



D2.10 BECoop catalogues for the provision of business and financial support services – Final

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About

Over the last years, the EU has witnessed some remarkable steps in Renewable Energy (RE) deployment. However, at the same time, we see an increasingly uneven penetration of RE across the different energy sectors, with the heating and cooling sector lagging behind. Community bioenergy schemes can play a catalytic role in the market uptake of bioenergy heating technologies and can strongly support the increase of renewables penetration in the heating and cooling sector, contributing to the EU target for increasing renewable heat within this next decade. However, compared to other RES, bioenergy has a remarkably slower development pace in the decentralised energy production which is a model that is set to play a crucial role in the future of the energy transition in the EU.

The ambition of the EU-funded BECoop project is **to provide the necessary conditions and technical as well as business support tools for unlocking the underlying market potential of community bioenergy**. The project's goal is to make community bioenergy projects more appealing to potential interested actors and to foster new links and partnerships among the international bioenergy community.

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 952930.

Project partners

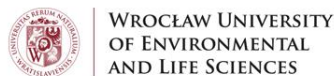


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Abbreviations

BM	Business Model
BMC	Business Model Canvas
CEP	Clean Energy Package
CSA	Coordination and Support Action
EC	European Commission
ESCO	Energy Service Company
EU	European Union
IEMD	Internal Electricity Market Directive
KEP	Knowledge Exchange Platform
MS	Member States
NECPs	National Climate and Energy plans
NoI	Network of Interest
RE	Renewable Energy
RED II	Renewable Energy Directive
RES	Renewable Energy Sources
RESCoops	Renewable Energy Cooperatives

Executive summary

For many citizens, community initiatives, and authorities being potential leaders in the uptake of community bioenergy and the process for launching, expanding and upscaling their projects is a quite challenging and demanding process. A series of hurdles must be effectively tackled, and major knowledge and knowhow gaps have to be covered. The scaling up required to make a real difference demands levels of expertise to be shared and disseminated to volumes of citizens and community representatives with no prior knowledge and skills in the field. Such a demand should be addressed with the provision of tailor made, easy access and jargon free support tools that are designed not just to facilitate the implementation of bioenergy community projects but also incite new initiatives by highlighting the opportunities that are there to harness and increase the attractiveness of the RESCoops to the wider society.

BECoop aspired to develop such tools for supporting the creation, consolidation and function of bioenergy RESCoops. These include support tools and technical and business/finance catalogues, that offered to the bioenergy community stakeholders, initially to the BECoop pilot regions selected cases and later on at a wider scale, with the aim to guide them through complex decisions and minimise their project development efforts (Toolkit, Knowledge Exchange Platform, Self-Assessment Tool, E-market Platform, technical and business/finance support services).

The BECoop business and finance catalogue as part of this effort, was developed by identifying and profiling the business models using the Sustainable Business Model Canvas tool to unveil the governance and financial models behind the successful community energy cases and to link them with relevant governance structures. This exercise capitalized on the findings of WP1, which presented the framework conditions of RESCoops and the Bioenergy Communities, and also identified successful case studies of community renewable energy projects to provide insights on best practices replication potential for the Bioenergy Communities. The assessment of these cases provided a baseline to indicate the relevance of specific governance/business structures for the Bioenergy communities. This assessment led to the definition of a set of respective business and financial support services that can be used to empower existing RESCoops or to manage the creation of new ones in a region. The catalogue of the business and financial support services was presented to experts to validate and enriched by their experience in the field. Finally, the services were defined in detail including a short description, their objectives/benefits and the delivery process steps along with a preliminary assessment of the services potential recipients/beneficiaries.

This report provides information about the updated business models for the uptake of community bioenergy projects as well as a definition of the final key business support services offered to the BECoop pilots to overcome the difficulty in selecting the right business and financing options. The updates are highlighted in the beginning of each section and the current version finetunes the content based on project experience and especially the deployment of our business support under T4.3. Therefore, after the completion of the project, this report aims to empower existing Bioenergy Communities to expand or to support the creation of new ones in the European Union and beyond.

1 Introduction

Renewable energy uptake relies on peoples' perceptions. In this context, energy communities and cooperatives (RESCoops) provide an ideal framework; they can empower a more effective, fair, and democratised clean-energy transition, leading to an increased social and consumer acceptance of Renewable Energy technologies and solutions. By 2050, almost half of the EU citizens could become energy producers meeting 45% of their energy demand¹. As recognized in the revised RED II (Renewable Energy Directive) and the 2030 Biodiversity Strategy, renewable bioenergy communities have a key role to play for a sustainable future, holding a series of benefits. This key role is due to their transformative potential to produce energy at a local level providing the framework and the opportunity for bottom-up energy initiatives in the form of energy community schemes.

Community bioenergy schemes in particular can play a catalytic role in the market uptake of bioenergy heating technologies in rural areas where there is an abundance of biomass², yet their deployment remains significantly slow: biomass-based communities account for only a minor share of existing RESCoops compared to solar or wind. In terms of production, electricity takes the lion's share, in contrast to heating. It is obvious that to make an impact though major scaling up is required. Such an endeavour has as a prerequisite the availability and easy access of expertise, best practices and know-how that can be shared with citizens, community leaders, local and regional authorities' representatives to enable them to lead the community bioenergy uptake and launch and/or expand and upscale their existing projects.

BECoop develops various such tools for supporting the creation, consolidation and function of bioenergy RESCoops. Most of these will be developed within Work Package 2 where this is organised as a set of support tools and technical and business catalogues, offered to bioenergy community stakeholders with the aim to guide them through the complex decisions and minimise their project development efforts. It is important to note that these tools are designed to be useful **both as standalone tools** to serve particular needs, but also as **a cohesive and complete set of tools** that can accompany and accommodate the needs of existing or prospective bioenergy communities in their various steps of development.

These various support tools include:

- a) A **Self-Assessment Tool**, as an easy-to-use tool for all possible actors and aspiring entrepreneurs of new cooperative bioenergy projects to support them assess their position and suggest steps to initiate a new bioenergy business.
- b) A **Toolkit**, to be developed as an online repository of already existing tools that can work complementary to the BECoop support services in supporting the development and operation of community bioenergy and heating projects.
- c) A **Knowledge Exchange Platform**, as both a knowledge repository of relevant community bioenergy resources and as a liaison structure among the EU actors of RE heating and community bioenergy. The Knowledge Exchange Platform will host all the tools developed and knowledge generated by the project to facilitate ease of access for the project duration and post project replication and exploitation.

¹ Caramizaru, A. and Uihlein, A., Energy communities: an overview of energy and social innovation, EUR 30083 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-10713-2, doi:10.2760/180576, JRC119433.

