** from the **Domokos Energy Community**: *It is not only about electricity – it is about participation, solidarity and a community's ability to support its members through its own strength.*

Set up through the municipality, the REC focuses on upgrading schools and day-care centres with air-to-water heat pumps, reversible climate control systems and rooftop photovoltaic panels. Stakeholder engagement – involving local citizens, educational staff, private energy companies and research organizations – has been central to its success.

The energy community was first brought to life to transform the energy efficiency especially in the heating sector in public facilities but bringing the community along has always been a main lever for the project. It was the notion of doing something, taking responsibility. Markou describes their decision to enforce the movement: *The decision came one afternoon during an open informational meeting at the town hall. I heard an elderly man say, "At last, we are finally doing something ourselves, for ourselves," and that was when I realized that this was not just another project that would simply pass through the area. It was something we were building ourselves. With enthusiasm the people of Domokos came together to transform the local energy system bringing in all kinds of stakeholders, professions and opinions, making people meet who otherwise would never have met – farmers, teachers, small business owners and even younger people who had left for work and then returned. Everyone was invested in the idea*

of organizing their own system of how to produce energy and it sparked an enormous involvement of the community. The idea was carried by a group of consistent volunteers, who didn't give up upon their dream, communicated information needed and took everyone interested along in the process. Markou remembers I understood that my participation did not need to be perfect – just steady and consistent.

Of course there were some considerations to make in the beginning. Especially the point of who would be paying for the projects oversight and the fear of getting stuck in bureaucracy were important to discuss. *What helped was that there was a small group of people who refused to give up – says Markou when he remembers those days. When the day came and people gathered on the plot where the PV plant should be installed there was a sense that something greater than all of us was beginning. There was not much there yet besides the soil and a map where people could see where the foundations would be laid, but people were involved and happy to be contributing:*

I began to feel much more consciously that energy is not something impersonal. Now, when I look at the panels out in the field, I see collective effort, not equipment. And it has made me a more active citizen: to care, to follow developments, to participate.



Ioannis Markou and colleagues, Domokos Energy Community



An important aspect for the Domokos energy community is sticking together and standing up for each other. Providing also for households that are struggling with energy poverty was the fundamental point and gave meaning to the project other than just financial gain: *I remember a family in a village just outside Domokos, where the father had become unemployed. The community covered a large part of their electricity bill during a winter that was truly cold. The mother came to the assembly in the spring and told us, "We may never forget this." In that moment, I understood that the cooperative is not theory; it is people.*

The Domokos energy community is often looked at as a best practice, since it shows how prioritising inclusivity also in energy systems can really lead to a just transformation. The Domokos energy community shows very vividly how economic and social effort can go hand in hand and create environments that serve the climate and the people all at once. The goal must be to bring cleaner energy to everyone – not just to privileged few. *To anyone considering joining, Markou remarks, I would say: do not postpone it. Even if, at first, you feel you have nothing to contribute, your presence and your voice are already important.*

Assessing the Social Value of the Energy Community

RECs are not purely of financial nature and the motivation of stakeholders to participate often lies deeper: People might prefer to put their savings into local, sustainable and ethical projects instead of investment funds that finance fossil fuels. Of course, financial income can be a powerful lever for people to come into action, but it shouldn't be considered the only one. As we've seen in the Greek example community building and mutual support can be just as powerful.

In **ECOEMPOWER** we tried to categorize the social impact of RECs around dimensions of impact, and we propose indicators of how to measure those. Since we will not be able to put all the outcomes of the research into this report, we highly recommend the corresponding [Deliverable 3.3 "Collection of indicators for assessing social impact and guidelines for their measurement"](#). We introduce the dimensions of Energy Democracy, Energy Justice, Community Empowerment, Community Wellbeing and Community Awareness.



The dimension of **Energy Democracy** deals with the issue of **power structures**. Summarized, it is a concept that describes how diversified the decision power over energy production and consumption really is, from a situation where one actor controls a whole system ranging to all power in the hands of citizens who ultimately consume the power produced. A key to more energy democracy is the governance structure of an energy system, meaning mechanisms implemented in decision making where citizens can come in, either take responsibility or give their opinion on decision-making. Subsequently, it is central for energy democracy that opinions are not just heard but also acted upon. Indicators for the level of energy democracy can be the redistribution of economic benefits among members or the community and renewable infrastructure owned by citizens in terms of shared infrastructure. When thinking about governance in an energy system, one could ask about the number of people participating actively in decision-making or what organizational form an energy community has and what power structures come with it. Just to give an example, giving each stakeholder one vote instead of weighted voted according to the amount of shares can be one aspect of a democratic governance.

Another dimension is **Energy Justice** – it applies the principles of social justice to the global energy system, asserting that the benefits and burdens of energy production and use should be shared equitably across society. It is commonly understood through three dimensions: distributive, procedural, and recognitional justice. **Distributive justice** concerns the **fair allocation of energy-related benefits** and impacts, including infrastructure location, skills development, and job creation. **Procedural justice** emphasizes inclusive,

transparent and representative decision-making processes in the energy sector. **Recognitional justice** focuses on acknowledging and addressing the **needs of marginalized and vulnerable groups, including young people, women and low-income households**.

To measure energy justice, we can look at how equally positive or negative effects of energy systems are distributed. When we look at RECs, we could consider how economic benefits are redistributed within the community: Is there is gender balance in the group of communities' volunteers? Can each person take on the responsibility they want to or have the right to decline it? How high is the number of collective projects carried out by the REC and the percentage of vulnerable population benefiting from subsidized energy tariffs? Another indicator might be how information is transported to all citizens and if information is just available to an enclosed group of people, class or part of society.

The dimension of **Community Empowerment** involves many different metrics. Empowerment of a community **is a process**, but at the core we understand it as *giving people the power and skills they need to make informed decisions and act independently.*⁽⁷⁾ It focuses on **enabling citizens to actively own, manage and govern local energy initiatives**. It goes beyond consultation by equipping community members with the technical, financial, and organizational skills needed to **independently develop and operate energy projects**. Through genuine participation and shared governance empowered RECs strengthen local resilience, foster innovation and promote long-term sustainability, while also serving as practical examples of participatory democracy in the energy system. The key

to empowerment is **access to knowledge** and easy onboarding for new volunteers in terms of transparent governance, inter-personal structures and technical skills.

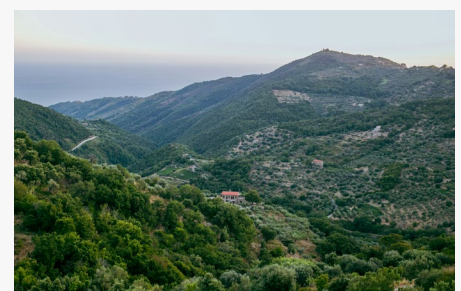
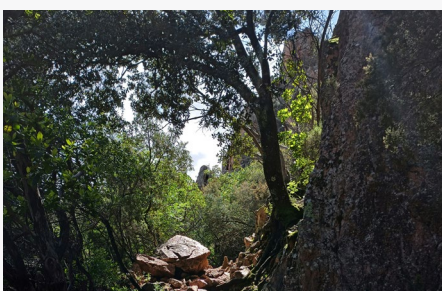
Indicators for community empowerment might be how and if volunteers are involved in energy literacy programs, to build up their skills, how accessible financial, technical and information resources are to the members of the energy community and how well tasks are defined and skills in the group used to an advantage.

RECs can additionally have an influence on **Community Wellbeing**. We see that community wellbeing is increasingly threatened by climate change, which affects physical health, mental health, livelihoods and essential services through extreme weather events and environmental degradation. In this context, RECs offer a pathway to enhance collective wellbeing by addressing both mitigation and adaptation needs. By **producing and sharing renewable energy, RECs reduce greenhouse gas emissions, strengthen local resilience and support healthier living environments**. Community wellbeing within RECs is understood holistically, encompassing social, environmental and psychological dimensions. Socially, participatory energy initiatives **foster collaboration, trust and a sense of belonging**. Environmentally, renewable energy **improves local air quality and reduces Co2 Emissions**, while inclusive planning helps address **concerns over landscape and ecological impacts**, increasing the overall acceptance of energy infrastructure. Psychologically, active involvement in RECs **can reduce climate-related anxiety and empower citizens by offering tangible ways to contribute to a sustainable future**; as we have seen in the interview with the Domokos energy community. When measuring this dimension, we might look at the efforts taken to widen the RECs' responsibilities in sectors that go beyond mere energy production. Another indicator could be the overall feeling of self-empowerment

through participation in social movements on climate change that might occur side by side with an energy community.

Lastly, **Community Awareness** is fundamental to **fostering participation and collective action for sustainability**, particularly within RECs. It refers to the capacity of community members to understand environmental and energy challenges and to recognize the connection between everyday behaviors and their impacts on energy systems. RECs play a central role in **building awareness by providing rooms for education, dialogue, and shared learning**. Through environmental education initiatives, workshops, and community-based activities, they **promote informed and responsible decision-making**. Information dissemination and social engagement within RECs help mobilize citizens, strengthen social networks, and encourage the exchange of knowledge and sustainable practices. As a result, increased community awareness supports collective ownership, adaptability, and proactive responses to energy and environmental challenges, enabling communities to plan and implement solutions that enhance sustainability and overall quality of life. We can try to measure this by the general awareness a community shows, e.g. how households push for more sustainable practices through the installations of smart-meters, adopting energy-saving solutions or collaborations between community groups, local businesses and institutions to promote more sustainability in the community.

All these different dimensions can give a hint on how an REC transforms the lives of people on a social, financial and technical level. Communities can behave and act very differently; some have a focus on inclusive governance and social solidarity, but others might concentrate more on the technical and financial side of things. It is important to recognize the power of RECs on both the social and technical side to harvest its true potential.



Building a Strong Community: VercorSoleil, France

Located in the Vercors Regional Park, a mountain massive with iconic cliffs, as co-founder **Jean Eric de Rango** explains, the energy community **VercorSoleil** has built a network of roof PVs for collective use. Launched in 2010 by the regional energy agency and regional nature parks of the former Rhône-Alpes region, the Centrales Villageoises experiment mobilizes residents and local authorities in several rural areas to actively participate in the energy transition, drawing on strong local roots. The Vercors region in the Drôme department is one of the pilot sites for this experiment, and thanks to the strong involvement of an elected representative from Saint-Martin en Vercors, an initiative was launched in 2014 to bring citizens and local authorities together around the project and carry out the first landscape studies. In June 2015, the simplified joint-stock company Centrales Villageoises VercorSoleil was founded. For their first project not only quite some citizens but also the regional government invested money for the first 18 rooftop PVs. Two reasons were essential to the enthusiasm: *Firstly, this is a small, close-knit mountain territory – six villages where everyone knows each other. That creates trust and, equally important, the financial support of 15.000 € from the intercommunal authority which was a strong signal of credibility to future investors*, remembers Jean Eric. *For the first project, we had no real obstacles – only opportunities.*

Initially, VercorSoleil's business model was initially based on equipping numerous small roofs. In view of the electricity purchase prices since 2017 and the ban on combining subsidies with the tariff introduced by the photovoltaic tariff decree of 6 October 2021, this model has evolved and is now moving towards equip-

ping large roofs of at least 200 m². Finding the niche where to fit in was the key to success and VercorSoleil found this key in cooperating

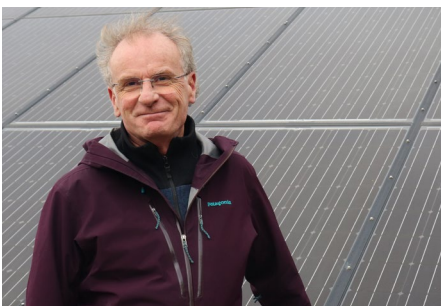
with farms and using those roofs – and not any farm roofs: *We realized we shouldn't waste time on very large farms with 2.000 m² of roof – private developers would always offer them much higher rents, three or four times what we could. Instead, we focussed on mid-sized farms with roofs suitable for around 100 kW installations, which big developers aren't interested in.*

The turning point came thanks to persistence, new partnerships and a dedicated employee. *For us, the hardest part was convincing people in the agricultural world*, he says. The regional park helped by creating spaces for dialogue, and VercorSoleil's new employee, Lucie, became "somewhat specialized" in navigating the region's complicated asbestos-removal grants – a key incentive for many farms with aging roofs and the new in-house expertise helped a lot. Once one farmer had a positive experience, others followed through word of mouth.

Another key aspect for their success was the national association Centrales Villageoises, a membership network that provides consulting and tools for RECs in the region. Many practical offers had helped the community to start up: *Guides to help select suitable roofs, tools for developing photovoltaic projects, building business plans, setting up financial models etc.*

We also relied on their resources for developing our collective self-consumption system. And their communication and citizen engagement tools helped us structure our group, which used to be a bit disorganized before our employee arrived.

Being part of VercorSoleil has deepened Jean Eric's own understanding of the energy system. Already an early adopter of solar power and electric mobility, he says the experience gave him a clearer view of the challenges of scaling renewable energy and reinforced his desire to consume locally produced electricity. Other members have also transformed their personal habits through "carbon conversations" – small volunteer facilitated group discussions exploring ways to reduce emissions. Jean Eric explains: *Each participant*



Eric de Rango, co-founder of VercorSoleil



reflects on possible ways they could make improvements – or not – but always in a spirit that's not about guilt or punishment. It's done with kindness, with the idea of learning from others, finding ideas that might work for oneself and moving toward something better, even if no one is perfect.