² A. Arodudu, A. Voinov, I. van Duren, Assessing bioenergy potential in rural areas A NEG-EROEI approach, Biomass Bioenergy 58 (2013), <https://doi.org/10.1016/j.biombioe.2013.07.020>

- d) An **e-market platform**, as a digital platform to act as a virtual environment for biomass heating and supply chains for educational and informative purposes.
- e) The **BECoop catalogue for technical support services**, as a report that will identify the most suitable technological solutions for community bioenergy projects as well as a definition of the key technical services to be offered by the project.
- f) And finally, **the BECoop catalogues for the provision of business and financial support services**, for which this report is the final version for the Task 2.5.

Task 2.5 has developed the BECoop business and finance support service catalogue by identifying and profiling the business models behind successful community energy cases and linking them with relevant governance and financial models while defining a set of respective business and financial support services that can be used to empower existing RESCoops and/or to manage the creation of new ones in a region.

The **Sustainable Business Model Canvas (Sustainable BMC)** methodology was applied to easily define the business ideas or concepts behind RESCoops that then enabled linking them with relevant governance and financial models. Then the literature was reviewed to seek the business models behind successful community energy cases and link them with relevant governance and financial models. Through this exercise an overall categorization of business models was achieved (see section 3) stemming from the identified interesting cases of RESCoops. Along with the profiling of the available business models, inputs from D1.1³ were used to identify a list of business and financial services that should be offered to cases of different specificities and maturity (technological solutions used, spatial aspects, socioeconomic factors etc.).

Through this process we were able to identify services that have already been applied in other existing RESCoop structures and could have high potential for empowering community bioenergy initiatives to reach their potential.

Task Leader Q-PLAN with the support of the other business partners developed a draft of the catalogue that was presented and shared with all the partners in more than one occasion to incite and exploit inputs by all partners (Project Meetings and ad hoc virtual meetings) and draft versions were shared for further comments and suggestions. In this sense, the identified services were grouped, detailed, and validated with BECoop partners and especially with the business partners, the project coordinator (WR) and pilot partners (GOIENER, ESEK, OBS, FIPER) while SEV also offered its experience. Further validation for the BECoop catalogues was sought by M18 (April 2022) when the BECoop Expert Panels were formed through the Network of Interest⁴ and finetuned them in order to ensure their replication value after the completion of the project.

With the above in mind, the present report is structured as follows:

- **The Introduction** briefly **presents the BECoop project context** in which this report was elaborated. It then it **introduces the approach** and the process that was followed in order to

³ D1.1 State-of-play of community bioenergy across Europe: market size, applications and best practices, D1.2 Regional and EU framework and value chain conditions affecting community bioenergy uptake, D1.3. Stakeholders' perceptions, acceptance levels and needs on bioenergy heating

⁴ The BECoop Network of Interest is an open community of Bioenergy experts and actors that will be mobilised allow for exchanges among stakeholders and validation activities. By April 2022 expert panels will be formed to act as mentors and participate in validation activities.

deliver the BECoop catalogues for the provision of business and financial support services and finally it **outlines the report structure**.

- **Section 2** delivers the **profiling exercise of the RESCoops business models** that we applied as a method to **classify the BECoop Cases Studies** in terms of Governance and Finance. Also, in this section four (4) Business Models Profiles are developed (see also Annex II) as a guide to define the appropriate set of business and finance support services.
- **Section 3** presents the **updated definition of the business support services** including a per service defined description, scope, and roles along with a preliminary assessment of the services potential recipients/beneficiaries.
- **Section 4** puts forth the **definition of the updated finance support services** including a per service defined description, scope, roles along with a preliminary assessment of the services potential recipients/beneficiaries.
- The final section presents the main **conclusions** emerging from the work done and describes the **steps** that followed for the support of the pilot cases and the replication potential after the end of the project.

The **Annexes** included in this report present a table with:

- The Business & Financial support services catalogue in a concise form that includes the basic indicative steps per service to facilitate the understanding of the potential recipients.
- The Classification Matrix of RESCoop successful cases collected assessed per governance model.
- An Indicative list of Financing Solutions,
- A short description of the European Union Funding Instruments and programmes.
- A questionnaire that was developed with the aim to identify our RESCoops Business needs.

The updated version of the activities and results performed under T2.5 are documented in this report titled “BECoop catalogue for the provision of business and financial support services – Final version” (due on M30 - April 2023). The content of this final version has been refined based on the project experience, particularly from the deployment of business support under T4.3 and the validation of the expert community. The aim of the expert community was to ensure the relevance of the services and their potential for replication beyond the project duration. The final version of the business and financial catalogue incorporates some changes which are highlighted below:

- New Business Model Canvas has been created for the BECoop purposes. (See figure 2)
- A questionnaire has been developed to unveil the business needs of our RESCoops. (See Annex V)
- New Business Plan table of contents has been formed to serve better our RESCoop needs. (See section 3.2.3)

- Market Research has been integrated as a separate section in the Business Plan service.
- The mentoring service has been revised based on the actual implementation of BECoop peer-to-peer meetings that were organized under T4.3. A dedicated pool of mentors has been created from the Network of Interest (NoI) to provide this service. (See section 3.4)
- Investment planning service process has been updated due to the deployment actions of T4.3 and T4.2 to provide the necessary input for the final feasibility studies. (See section 4.1.3)

2 RESCoops Business Models Analysis and Profiling

2.1 Classification of BECoop Cases Studies in terms of Governance and Finance

Governance – organizational structure

Energy communities organized as energy cooperatives are by far the most common in Europe⁵. Currently, about 1500 renewable energy cooperatives are members of the European federation of citizen energy cooperatives (RESCoop.eu), serving more than one million European citizens⁶. However, the real number of such initiatives is uncertain, and an inventory carried out by RESCoop.eu was able to identify more than 2400 renewable energy cooperatives across Europe⁷.

RESCoops governance is usually in the hands of shareholders (households, SMEs, public entities and other investors), being part of the revenues reinvested in the community (e.g. improvement of infrastructures) and the rest distributed among the shareholders according to the cooperative statutes⁸. Thus, cooperative shareholders may be supplied with renewable energy while being financially compensated by their investments through direct payments. Larger energy cooperatives can benefit from collaborating closely with municipalities, which can provide extra sources of technical knowledge and funding. In some cases, the management responsibility is put in the hands of public entities, which become responsible for managing the energy cooperative on behalf of customers, while benefiting from cheaper energy for public services⁹ (as street lighting). Municipal energy cooperatives have been developed in countries as Denmark, Germany, France and Spain, where municipalities play a role in either energy supply or distribution activities.

RESCoops are either formal cooperatives (adopting the cooperative legal form) or groups of citizens that organize according to the cooperative principles. Regarding the legal forms, every European country has its own legal forms that frame with the cooperative principles. In the current sample, a large majority of organizations are formal cooperatives; yet groups of citizens or community organizations active in the renewable energy field are also numerous, though probably less visible.