To Jean Eric, VercorSoleil is a group of people that want to make things happen because they see that *there's a complete disconnect between political attitudes or directions and the desire – which shows up in all the surveys – of most people to move in the right direction on these issues.* Coming together gives them courage, enthusiasm and the proof that they can move things further, even if it is just a little compared to what must happen. But the community already produces the equivalent of 25% of local domestic electricity consumption of their territory: *Imagining that all villages would adopt similar initiatives is truly a source of hope. It's about the people, Jean Eric asserts: There's still plenty of room for progress, of course, because it's not just about households – there's also agriculture, the service sector and transport. But we can make things happen, and we already have lots of projects that require energy – human energy – and for anyone who wants to help make change, there's a lot to do. And we really feel that we have the means; we just need more people*

to help make things move forward. Looking forward it is also a topic of resilience, he points out. *Many of us in VercorSoleil believe that we're going to face serious difficulties in electricity supply before long.* It is a question of access especially in a rather cut-off region in the mountains and to take responsibility for one's own electricity supply. The future to Jean Eric appears full of new projects, many roofs are still without PV, they are thinking of district heating networks, looking into pooling transport, *it's green and has lots of renewable energy, Jean Eric laughs. "Autonomy" isn't exactly the right word, but rather producing locally, with local governance – where we make our own choices.* A key issue will be collaborating with local governance, because these projects are really for people who care about the region and want to start here. Big developers wouldn't put the effort and budget into projects the energy community is enthusiastic about.

Join us, says Jean Eric when asked about how people can help build a greener future. The sun that shines on the Vercors and the wind that sweeps across our plateau are local resources. Just like we use local wood for heating, it makes sense to use local sun and wind for energy – and to make sure that value stays in our communities, not in the hands of distant developers.

Building up Network Support: The One-Stop Shop

Within **ECOEMPOWER**, four new One-Stop Shops (OSS) have been established in four European countries – Italy, Czech Republic, Greece and Germany – to support RECs – drawing on the experience of a French experienced OSS – the Association des Centrales Villageoises. OSSs for RECs' function both as a network and a toolbox, they are central contact points if an energy community wants to kick-off their first project and general legal, membership and financial questions. Such support networks could help RECs all around Europe with tools, strategies and consulting. In this chapter, we will summarize and outline the main findings on the built-up of OSSs. We have detected two crucial phases of an OSS: The preparation and the operational phase, while the preparation phase takes up the bulk of the time.

All the established OSSs started from one local institution that could host the OSS for its first years. Thus, we consider it an essential aspect to involve some local actor such as a local company, energy agency, NGO or dedicated citizen as possible host. Additionally, the willingness of the local authority body to support the project can act as an important lever.

→ Mobilizing for the idea of an OSS

The first step in the preparational phase is mobilization. Mobilizing stakeholders for the development of a OSS is not just a technical exercise; it's a process of building curiosity, trust and finally commitment around a model that is still new to many local actors in this early phase, the goal is simple yet crucial: Make the idea visible, relatable and relevant, and gather a core group of stakeholders (citizen, local public institutions, associations and small local businesses) ready to co-create a future OSS. But turning unfamiliar concepts into shared ambitions takes time, tact and careful attention to what each group needs and fears.

When it comes to the different stakeholder groups, we detected some "Watch points" for the communication with each target group:

Citizens shouldn't be confronted with elitist language or only financial arguments. What often resonates is the social value of the OSS idea – stronger communities, local benefits and a sense of collective purpose.

People want to see and feel what the goal of an OSS looks like in real life. That's why inviting them to visit existing RECs, organizing short online best-practice introductions and offering clear explanations can make all the difference. The way they are welcomed into conversation matters as much as the information itself.

Municipalities, on the other hand, often need reassurance. To form a REC for the local energy production is a new approach, diverting from the path many municipalities are used to. An OSS can ensure the success of RECs by training, supporting and consulting the volunteers. Therefore, to set up a successful self-consumption for the region through a network of RECs, the municipality could consider an OSS as a helpful tool. Bilateral meetings to ensure local authorities see the benefits of an OSS can be very helpful.

While many local companies might be interested in contributing to the energy transition, their existing ties to large corporations can be a barrier, given that Renewable Energy Communities (RECs) are designed primarily for small and medium-sized enterprises. Thus, if local companies are interested, facilitating open conversation about visions and goals is crucial. Building on established business networks – such as chambers of commerce – can help diversify outreach and bring in sectors ranging from tourism to craft industries.

Ultimately, the best actor to do mobilization are the RECs themselves by highlighting the advantages of shared governance. They themselves are the most powerful source of inspiration and therefore mobilization. Developing mentorship and building networks between emerging and experienced RECs can help to see the benefits firsthand.

Mobilization is therefore not a preliminary step to be rushed through. It is the foundation on which the future of community energy projects rests – an opportunity to spark enthusiasm, address hesitations, and create a collective momentum that carries RECs from promising ideas to locally rooted realities.



→ A plan is formed

Once a mobilization of possible actors has taken place, the next step is forming a strategic plan. Designing the strategic plan for an OSS means turning a broad vision for community energy into a clear, workable structure. It starts with identifying the key audiences – citizens, municipalities, companies, and RECs – so the OSS can speak directly to their needs. Moving on the definition of the services it will offer is crucial: collecting and simplifying existing tools, creating new ones where needed, providing training and fostering networking between local actors.

The strategic plan also sets the boundaries of action. Will the OSS cover all renewable energies, energy efficiency or even mobility? Will its support be technical, legal, financial –or a combination of these? A strong governance model is essential too, whether the OSS becomes its own entity or is hosted within an existing organization. Finally, everything comes together in a realistic deployment timeline that maps the rollout step by step.

The most central topic for building an OSS is without doubt how it will finance itself. Once the scope is clear, the next step is to size the necessary budget and resources, from staffing to subcontracting, as well as the costs of launching and maintaining the service over time. Budget issues should be considered very early to avoid miscommunications. Financing an OSS requires a smart mix of resources. Funding can come from public or private sources and offering paid services can also help strengthen long-term sustainability. The key is diversification; relying on multiple funding streams reduces risk and ensures the OSS can operate over time.

In its starting phase, the OSS must at least cover two essentials: building and maintaining a website with resources and tools (legal, financial, technical) and securing a dedicated contact person, even on a part-time basis, to take responsibility for the OSS and provide personalized support to the RECs. In the beginning the OSS should really focus on getting stakeholders involved, hold public meetings, mobilize and network with citizen and agreeing on the responsibilities and tasks the OSS should take on. As the OSS grows, additional investments come in. These include subcontracting specialized experts – for example, legal professionals to develop contract templates or trainers to design thematic workshops – as well as expanding the internal team to provide personalized guidance to RECs and to animate networking activities. The experienced OSS Association des Centrales Villagoises (ACV) – a partner in the **ECOEMPOWER** project – was initially built up by the local energy and environment agency and then diversified its budget with membership contributions (16%), fees for trainings and services (6%), public subsidies (48,8%), private fundings (27,9%) and other products (0,6%).

→ Operating a One-Stop Shop

Next is the operational phase where the OSS is launched. Ideally the launch could be accompanied by a social media or offline local campaign in the community to make all stakeholders aware. The hosting structure and governance should have a solid form, and the web platform can be filled up with important content: Contact information of best-practices and support structures, tools can be uploaded, information of the shared services and so on. Ideally the website is standing alone and not hosted by a bigger website, and budget as well as human resources are dedicated to keeping it up to date.

The last step is the actual implementation of the strategic plan and therefore starting to offer the services to a broader public. In the **ECOEMPOWER** project, we detected six main categories where the services can be divided into:

1. Awareness raising, facilitation and communication
2. Capacity building of RECs and/or local public
3. Networking
4. Project development assistance
5. Aggregation of projects and/or support to commercialization
6. Assistance to policy development

Inspiration for services can be found in the Deliverable [5.3 “Online Guidelines for the creation of a One-Stop Shop for Energy Communities”](#) from the **ECOEMPOWER** projects partners. Some ideas taken from this deliverable are these: To help RECs raise awareness, one service an OSS could provide could be communication training, so the capacity of the diverse group of people in the REC would be raised and undetected talents spotted. To help RECs network better, the OSS can organize and facilitate regular in-person events for RECs to come together and exchange on challenges – also a mentoring network or buddy system is a great way for RECs to network meaningfully.

Lastly, aggregation of projects is one key area the OSS can help RECs, here partnerships with banks, insurance companies and accounting offices could help to get members better fees with those institutions – costs that usually appear early in the process of starting up an REC. All additional examples can be found in the deliverable.

Creating Public-Private Cooperation: CESLA, Italy



Val di Fassa is located in the far north-east of Trentino. It takes about an hour and a half by car to reach Pozza from Trento, but the snow covering the meadows around the stone and wooden houses and the sun-kissed peaks of the Dolomites welcome us to a magical land. The Ladin School of Fassa is a provincial institution that covers the entire cycle of education, from primary school to secondary school. It is unique that it educates children in the international climate that a contemporary school must guarantee, but also teaches Ladin, an alpine language protected at European level and still commonly spoken in Trentino and South Tyrol. It is in this climate, which combines tradition and innovation, that the **CESLA (Ladina School and Nursery Energy Community)** energy community was born and is about to become operational.

Thomas Zulian is a teacher at the Ladin school in Fassa but, as it is often the case in mountain areas, he is an active member of his community even when he is not teaching. Today he is president of the energy community that was born from an idea of his students. One of them is **Matteo Moschini**, who is now studying law in Trento and is on the CESLA board supporting Thomas in sending the missing documents to the GSE (Energy Services Manager) that will make this community operational.

It was 2022 when we participated with our students in the "First Lego League" competition. The high school class had to come up with an innovative, concrete and feasible project on the topic of energy, – says Prof. Zulian, – and the students came up with a project to create an energy community involving the school and the nearby nursery school. At that time RECs were a novelty in Italy and there

was a lot of enthusiasm. However, we didn't know much about energy and had to do some research. We contacted the Provincia di Trento (PAT), the Riccomassimo energy community, the first to be established in Trentino, and the local electricity consortium, and we began to develop a concrete project.

The competition gave rise to a concrete project and a small working group of teachers, students and parents. The head teacher, known in Ladin as Sorastant, Federico Corradini and the nursery school management committee were also involved. *The Ladin school has several locations, including primary school, scientific high school and art school – explains Matteo – We thought we would produce clean energy and use it within the various schools. The incentive generated in this way would go to the energy community, which can use the resources to purchase materials useful to the school.*

One of the most delicate aspects was deciding on the legal form of the energy community – says Thomas – Italian legislation was unclear and kept changing, and we didn't have much expertise. We consulted Provincia di Trento, which began to support us in the ECOEMPOWER project, and we realized that an association would suffice for the type of community we had in mind. One of the members of the nursery committee works in an accountant's office and helped us draft the articles of association, so we started with the founders, myself, some students and school representatives. Although the association is weak, it can adapt well in a context such as this. CESLA does not require initial investments nor does it plan to distribute profits among its members, but rather to allocate everything to the schools. The purpose is clear, limited, immediately obvious to all members and of high social value. With these premises the community has prospects for a long life.



Pozza di Fassa is home to one of Trentino's historic electricity consortia. It is a cooperative that built the first hydroelectric plants in the valley at the beginning of the century and now, thanks to a special regulatory exemption, can continue to distribute energy to its members at a reduced price. *Following the example of what was done in Riccomassimo, we involved the local electricity consortium right from the start,– explains Thomas. Director Dino Detomas was immediately impressed by the idea, and the consortium, which was building several plants, made one available to us. Initially it was supposed to be the plant on the roof of the nursery school, but the activation timing did not coincide with the creation of the community, so they provided us with 130 kW of photovoltaic power on the roof of the church in Pera.*

The formula is beneficial for everyone. According to Italian law, the electricity – which produces energy – cannot be a member of an energy community, but it can provide a fully available system as an external producer. In this way, the investment and the energy produced remain with the electricity consortium, but the virtual exchange that generates the incentive can be made available to CESLA. This is fundamental to this initiative because it relieves volunteers of the significant cost of installing the photovoltaic system, which would otherwise be unsustainable.

The plant is in Pera, located under the same primary cabin – says Matteo – We are now registering our school buildings on the GSE portal. We were asked for some technical clarifications, which we provided thanks to the support of PAT, and we hope to be up and running soon. At the moment, we are starting with a few members and school utilities, but the idea is to expand. Potentially, we could cover the entire Val di Fassa. At the moment there



Matteo Moschini and Thomas Zulian

are no other energy community projects here, and this initiative, which started as a student exercise, could become really important for our valley.

Starting from this initiative, we began talking about energy at school and in the local area – Thomas and Matteo continue. These topics are not always easy to explain, but thanks to CESLA, we want to work on energy saving and teach people how to consume at the right time. Our experience has been well received, and we have received praise at national level. We went to Milan to a conference hosted by the research center Ricerca Sistema Energetico (RSE), which dedicated a publication to our initiative. And now other schools are starting to think about similar projects. In Riva del Garda, another high school is starting to think about creating a renewable energy community using the school's plant, which is currently under construction. We have put them in touch with PAT and we will see if something comes of it. The next goal is to see the energy community up and running and start opening participation to external members, starting with families. When GSE accepts the configuration,

the community will start working. We hope to be up and running by the end of the school year. At that time, we will hold an event to present CESLA to the Val di Fassa and start involving new members.

Joining costs nothing and helps the school in Fassa, which educates our children and keeps Ladin traditions alive – explains Prof. Zulian. This is the message we want to send to our valley with this community, a clear sign that the younger generations are active and looking to the future.

On the roof of the church in Pera, there is 5 cm of snow covering the photovoltaic panels. Not enough for the Olympics that are about to begin, too much for the panels to work. The system seems to be waiting for the documents to be ready to start generating the energy needed to power CESLA. Energy that comes from below but aims high, ready to harvest the sun that beats down on the peaks of the Dolomites in the Fassa Valley and looks to the future of the students at the Ladin school.