The members of RESCoops can have multiple roles¹⁰ combining ownership, investment and use. Each one is associated with specific responsibilities and decisions:

⁵ European Commission, Joint Research Centre, Uihlein, A., Caramizaru, A., Energy communities: an overview of energy and social innovation, Publications Office, 2020, <https://data.europa.eu/doi/10.2760/180576>

⁶ Bauwens T, Gotchev B, Holstenkamp L. What drives the development of community energy in Europe? The case of wind power cooperatives. *Energy Res Soc Sci* 2016;13:136–47. <https://doi.org/10.1016/j.erss.2015.12.016>.

⁷ The European Commission. A cooperative way to save energy. Retrieved in: <https://ec.europa.eu/easme/en/news/cooperative-way-save-energy>. [Accessed 17 May 2020].

⁸ Tounquet F. Energy communities in the European union. Brussels. 2019. Retrieved from: <https://asset-ec.eu/wp-content/uploads/2019/07/ASSET-Energy-Communities-Revised-final-report.pdf>. [Accessed 8 May 2020].

⁹ Engelken M, R'omer B, Drescher M, Welpel I. Transforming the energy system: why municipalities strive for energy self-sufficiency. *Energy Pol* 2016;98:365–77. <https://doi.org/10.1016/j.enpol.2016.07.049>

¹⁰ RESCoop Business Model, 2020 EU RESCoops (<https://www.rescoop.eu/uploads/rescoop/downloads/RESCoop-Business-Models.pdf>)

- By acquiring shares, they become owners of the RESCoop and therefore participate in the control of the organization.
- By acquiring shares, they also become investors with an expectation for a return on their investment. The return can be financial, but it can be social and environmental or a combination of all three.
- By their economic participation, they become users of the RESCoop and get the right to ‘use’ its services. Some RESCoops are more closely associated with one economic function such as consumption, production or work (bringing them close to traditional cooperatives of consumers, workers or producers). Other RESCoops combine different economic usages (production and/or consumption and/or work).

Some RESCoops offer the opportunity to freely choose between different roles, others impose some restrictions. For example, some RESCoops membership presupposes to also become a consumer, each new member thus bringing in both capital and turnover increase. Other RESCoops offer the option to be only an investor without using the services as a producer or a consumer, which enables them to attract investors from outside the supplied area. Finally, some RESCoops offer the opportunity to be a consumer without investing in the RESCoop, which allows enlarging the base of the customers.

Because of the open and voluntary membership, RESCoops are also expected to engage into dialogue with local stakeholders. This often leads to a multi-stakeholder governance structure. While citizens are generally the primary category of stakeholders that are represented in the governance structures, other stakeholders often intervene such as municipalities, local non-profits and NGOs, other cooperatives or even private companies. For example, in the new Italian RESCoops, grid operators become members of the cooperatives, besides local citizens.

Some RESCoops also apply restrictions on the type of members, typically geographical restriction either to ensure the local anchorage of the RESCoop or for legal reasons¹¹. Other restrictions¹² can also be identified, for example:

- To only accept citizens as members¹³
- To put a minimum age to become a member.
- To only accept national or local companies.
- To limit the number of shares per member.
- To pay the membership fee.
- To only accept as partner companies those that follow social, ecological and ethical standards.

The cooperative principles also highlight democracy as the way to organize the decision-making processes, particularly in the general assembly¹⁴. The most common principle in this respect is “one

¹¹ Such is the case in Greece where in accordance with LAW 4513/2018 at least 50% plus one member must be associated with the region where the RESCoop is located.

¹² RESCoop Business Model, 2020 EU RESCoops (<https://tinyurl.com/mrjk8tpj>)

¹³ An interesting case is WEnCoop (Women Energy Cooperative) in Greece, in which the majority of the members are women

¹⁴ Guidance Notes to the Co-operative Principles, International Cooperative Alliance 2017, (<https://tinyurl.com/5eh6kvru>)

member, one vote”. Nevertheless, adaptations to this principle exist, for instance different types of shares, or additional votes for each given period of membership.

RESCoops that gather various types of members can apply different types of membership with different voting rights. This is for instance the case of new Italian RESCoops where citizens and grid operators, both cooperative members, do not have the same voting power.

The reverse side of the democratic coin is democratic entropy, which means a deterioration of the democratic functioning of the organization in terms of the representativeness or the participation of the members. For example, the Best Practice report¹⁵ highlights that a RESCoop with many different legal entities will be less transparent and less attractive to members who will have more difficulties in understanding their role and power in the structure.

Next to the general assembly, RESCoops function with a board of directors. The board is elected by the general assembly: it represents the cooperative members and participates in the management of the RESCoop – this is even more the case in RESCoops that do not function with paid workers. In larger RESCoops, the board of directors will assume a more strategic role, acting as the architect conceiving the strategy and monitoring its implementation.

In terms of workforce, most RESCoops function with a small number of employees or without employees at all.

RESCoops can also generally count on a large number of volunteers active in various types of activities, during the setting-up as well as during the development phases. Volunteers constitute the social capital of the RESCoops, by bridging major resources: skills, experiences, expertise and knowledge, networks, contacts, free time, creativity, etc. As stated in the Best Practice report, the time and resources brought by the members and volunteers to the RESCoops are most valuable assets even if they do not appear in the balance sheet. Besides their active working contribution, volunteers can bring connections with stakeholders and networks, and increase the democratic vitality by participating in the formal and informal governance structures.

Financing mechanisms

Energy cooperatives are a classic example of citizen-led initiatives in which end-users join to raise the funding for owning energy generation systems¹⁶. Various organizational forms and financing models may exist but all of them are based on voluntary and open membership rules, democratic control (typically based on the ‘one participant one vote’ rule) and the economic participation of members. Energy cooperatives are usually constituted as companies (for profit-making). In this case, they can be created as retail cooperatives by shareholders involved in the shared-financing of medium and large-size RES plants (communities of interest), being able to compete with other market players. They can also be local non-profit cooperatives, created to supply specific local regions (communities of place)

¹⁵ Best practice guide for RESCoops, 2020 (<https://tinyurl.com/yc3shcnt>)

¹⁶ Wierling A, Schwanitz VJ, Zeiß JP, Bout C, Candelise C, Gilcrease W, et al. Statistical evidence on the role of energy cooperatives for the energy transition in European countries. Sustainability 2018;10. <https://doi.org/10.3390/su10093339>

on the basis of self-consumption and sale of surpluses (financial outcomes are reinvested in the community¹⁷).