Citizen Energy and Participation in the Public Sector

Energy justice, as was discussed in the previous chapters, is the great promise RECs bring. But when not stirred in the right direction, RECs have the chance of becoming elite niche projects as Bosco et al. formulate it⁽⁸⁾: “Although they [Renewable RECs] propose a virtuous model of clean-source energy production and consumption that is accessible and participatory, there is a risk that they will be seen as niches reserved for the privileged few.” As a key solution the scholars present the possibility to include RECs with their social and solidarity aspects into city planning, combining the use of public rooftops with the needs of energy poor households or neighborhoods. As we can see in the example of Val di Fassa not only can public roofs serve as a base for an energy community, but it is also a hub for innovation, combining teachers and students' efforts and reaching all different parts of society. The underlying aspect of a public institution to provide knowledge and education as a human right and disconnect from income or status brings along a thinking framework, that energy

could one day take on: Being a human right for decent living conditions it must be organized collectively to serve all people's needs.

Through **ECOEMPOWER** we listed different forms of RECs and especially looked at the different outcomes and predispositions in place to realize such institutions. We listed 10 classes of RECs⁽⁹⁾ and sorted them by proximity and purpose. Some, such as “Class 9: Collective Technical Service Provision” rather focus on financial gains for the communities' members. Others such as “Class 3: Collective Self-Consumption – regional and local” have the purpose of reducing the cost of energy and enabling shared self-consumption in neighborhoods. We want to look closer at this category here, since it seems to be the base idea for integrating RECs into special and social planning.



Example of Implementation of a Collective Self-Consumption:

→ Costumer segments:

This class foresees the active participation of the members or shareholders, which can be municipalities, citizens, SMEs or regional bodies. All shareholders are actively engaged in energy production, consumption and storage while utilizing medium to low voltage levels. Excess energy can be sold to external energy suppliers or neighboring districts.

→ Value proposition:

Economically members can save costs through self-consumption, which is especially valuable in low-income neighbourhoods. Social community building and job creation can be a big upside of this REC class. Additionally, members of the community can decide to use a solidarity payment system, to adjust tariffs to the individual situation (such as in the Greek case). These RECs often come with an altered sense of energy efficiency and promotion of sustainable day-to-day behavior.

→ Key resources:

Usually, this class of REC needs a reliable grid connection and must be in some sort of arrangement with the local grid operator. Besides the diverse sources of energy that can be installed throughout a neighborhood (solar panels on a school, waste-heat and collectively used heat-pumps etc.) these RECs usually invest in electrical or thermal storage systems to keep the flexibility of the neighborhood's energy provision up. Software will also be needed to ensure transparent tracking.

In “Class 4: Collective Self-Consumption – residential” the case of sharing energy behind the same grid point is discussed in further detail. Common to both classes

is the high amount of volunteering and involvement of citizens in such a project.

Municipalities planning a neighborhood with a Class 3 or 4 REC should be aware that investing time in volunteering will have boundaries for people: Time spent volunteering is not paid and therefore requires a high income to effort such extra time capacities, knowledge must be built up in order to understand the technical details of the energy transition and/or community building can take time and personal/emotional effort. All these things must be considered by municipalities and can be helped out through service provision in community building, workshops on technical specificities or non-monetary incentives for volunteering, such as catering at workshops and citizen engagement events, certification for attendance of workshops and volunteer work, that can help find employment, paid trainings or considering paid volunteer programs such as ERASMUS or civil service to be combined with energy community built up or cooperating with school projects or university interns. There are many ideas on how to make volunteer services attractive to citizens – monetary or non-monetary – and they have to be explored by municipalities if they successfully want to cooperate with citizen-led initiatives.

That said, especially the capacities to focus on vulnerable groups and fair involvement is something RECs struggle with since there are often not enough capacities to work on the right communication strategies or prepare incentives for everyone to join. Here is where public institutions can come in and provide assistance and personnel capacities to support the RECs in this field.⁽¹⁰⁾



Building a Smarter Energy Future: Zlín Energy Community, Czech Republic

The Zlín region reunites different initiatives all with a goal of creating RECs, sharing energy and self-using it in the best way possible. Designing a larger, interconnected local energy system that can achieve significant economic benefits through its scale stands at the core of the idea. **Teplo Zlín**, a municipal heating company, is among the pioneers exploring how shared production and consumption of electricity can reshape regional energy management.

From the very beginning, co-founder **Pavel Mačák** saw the emerging energy community as an opportunity to rethink how local resources are used: *Our main motivation was the plan to build our own photovoltaic power plants and to make effective use of surplus electricity*, he explains when reflecting on the initial impulse. The idea was never just about technology, but they saw this as *an opportunity not only to reduce operational costs but*

also to contribute to more sustainable energy management in our region.

What particularly appealed to the team was the promise of scale. The concept of a larger, interconnected group offered both economic and operational advantages. As Mačák puts it, *they were especially drawn to the idea of a larger, interconnected community that can achieve significant economic benefits through its scale*. Uncertainty, however, was part of the journey from day one: *Yes, there were concerns at the start, and some of them persist even now*, he describes. These were mostly tied to the novelty of community energy in the Czech context, where legal frameworks are still evolving. Teplo Zlín chose to navigate this landscape by building a reliable network and *address these issues gradually in cooperation with experts and institutions experienced in this area.*

Teplo Zlín has had to adapt expectations to current technical and regulatory realities. *In practice, we have encountered issues with reserved capacity – we missed some opportunities because the system does not yet offer sufficient flexibility*, Mačák explains. For now, the focus is on strengthening the production side and identifying solutions that *make both economic and technical sense in our conditions*. For other municipalities who wish to embark on a similar path, he advises them to get the expert help they need: *We would definitely recommend turning to qualified experts, such as EAZK (energy agency) or other experienced partners, who can help with analyzing options and designing the most suitable approach. A good start always lies in careful preparation and a realistic assessment of local conditions.*

Despite the operational and regulatory challenges, expectations within the team remain grounded. *To be honest, we don't expect a major change – rather, more work and organizational challenges*, he says with a smile, adding, *it may cost us some nerves, but the outcome will be worth it.* One moment in particular remains vivid from the founding phase – the encounter with the Energy Regulatory Office. *A very significant moment was our experience with the Energy Regulatory Office, which, in our opinion, exceeded its authority when assessing the community's statutes.* The episode highlighted just how young the field of community energy still is. Yet it also reinforced the importance of perseverance: *It was a valuable experience that confirmed how important it is to negotiate patiently and seek common ground with regulators.* Beyond the administrative steps and technical hurdles lies a broader vision of local resilience and shared responsibility. As Mačák summarizes, *when we join forces, we become stronger – we can use available resources more efficiently, reduce costs and contribute to regional energy self-sufficiency.*



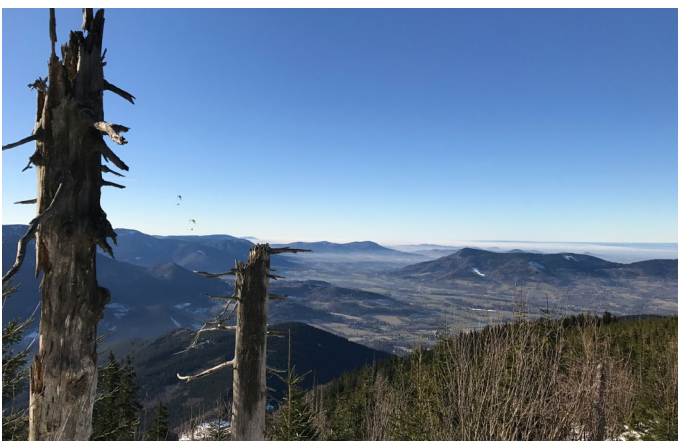
Pavel Mačák in conversation with interviewers

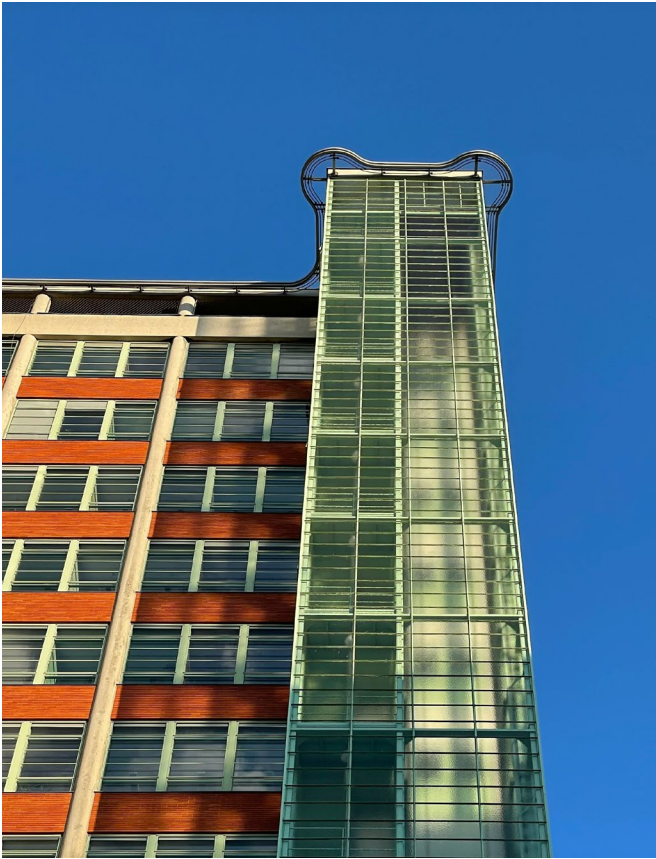
Looking ahead, Teplo Zlín's goals are both pragmatic and ambitious: *Our goal is to complete the planned energy sources and ensure that the city can make full use of its production and consumption potentials.* The hope is not only to reduce energy costs for members but also to share benefits by establishing a *contribution fund to distribute the financial gains fairly among members.* As Zlín steps further into the energy transition, the forming community stands as a sign of what becomes possible when local actors decide to build their own future – patiently, collaboratively, and with a firm eye on long-term sustainability.

Flexibility And Technical Infrastructure in Citizen Energy

Interconnectedness of a system relies heavily on suitable technical infrastructure. In **ECOEMPOWER** we deep dived into the current states of our pilot sites' existing infrastructure, equipment and system specification, to design a tool that would meet all pilot sites requirements when it came to predictions, they need to make to successfully manage an energy community. Many of these results appear to be generally important for further software development and we want to share them in this chapter.

In the Zlín region, software tools can significantly help to create a more interconnected and accessible energy system by bringing together heat, electricity, solar power, wind generation, and battery storage under one digital roof. Through advanced energy modeling, communities can simulate how different technologies interact, allowing them to plan smarter and operate more efficiently. This is especially valuable because each pilot site (we worked with three pilot sites in the region: Vlčnov, Slavičín and Zlín) in the





region is at a different stage of development: Vlčnov needs simulations to understand how solar panels can be distributed across public buildings and how energy flows between them; Slavičín uses modeling to test how batteries and solar installations can best work together to increase self-consumption; and Zlín itself relies on modeling and planning features to guide its early solar projects. As energy sharing becomes possible in the future, these tools will also allow administrators to predict how energy could move between households or apartment buildings, helping balance loads and reduce pressure on the grid.

For communities that are just beginning their energy transition, cost-benefit analysis software provides an essential starting point. It helps determine which renewable projects are financially viable, offering clear insight into payback periods, long-term savings and investment priorities. This allows smaller or newer communities to adopt renewable energy gradually and with confidence.

By combining energy modeling with cost-benefit analysis in one integrated platform, the Zlín Region can offer tailored recommendations for each community – technical optimization for battery systems in Slavičín, expansion strategies for municipal buildings in Vlčnov or financial feasibility studies for Zlín's first solar installations. Together, these tools enable a more coordinated, efficient and sustainable regional energy ecosystem, making the shift to renewables easier, smarter and more economically sound.

One central issue of an interconnected energy system, where energy can flow locally and move to where it is needed or stored when it is not – is the recording of data. Integrating wind and solar into balancing systems and including new electricity loads like heat pumps and E-Mobility requires close-knit monitoring of data. The European Union has started a rollout of so-called smart meters that could provide real time data quarter-hourly to detect energy flows – this rollout should have happened at least to 80% by 2024 but when looking at the numbers just few countries have achieved one of them being France.

Looking at our pilot sites the state of the rollout of smart meters heavily influences the state of the technical infrastructure needed for the integration of the energy system, the possibility of energy sharing and the way RECs can interact with software. When we look at the different pilot sites we see that the way the grid is structured has an influence on how far the smart meter rollout goes: In Italy for example our pilot site is a very mountainous region where grid cabins span over various valleys, far off the main grid, which leads to some special cases where smart meters could not yet be installed. In France we see a very successful rollout of smart meters reaching 90%, which could be connected to the fact that all is managed by one primary Distribution System Operator (DSO) that decided to upgrade to a certain type of smart meter.

Tools Developed Through ECOEMPOWER

In **ECOEMPOWER**, we have developed three different service tools that can support RECs⁽¹⁾. These tools rely on an analysis of all the needs we have found in the RECs and that can be tackled through software development.

The first of these is the **Forecasting Tool for Energy Generation and Demand**. By combining intelligent data processing of weather data with easy-to-read visuals, it helps residents and community managers see what's coming – both in terms of how much electricity they'll need and how much their solar panels are likely to produce. Its monthly forecasting feature gives communities a long-range view, perfect for planning investments or scheduling maintenance. Meanwhile, its short-term, hourly predictions are ideal for day-ahead decisions, helping to activate flexibility, shift consumption or reduce stress on the grid. With this tool, energy becomes something people can anticipate and manage, not just passively consume.