The sustainability of RESCoops is highly dependent on membership. They need to attract and engage new members and various stakeholders quite often in order to keep the community alive and ensure its long-term viability. Consequently, RESCoops try to incentivise financially¹⁸ their members or potentially new ones by:

- Defining billing conditions.
- Mobilising self-consumption through dynamic pricing schemes. Prices increase slowly in comparison with market prices and the proposed price is a fair price for the member.
- Exempting cooperative members of paying some use-of-system tariffs.
- Providing renewable energy to their members at cheaper or market equivalent prices.
- Charging tariffs above retail competitors and justifying the gap with the remuneration of suppliers.

On the other hand, financial support is important for the development of every RESCoop and in the most cases become crucial and the most important aspect. These mixes are diverse and of course highly linked to the activities. The different phases of the development of projects require different types of resources: the pre-planning and study phase require **venture capital** while the setting-up and building of production installations require **capital** and **loans**. The nature and scale of the project also influence the financing-mix: developing a biogas plant obviously requires much more starting capital (even with loans) than developing photovoltaic panels, biomass boilers or consultancy services towards RESCoops.

Financing a RESCoop depends mostly on the type of project planned: its size, the type of technology used and the type of activity (whether it produces, supplies or distributes energy or services). In order to decide on what type of investment scheme is best for the project, it is important to decide on several aspects of the project that will be the base of the business model of the project. Based on these general aspects that are governance, technology, size of the project, etc. you can study the different financing tools available to your project depending on the regulation in place in your country.

It is important to know that investment is largely regulated in certain country depending on the activity and the nature of the organisation (cooperative, association, etc.). Therefore, RESCoop will have to gather information on the legal framework of project financing in the specific country early in the setting up of your project planning.

Different types of financing stages can be defined for a project, depending on its primary activity. However, for the purpose of this deliverable, we will focus on the financing of RE production projects. The key phases for the development of a RESCoop project can be identified as follows¹⁹:

- The pre-planning phase.

¹⁷ Van Der Schoor T, Van Lente H, Scholtens B, Peine A. Challenging obduracy: how local communities transform the energy system. *Energy Res Soc Sci* 2016;13: 94–105. <https://doi.org/10.1016/j.erss.2015.12.009>.

¹⁸ Brown D, Hall S, Davis ME. Prosumers in the post subsidy era: an exploration of new prosumer business models in the UK. *Energy Pol* 2019;135:110984. <https://doi.org/10.1016/j.enpol.2019.110984>.

¹⁹ Financial Handbook for RESCoops, 2020 (<https://www.rescoop.eu/toolbox/financial-handbook-for-rescoops>)

- The development phase.
- The construction phase.
- The operating and maintenance phase.

Table 1. Financing stages of RESCoop projects

Phase	Description	Type of Financing	Challenges & Risks
Pre-planning	<ul style="list-style-type: none"> • Project planning • Identification of site/type of RES • Feasibility Study • Draft Business Plan • Legal agreements 	<ul style="list-style-type: none"> • Grants • Soft loans • Self financing • Seed capital 	<ul style="list-style-type: none"> • First phase of the project, most risky part of the project to fund, investors are not often willing to risk investing in the early stages of a project • Financial guarantees needed by financial institutions in case the energy production does not repay the interest costs of the loan • Patrimonial guarantees requested by banks
Development	<ul style="list-style-type: none"> • Business plan • Permitting procedure • Grid access permit • Power Purchase Agreements • Legal agreements • Legal & Financial Due Diligence • Financial closing 	<ul style="list-style-type: none"> • Equity investment • Grants • Loans 	<p>Delays in obtaining licences and permits</p>
Construction	<ul style="list-style-type: none"> • Construction contracts • Connection to the grid 	<ul style="list-style-type: none"> • Equity investment • Grants • Loans 	<ul style="list-style-type: none"> • Construction risks: financial operators are willing to take on construction risk often subject to their appointment of an independent consultant to undertake due diligence on the contracts, business models, etc. (has to be taken in charge by the RESCoop.)
Operation & Maintenance	<ul style="list-style-type: none"> • Production • Operation & Maintenance Contracts 	<ul style="list-style-type: none"> • Revenues from energy production • Public support schemes for RES 	<ul style="list-style-type: none"> • Revenues • Regulatory risks on public support schemes • Financial viability of the installer and the manufacturer and credibility of their warranty

The most practical financial resources^{20,21} for RESCoops are:

- Self-financing: it concerns the shares acquired by members and/or the loans from members
- Bank loans from traditional and/or cooperative and ethical banks
- Subsidies in capital and/or in investment from public funds
- Capital and/or investment support from private funds
- Venture capital from RESCoops developers

Given the high costs to develop the activities, RESCoops generally combine in innovative ways different financial contributions from the citizens, public entities and private organizations. Some other financial resources have also been identified, such as crowdfunding, grants, members' donations, revolving fund, etc.

Finally, as organizations inspired by cooperative principles, the members decide themselves of the use and the allocation rules for profits. Most of the RESCoops distribute a dividend to their members some of them also remunerate the members through other ways, for example by selling them the energy at favourable prices (with a maximum amount of kWh/year).

2.2 Analysis of RESCoops Business Models

The European Union's (EU) long-term climate-neutrality targets require that by 2050 at least 75%²² of the total energy demand comes from renewable sources. By that date, almost half of all European households must be involved in renewable energy generation, 37%²³ of which should be engaged in collective projects. To achieve these ambitious targets, a structural transformation of the energy sector is required, moving towards decentralized renewable-based systems in which citizens are directly involved in energy consumption, generation, trading and supply activities²⁴. In this setting, Energy Communities (RESCoops) are gaining increasing relevance, being perceived as cornerstones for a successful energy transition²⁵. Energy communities have the potential to change the energy landscape by empowering consumers, contributing to energy and climate goals regarding demand satisfied by renewable sources and emissions decrease. Local communities can also pursue common goals²⁶ such as, energy costs reduction and energy self-sufficiency, playing a critical role in the local economic

²⁰ RESCoop Business Model, 2020 EU RESCoops (<https://tinyurl.com/mrjk8tpr>)

²¹ Handbook on Investment schemes for REScoop projects, 2014, RECoops 20-20-20, <https://tinyurl.com/mr2wfsbf>

²² The European Commission. A Clean Planet for all – a European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy. EC; 2018. Retrieved from: <https://tinyurl.com/5axx3uvu>

²³ REScoop EU. The new energy market design: how the EU can support energy communities and citizens to participate in the energy transition. 2018. <https://tinyurl.com/2p9h8vkn>

²⁴ Rae C, Bradley F. Energy autonomy in sustainable communities – a review of key issues. *Renew Sustain Energy Rev* 2012;16:6497–506. <https://doi.org/10.1016/j.rser.2012.08.002>

²⁵ Lowitzsch J, Hoicka CE, van Tulder FJ. Renewable energy communities under the 2019 European Clean Energy Package – governance model for the energy clusters of the future? *Renew Sustain Energy Rev* 2020;122:109489. <https://doi.org/10.1016/j.rser.2019.109489>

²⁶ Van Der Schoor T, Scholtens B. Power to the people: local community initiatives and the transition to sustainable energy. *Renew Sustain Energy Rev* 2015;43: 666–75. <https://doi.org/10.1016/j.rser.2014.10.089>

growth and job creation, boosting smart grid infrastructures and providing valuable flexibility services to be traded in emerging markets, thus speeding up the transition to a low-carbon economy²⁷.

European energy policies are moving away from incentivized programs, aiming to untap private funding without which the energy system transition goals cannot be achieved. To this end, energy communities and collective self-consumption initiatives have been placed to the centre of the European energy policy by the recast of the RED II²⁸ (2018/2001/EU) as well as other relevant EU policies (COP26). Member-States are now faced with the task of transposing such directives into national laws, shaping them according to national realities and ensuring that the necessary conditions for the development of energy communities are met by mitigating existing regulatory, technical and financial barriers. Therefore, the enabling framework fostered by both directives is expected to boost innovative **business models** and attract private and public investment, allowing energy communities to become increasingly commercial, to diversify their revenue streams by proposing novel energy services in addition to local energy generation, while intermediating entities, alliances, and collaborative relationships among initiatives are promoted²⁹.

Looking deeper in the literature around RESCoops and community power organizations, it rapidly appears that RESCoops are diverse in terms of the ownership and governance structure, organizational structure, scale of activities, type of activities, energy sources used, financing mix, etc. As we will see, to be a cooperative or a group of citizens on one hand and to be active in the renewable energy field on the other hand have already some implications on the business model. The following sections review these implications and the diversity of RESCoop models while linking the various dimensions of the business models to each other, i.e., the mission and objectives, the strategy, the organizational and governance structures, the activities, the financing mix and the partnerships.

The RESCoops are groups of citizens inspired by the cooperative principles and active in the field of renewable energy. Briefly, combining these two specific features already has implications on the business model. The basic principle of the model is that; first energy communities promote the establishment of partnerships with entities from other sectors that bring technical and business development expertise, maintaining a strong focus on private and local investment. In turn, community energy projects are dependent on financial and technical volunteering. Second, energy communities encourage the participation of users owning smart and RES technologies and aspire to take advantage of these techs to optimize their choices to the detriment of participants merely motivated by environmental, social and economic issues. Third, energy communities go beyond community energy goals by also promoting economic growth, job creation and the development of smart and renewable technologies.

The RESCoops operate in accordance with business cooperative principles^{30,31}

²⁷ Koirala BP, Koliou E, Friegle J, Hakvoort RA, Herder PM. Energetic communities for community energy: a review of key issues and trends shaping integrated community energy systems. *Renew Sustain Energy Rev* 2016;56:722–44. <https://doi.org/10.1016/j.rser.2015.11.080>.

²⁸ European Commission. Directive on the promotion of the use of energy from renewable sources (recast). EC; 2018. Retrieved from: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2001&from=en>.

²⁹ Mirzania P, Ford A, Andrews D, Ofori G, Maidment G. The impact of policy changes: the opportunities of Community Renewable Energy projects in the UK and the barriers they face. *Energy Pol* 2019;129:1282–96. <https://doi.org/10.1016/j.enpol.2019.02.066>.

³⁰ RESCoop Business Model, 2020 EU RESCoops (<https://tinyurl.com/mrjk8tpr>)

³¹ Guidance Notes to the Co-operative Principles, International Cooperative Alliance 2017, (<https://tinyurl.com/5eh6kvru>)

- The voluntary and open membership invites to gather multiple actors around the cooperative project, which can lead to multi-stakeholder governance structures and will allow gathering various skills and experiences enhancing the social capital of the RESCoop.
- The democratic member control implies implementing democratic decision-making procedures (often on the basis ‘one person, one vote’) and recognizing the equality and potential contribution of each to the project.
- The members’ economic participation implies a particular financial relationship between the RESCoop and its member and has an influence on the financing mix.
- The autonomy and independence do not prevent partnerships but sanction the need to remain autonomous, particularly from political authorities.
- The focus on education, training and information implies the setting-up of transparent procedures and the importance of educating and accompanying the members, but also the community, on the issues relevant to RESCoops.
- The cooperation among cooperatives fosters partnerships with other actors sharing the same philosophy.
- The concern for community implies a mission that goes beyond the sole production and distribution of energy to turn its focus to benefits to the community.

The RESCoops are active in the renewable energy field³²:

- RESCoops participate in the movement of energy transition from fossil based towards renewable energy. In line with this transition approach, RESCoops promote bottom-up approaches and the involvement of citizens. They also promote another use of energy and energy savings, which implies that the organizational model is not based on selling as much as possible to their customers.
- RESCoops promote an energy system based on local actors, if possible, producing locally for local customers.
- Developing renewable energy projects, particularly for medium-sized or big projects, requires setting up partnerships with various actors (private companies, public entities, local authorities, social enterprises, etc.) regarding the financing-mix (to collect the required money), the production (to have access to installation sites and develop projects such as wind parks), and the supply or even distribution (to have access to the grid).

2.3 Business Model Profiles

Taking into account the literature classification of RESCoops models³³ as well as BECoop D1.1 (State-of-play of community bioenergy across Europe: market size, applications and best practices) and other

³² Ibid

³³ RESCoop Business Model, 2020 EU RESCoops (<https://tinyurl.com/mrik8tor>)

project activities³⁴ we concluded on **4 Business Models profiles**. The methodology chosen to identify and create the profiles for the business models behind successful community energy cases as these were identified by Task 1.2³⁵ was the **Sustainable Business Model Canvas** methodology. The Sustainable Business Model Canvas was applied to link them with already defined governance and financial models and simplify the selection of the appropriate business and financial support services. This typology was customized to focus only on the models that were assessed to suit better bioenergy community needs and have replication potential from other RE communities to the bioenergy communities. An outline of the analysis of the Sustainable BMC methodology adjusted for RESCoops can be seen below:

- Key partners involve the most leading members of the community profile, either person or entities (NGOs, associations, local or regional government etc)
- Key activities mainly concerning the ways that the Energy Community utilises renewable energy to the local markets and its stakeholders (electricity generation, heating etc)
- Key resources are dealing with the renewable energy sources and their core technologies that are usually implemented within the community projects (e.g. electricity generation connected to the grid, electricity generation for self-consumption)
- Value propositions have to do with the possible utilisation pathways of the produced renewable energy or the community activities.
- Customer segments include the potential stakeholders as beneficiaries from the community actions and projects.
- Cost structure includes the possible available financial and funding resources at which the community operates. It also comprises the most relevant Capital and Operational Expenditures within the community activities.
- Revenue streams refers to all the possible pathways that can bring value to the community within its activities and projects.
- Environmental benefits as an outcome of the community actions respecting the local/national ecosystems.
- Socio-economic benefits to the local and national societies and other communities.