The **Energy System Modelling and Scheduling Tool** helps communities understand how their buildings, batteries, solar roofs, and energy habits all fit together. It creates detailed energy profiles for each building,

offering simple recommendations for smarter day-ahead planning. Its community-wide simulation feature then takes things to the next level: it maps out where energy is flowing, where it's needed, and how it can be shared more effectively. And for those planning tomorrow's energy landscape, its scenario builder allows users to test "what-if" ideas and instantly see how these changes would affect self-consumption and overall performance. This tool is especially necessary for cases like the Zlín region where interconnectedness is a key feature of the local energy self-consumption.

Additionally, we have developed the **Cost Benefit Analysis and Decision-Making Tool**. Users can model costs, savings, payback periods, and financial risks and see the financial impact of these investments. The tool even links with the modelling platform, allowing technical scenarios to flow seamlessly into financial assessments. It offers **contract and tariff optimization features** that can help communities find the best cost-benefit balance for their project and avoid costly inefficiencies.

Together, these three tools form an **ECOEMPOWER** toolbox of valuable software tools that can help RECs tackle their everyday needs.



Growing Acceptance for Renewable Energy in Rural Areas: Eppishausen, Germany



Once a landfill, now a source of energy for the households of the village Eppishausen in lower Allgäu counting close to 2000 inhabitants. The cooperatively owned open space PV surrounded by trees and serving a couple of sheep for grazing lies outside of the population's eyes nestled between the beautiful hills of the region. It has an installed capacity of 426 kWp and is one of five projects the energy cooperative **Dorfenergie Eppishausen eG** owns. When the PV plant was just installed, **Hubert Seitz** (member of the executive board) remembers how the cooperative celebrated a little party: *The weather was pretty bad, and we met at the former landfill site, which wasn't really*

a good place for a party. But the occasion was worth it, because we had not only commissioned a PV system, we had also initiated a community project that connected us beyond our community. I remember saying: The weather is bad and the location is not very festive, but we have achieved a lot together.

The project was special since it connected Eppishausen with another village nearby, citizens from which could also invest. In this rural and traditional area, connection to the home is strong and cooperating with the neighboring village brought up memories of old rivalry. Once the members of the

energy community competed on the soccer field against the neighboring youth, whilst today **Hermann Kerler** (member of executive board) assures that they can laugh about old times – while cooperating on renewable energy projects. *These are social connections that have been created through our initiative and have dispelled any prejudices that may have existed*, he continues.

When the energy cooperative was founded in the early 2000s, renewable energy was quite uncharted territory. Hubert Seitz remembers them to be pioneers at that time: *It was still unclear whether the systems would last for the 20-year subsidy period, what the situation would be regarding grid connection, and even the tax office didn't really know how to deal with something like this. There was simply no experience to draw on.* The group gathered members from different backgrounds, engineers, bankers and many more – to draw on this knowledge was vital. All were connected in their interest in renewable energy technic. The work all happened (and does until today) on a voluntary basis and is very time-consuming. *The legislature is constantly demanding new evaluations or data collections. Of course, all of this is work, and it has to be done. And it's clear that not all citizens can or want to take the time for something like this – that's the difficulty: motivating or inviting the right people to invest their time in this cause*, describes Hubert Seitz.

The board members have stayed the same and only slightly changed over the years. The cooperative grew older with their members, now the board is all in their late 50s to 60s. Subsidies will be ending soon and either a renewal of the PVs or new projects must be found, to keep it going. Keeping this cooperative running is not only important for the energy transition but Hermann Kerler sees also a social value of such institutions: *These cooperatives are simply very, very important for keeping life in rural areas active. So that citizens don't become completely passive, stuck at home or on social media.*

The initiative has caused a change in thinking in the village. Hermann Kerler remembers proud citizens when they won a prize for their engagement in solar energy several times. Households would now invest in roof PVs privately as well. *Generating your own electricity is now ubiquitous and has become accepted*, Hubert Seitz confirms. People had to see that technology works



Former childhood soccer rivals, Hubert Seitz and Hermann Kerler, now united for a common cause.

before they were convinced. Regional firms seeing more discharges coming in from the village transitioning to solar power were happy. Any resistance against the cooperatives goals when they first started? Not in their case, but they have seen other places where resistance, especially against wind power was strong. Hermann Kerler sees the problem with resistance that it is a rather emotional reaction and therefore people have to be taken along, and a rational discussion is all the more so important:

If I plan a facility quietly and secretly and then at some point the public finds out about it, resistance will arise because negotiations took place behind closed doors. But if I tackle the issue head-on, provide information, and clarify the open and sometimes complex questions with experts, then that is an active contribution that people will at least take note of and form their own opinions. Often, such processes run quietly, and then opponents form, mobilize, and campaign against it. Sometimes they are quite vocal, and you think they are the majority, even though they are only a small minority. If the proponents have to fight against this, they are on the defensive and may have to argue against existing prejudices. Proponents must therefore actively and promptly inform the public and those affected. That is why it is very important to mobilize people who, for example, are in favor of a wind turbine and recognize its benefits and opportunities. The trick is to engage in open dialogue with factual and positive arguments and credible people.

From other regions stories have been told, where mayors who stood up for their cause and took the people along, even though there might be some resistance at first, were very successful. Today citizens are

happy about the income inflows, which can be used to help municipalities build infrastructure for local wellbeing and the prior prejudices are forgotten. Of course, those majors always took a chance and risked being reelected, but also, they were people who knew the citizens and engaged in local discussion. Not only does the discussion surrounding these topics change the way citizens think about renewable energy but ultimately it changes the way they think about energy consumption as such.

Times are changing for the Eppishausen energy cooperative in the rural south of Germany. The financial situation will change with the upcoming changes in the subsidies. Recently a new project, an open space PV, was launched and the cooperative invested a share of 12%. From there on the group will see where to go. Hermann Kerler still stands with his initial motivation, *what one person cannot achieve, many can.*



Reaching More Acceptance Through Citizen Participation

Through our work in **ECOEMPOWER** the mechanism behind the art of acceptance is no longer hidden from us. It takes different ingredients every time, but we could find out some key aspects, why and how participation can foster acceptance of a local renewable energy project.

→ Mobilizing Participation

In **ECOEMPOWER** we found that a combination of clear information, personal interaction, and practical demonstrations effectively encouraged citizens to get involved. Communicating the potential financial, environmental and social benefits should not be underestimated. Mobilization tends to start with key individuals and those with a direct interest before gradually reaching the wider population.

Throughout the project we came to extinguish between several target groups with varying levels of engagement – from the core team to the broader community, each requiring tailored communication. The project also highlighted that the **way information is communicated** is crucial for mobilization. Different channels appeal to different audiences, whose motivations can range from financial incentives to a desire

for autonomy. Understanding and characterizing these groups accurately is therefore essential for successful engagement.