Following this way of assessment, the RESCoop cases selected were analysed and eventually led to their classification (**See Annex II** for the Classification Matrix of RESCoop successful cases). Classification is critical to the understanding of objective reality and into bringing together entities in terms of their shared similarities despite not being identical³⁶. The Matrix presents and clarifies in a simple and concise manner the complexities of the various cases studied and analysed.

³⁴ During the first year of the BECoop project significant insights, perspectives and findings were highlighted by consultation events in the pilot regions and the studies conducted. Stakeholders provided both their concerns and preferences highlighting success stories and barriers for the development of bioenergy communities. For more info visit: <https://www.becoop-project.eu/resources/reports/>

³⁵ BECoop Deliverable 1.1 *State-of-play of community bioenergy across Europe: market size, applications and best practices*

³⁶ Lambert, Susan C. 2015. 'The importance of classification to business model research', *Journal of Business Models*, Vol. 3, No. 1, pp. 49-61

In addition, it is a guide that will facilitate in the future along with the BECoop Assessment tool of bioenergy communities to correlate their scope of activities with the appropriate Business and Governance models that suit their assets and their goals.

Business Model 1: Local integrated group of citizens

This model is typically born from groups of citizens in a bottom-up approach with the motivation to fulfil a need they have identified. It is the most common and by all means it is the original bottom-up scheme of an RESCoop. The RESCoop keeps a small size and develops small local projects, such as solar panels, watermill or biomass boilers. They have limited capital and the financial resources invested mainly come from the members (shares, loans). Typically, a group of citizens that decides to renovate a watermill in their village to produce electricity enters in this category. This model may also include integrated concepts in terms of services: production, supply, distribution when possible, and other services which results in a quite long organizational trajectory. The objective is to function independently on the different dimension of energy provision, mainly on volunteering without many employees. [Urberoa](#) in Spain and [Ecopower](#) in Belgium are good examples for this model³⁷ (See Figure 1).

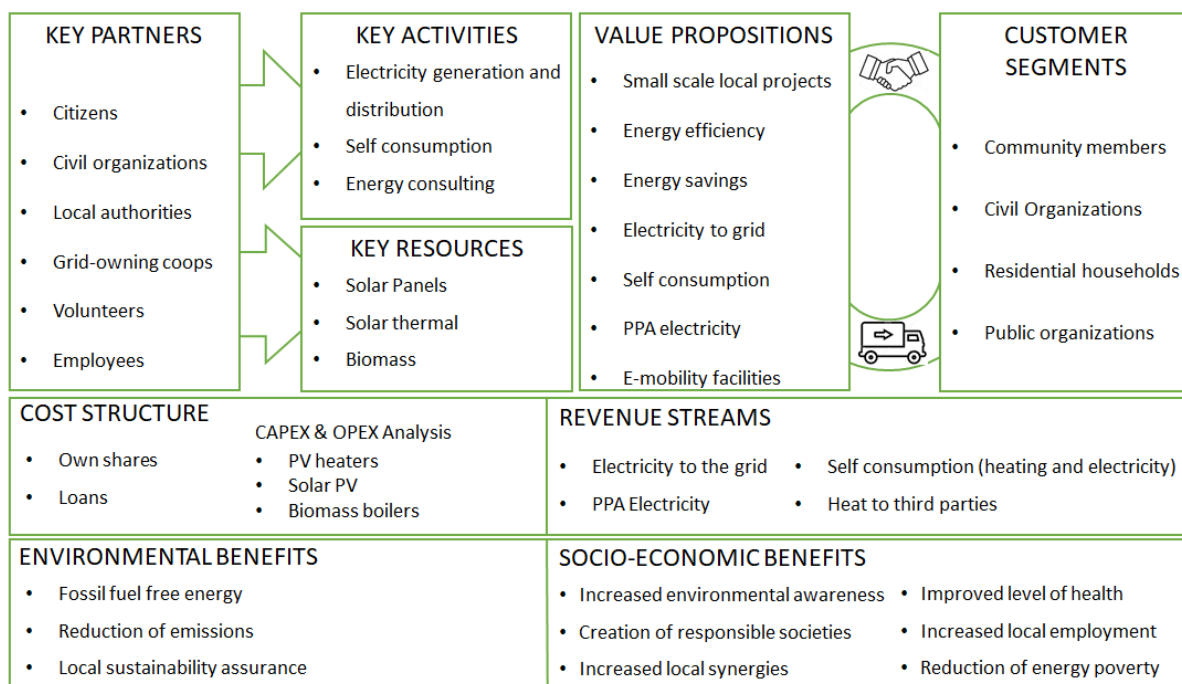


Figure 1. Local integrated group of citizens RESCoop model

³⁷ D1.1 State-of-play of community bioenergy across Europe: market size, applications and best practices, June, 2021

Business Model 2: Regional-national RESCoop³⁸

The model is born either from a group of citizens that has scaled up or from an external initiative that gathered the relevant actors together. The motivation is either to meet specific needs or to take up opportunities. The objective is to develop a mix of activities and/or to be active on various energy sources. They generally develop different projects at a regional or national level with different production sites. They function with volunteers as well as employees for the operational issues. The financial sources are more diversified, and they develop partner relationships on different matters. Typically, a RESCoop that develops photovoltaic, wind and biomass projects at the level of a region or country enters in this category. Most of the bioenergy RESCoops have been identified under this Business Model. BECoop’s consortium partners such as Goener in Spain and ESEK in Greece are typical examples³⁹ (See Figure 2).

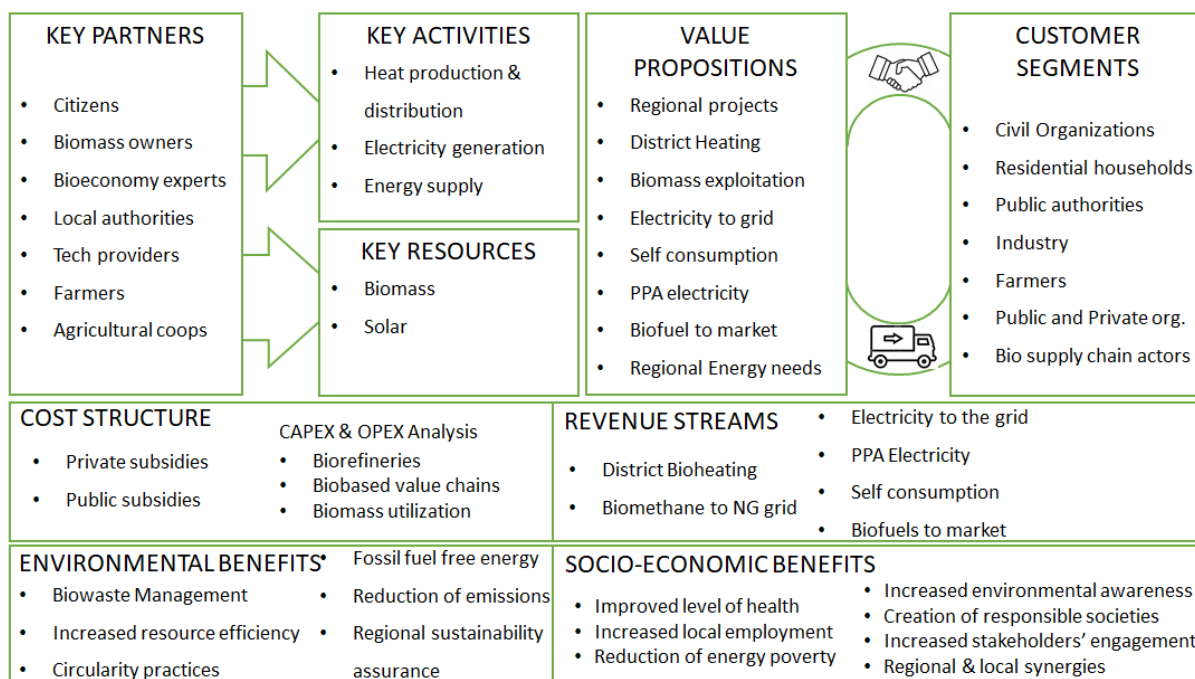


Figure 2. Regional & National RESCoop Model

³⁸ RESCoop Business Model, 2020 EU RESCoops (<https://www.rescoop.eu/uploads/rescoop/downloads/REScoop-Business-Models.pdf>)

³⁹ D1.1 State-of-play of community bioenergy across Europe: market size, applications and best practices, June, 2021

Business Model 3: Network of RESCoops

The third model is a network or a group of RESCoops. A RESCoop developer or incubator puts venture capital in a new project and develops autonomous RESCoops at the local level on the same business model. The scaling up strategy relies on the replication of a proven and successful organizational scheme in various localities, which permits scales of economies, time and energy in developing the projects. This model mainly collects other small RESCoops in order to develop large scale solar and wind projects, biomass and hydro are also considered but are not so relevant. They also develop the same types of partnerships, both at the local and meso-levels. A typical example of such a business model is implemented by [SEV](#) and [Energy4All](#)⁴⁰ (See Figure 3).

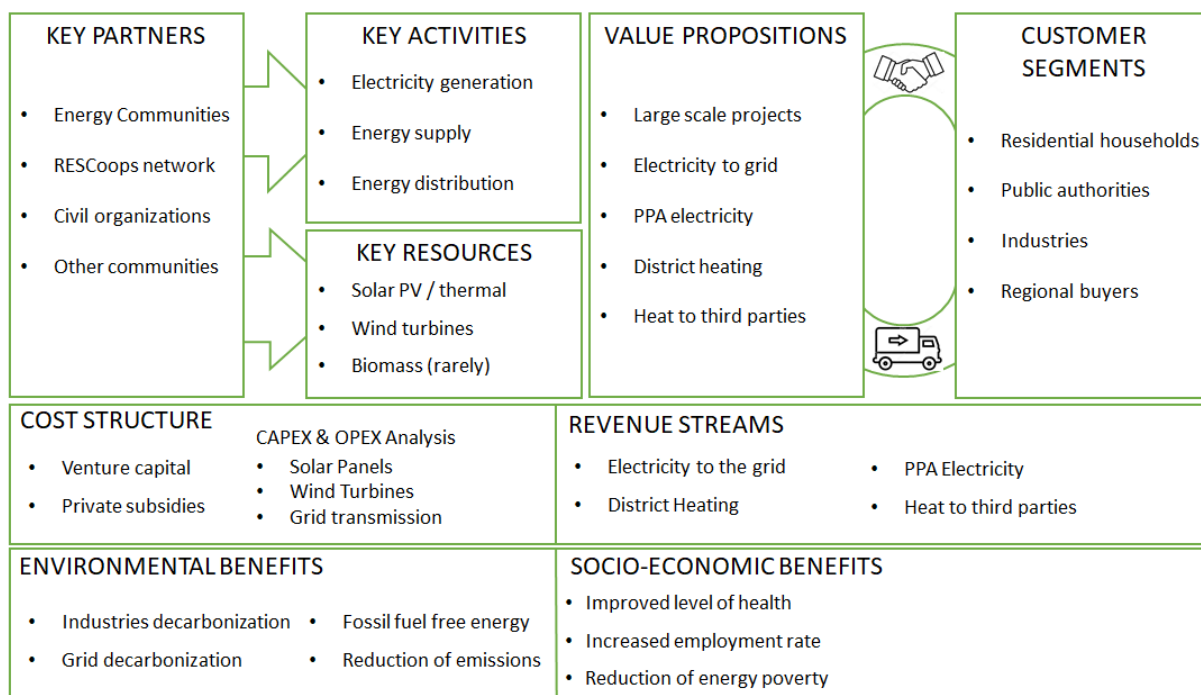


Figure 3. Network of RESCoops Model

⁴⁰ D1.1 State-of-play of community bioenergy across Europe: market size, applications and best practices, June, 2021

Business Model 4: Multi-stakeholder governance model

This one is called a multi-stakeholder governance model. The RESCoop gathers all the stakeholders who have a role to play in the provision and consumption of renewable energy (consumers, producers, workers, communities, partners) through a complex governance structure. The RESCoop governance model can be organized at the local level (with local multiple stakeholders) or at the level of a territory with a pyramidal structure from the local to the territory level. Indeed, this model encapsulates the development of synergies between public authorities, social enterprises and local businesses. Such an approach has elements of public – private partnerships along with benefits but also has the pitfalls of governance complexity and is highly dependent on regulatory clarity and efficiency. It is quite challenging and ambitious model but holds great potential for scaling up, while it ensures economies of scale, more effective sharing of best practices and knowhow. Notwithstanding that this is a model that requires a high level of sophistication and presupposes to emerge out of the development of synergies among local and regional communities and entities. This business model is for example implemented by [Enercoop](#)⁴¹ (See Figure 4).