→ Identifying key stakeholders

Key stakeholders are often the driving forces behind an initiative and can only be recruited to a limited extent. Typically, they possess in-depth knowledge or interest in energy topics and a strong personal commitment to advancing the energy transition. Even if knowledge is initially lacking, motivated key stakeholders can get help through a local OSS. While their motivation cannot simply be commissioned, they can be supported through facilitated access to networks, communication tools, and, if needed, financial resources.

It is also possible to create conditions that enable more individuals to become key stakeholders. Currently, the average age of active participants is above 60, due to the high workload as a volunteer in RECs. By offering measures such as childcare during meetings or small volunteer stipends, new target groups – such as younger people, parents or those with lower incomes – can also be enabled to participate.

→ Developing and Sharing a Common Vision

In the case described, significant attention was given to the visioning process, and its outcomes were formalized by the local council in an official document. This approach not only gave citizens space to share ideas but also allowed them to see which visions could realistically be supported by the municipality. Such formalization strengthens citizens' sense of commitment and motivation.

Drawing on insights from **ECOEMPOWER**, a general logic for these processes can be outlined: They begin with **open communication** about experiences and opinions on energy issues, emphasizing listening and mutual understanding. This is followed by a **facilitated discussion**, ideally led by an external moderator, to surface differing perspectives and potential conflicts – since it is rare for a community to be entirely unanimous. **Fair mediation** and acknowledging emotions are key components of this phase. Finally, **compromises and shared goals** should be documented in a collective statement or vision paper.

Creative formats can support this process – such as competitions, role-playing games, visual tools (like mind maps or graphic recordings) or the involvement of neutral professionals specializing in mediation or process facilitation.

→ Financial Participation

An important aspect of participation involves ensuring that citizens benefit economically from local energy projects. A traditional approach is to offer direct participation, for instance through cooperative shares. Alternatively, **municipal (co-)ownership** of energy plants can generate profits that flow back into community projects, benefiting all residents.

Experts estimate that such plants can make a significant contribution to a municipality's budget. Experience also shows that participatory renewable energy projects stimulate **local value creation**, as contracts are typically awarded within the region. Moreover, **local jobs** often emerge as when a cooperative operates a local wind turbine.⁽¹²⁾

Participation therefore acts as a powerful **lever to increase public acceptance** of renewable energy and the broader energy transition. The main considerations are summarized in this policy brief. For additional tools and guidance, see the **ECOEMPOWER project's Adaptable Framework for RECs and Engagement Building**, which provides a rich collection of methods for successful citizen participation.



Continuing the Journey

This report marks the end of **ECOEMPOWER**'s journey in supporting OSSs and RECs in five European countries: Greece, Germany, France, Italy and the Czech Republic. We have summarized our findings and the stories behind our work on the preceding pages and presented our recommendations to policymakers on the first two pages. Although **ECOEMPOWER** is coming to an end, supporting RECs will become increasingly important, and our partners will continue offering their support in the future.

With rising geopolitical tensions and climate change gaining speed we find ourselves in a situation where business as usual is no longer an option. Through **ECOEMPOWER** we have met people who understand that we need a shift in how we live, work and engage in our communities. Community energy is a key idea representing this new way of living and engaging: Here energy is not framed as a product but rather as a right all Europeans should have and the power to decide about the price and distribution of it should lie in the people who ultimately use it. Therefore, citizen energy is not just a nice add-on to the energy transition, but it is a glimpse of a truly just energy system that serves local communities. Citizen energy is no set concept, but it is a process where local ideas, opportunities and barriers interplay to come to a solution that exactly fits the community.

This is why we believe telling the stories of the people behind it is the best way to spread the idea: There is no ultimate guide on how your energy community will be successful or which stakeholders have to be involved, there is just expertise and stories from the people who have done it – and we should consider them experts for any inquiry might it be on the local or international level.

If you are thinking of starting an energy community, here is where to begin: get in touch, exchange ideas and join the journey of many European RECs that are taking change into their own hands.

Endnotes

- (1) ReSCOOP: “Q&A: What are ‘citizen’ and ‘renewable’ energy communities?” URL: <https://www.rescoop.eu/toolbox/q-a-what-are-citizen-and-renewable-energy-communities>
- (2) Just after writing this Whitebook the Citizen Energy Package was released that underlines the commitment of the European Commission to strengthen Citizen Energy in Europe in the coming years: https://energy.ec.europa.eu/topics/markets-and-consumers/energy-consumers-and-prosumers/protecting-and-empowering-energy-consumers_en#citizens-energy-package
- (3) See Glossary
- (4) European Commission (2023): Renewable Energy Directive, RED III
- (5) Hoicka et al. (2019): Implementing a just renewable energy transition: Policy advice for transposing the new European rules for renewable energy communities
- (6) ReSCOOP: Placing energy communities at the heart of the Energy Investment Strategy, URL: <https://www.rescoop.eu/toolbox/placing-energy-communities-at-the-heart-of-the-energy-investment-strategy>
- (7) ECOEMPOWER (2024): Deliverable 3.3 “Collection of indicators for assessing social impact and guidelines for their measurement”
- (8) Bosco et al. (2024): Environmental Design on Site-Specific Energy Solidary Communities around Public High Schools in the Metropolitan Area of Naples (Italy)
- (9) ECOEMPOWER (2024): D4.1 Classification Of Organisational Forms For Collective And Cooperative Energy Supply And Their Typical Business Models
- (10) Hanke and Guyet (2023): The struggle of energy communities to enhance energy justice: insights from 113 German cases
- (11) ECOEMPOWER (2025): Energy – ICT Platform: URL: <https://ecoempower.eu/Resources/Deliverables>
- (12) ECOEMPOWER (2024): D 3.1 [Adaptable Framework for Energy Communities Engagement and Building](#)

Imprint

Voices from the Grid: Stories Powering Policy Change

Whitebook

The project **ECOEMPOWER** – ECOsystems EMPOWERing at regional and local scale supporting RECs receives funding from the European Climate, Infrastructure and Environment Executive Agency (CINEA) under Grant Agreement n°101120775.



Authors:

Johanna Vordemfelde (eza!) · Massimo Plazer (PAT)

Reviewers:

Gionata Luca (FBK) · Juliette Rasse (ACV) · Dagmar Jackel (eza!) · Eleni Kotali (UBITECH) · Janina Katona (B.A.U.M.)

Interviews:

Italy: Massimo Plazer (PAT) · Thomas Zulian (Ladin school, Fassa) · Matteo Moschini (CESLE energy community)

France: Juliette Rasse (ACV) · Jean Eric de Rango (VercorSoleil)

Czech Republic: Karolina Vitkova (EAZK) · Pavel Mačák (Teplo Zlín)

Greece: Eirini Pragia (ROCG) · Ioannis Markou (Domokos Energy Community)

Germany: Johanna Vordemfelde (eza!) · Hermann Kerler & Hubert Seitz (Dorfenergie eG Eppishausen)

Layout und Satz:

Lisa Eidt



[ECOEMPOWER website](#)



[ECOEMPOWER Project on LinkedIn](#)