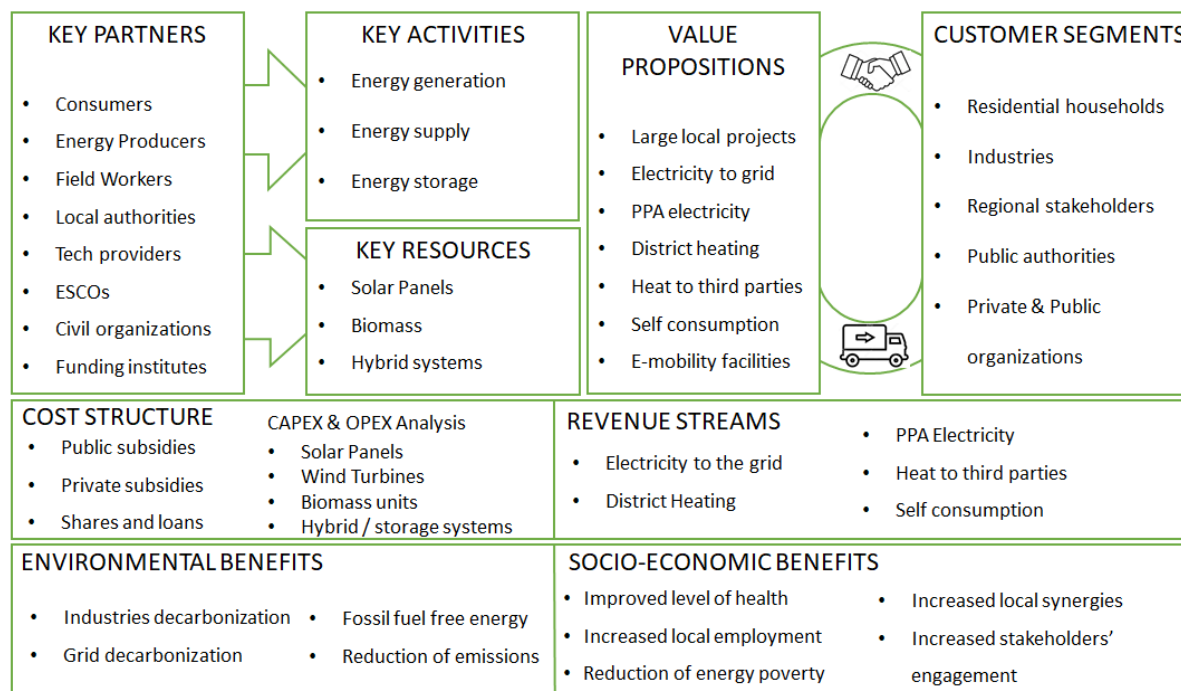


Figure 4. Multi stakeholder Governance Model

⁴¹ D1.1 State-of-play of community bioenergy across Europe: market size, applications and best practices, June, 2021

These 4 business models have been identified from the literature and BECoop core dimensions, as presented above. Although this list is not extensive due to the high number of possible hybrid models, it gives an overview of the main RESCoop Models, considering the different objectives, ownership rules, actors currently considered and RES projects.

In terms of lifecycle, it appears that the first two business models, namely the **Local integrated group of citizens** and **Regional-national RESCoop models**, can form an **organizational path for scaling up the RESCoop**. The organizational path towards a larger scale and a broader portfolio of activities (including renewable energy sources) goes in parallel with a complexification of the activities but also with the realignment of their business model and structure.

The Business Model profiles are more a theoretical exercise, which conceptualise a major aspect of the energy transition, i.e. the successful business models and the ones with a high replication potential in the bioenergy community to date. As the energy market matures and the policy, legislative and regulatory framework is almost constantly revised, reformed and adjusted to shifting situations, technological disruptions occur, and geopolitical events come in to play to upset the energy sector forcing the RESCoops that have adopted these models, or any indeed other model, to either promptly evolve them in a responsive, effective and targeted manner to face the new challenges and address the changing needs or let them become obsolete and follow them into out of business oblivion.

Some RESCoops intentionally begin with small projects relying on specific activity that is based on local needs or on spatial on the roof of a school or biomass boilers in public buildings for example, so as to start and accumulate money to add more activities, launch larger projects afterwards or to diversify the types of renewable energy sources. Such an approach appears to be both sensible and successful if they apply business tools that can reveal their realistic options.

Resulting from these observations, the financing-mix appears linked to the organizational path, with the RESCoops first counting on self-financing for small projects before being able to ask loans and other forms of financial resources to private and/or public partners. Some contextual variables⁴² that will influence the business models and the development of the RESCoops are given below:

- A positive and stable RES policy context has been a large driver for RESCoop development (see Denmark or Germany). On the contrary, a centralized energy policy is less favourable for RESCoop development (Spain, France, etc.).
- Energy policy that allows RESCoops accessing to the grid and distribute energy directly to the users is a crucial step for fostering RESCoop development.
- A political recognition of RESCoops as relevant and useful institutions is a positive element. Linked to that point, the cooperation among various political levels (local, national, European) and citizen RES projects is another success factor.
- Cultural and normative frameworks influence the success of citizen-based/participatory organizational models: the way in which the project is framed to attract support from citizens and other stakeholders varies a lot according to the countries (for instance the use of the word “cooperative”, the connection with energy transition, the funding scheme, the partnerships, etc.).

⁴² RESCoop Business Model, 2020 EU RESCoops (<https://www.rescoop.eu/uploads/rescoop/downloads/REScoop-Business-Models.pdf>)

Table 2. Classification Matrix of Indicative RESCoops per Business Model

Name of Organization	Year founded	Legal Form	Renewable Energy Sources						Focus Areas			Final products			Main Technologies and Systems			Main Financial resources			Governance Model	Country	Area		Projects		
			Solar	Wind	Biomass	Hydro	Wave	Geo																	Existing	Ongoing	Planned
UR BEROA	2009	Cooperative			✓				Heat			Heat (district heating)			Biomass Combustion			Shares			Local int. group of citizens	Spain	Urban	San Sebastián	600 kWt		
Ecopower	1991	Cooperative	✓	✓	✓	✓			Energy Supply	Electricity generation	Energy Distribution	Electricity (grid)			Biomass densification	Onshore Wind	Solar PV	Loans	Shares		Local int. group of citizens	Belgium	Urban	Flanders	Many solar and wind installations	Pellets & Briquette Plant	
GOIENER	2012	Cooperative	✓			✓			Electricity generation	Energy Supply	Energy Savings	Electricity (self-consumption)	Electricity (PPA)	Electricity (grid)	Solar PV	Hydro turbine		Loans	Private subsidies in investment	Shares	Regional - National RESCoop	Spain	Peri-urban	Ordizia	700 kWp		
EZEK - Karditsa Energy Community	2010	Cooperative	✓		✓				Heat	Self consumption & storage	Electricity generation	Fuel to market	Heat (self-consumption)		Biomass densification	Biomass Combustion	Solar PV	Private subsidies in investment	Private subsidies in capital	Shares	Regional - National RESCoop	GREECE	Rural	Karditsa	Solid biofuel plant Capacity: 1200 tn pellet per year		2 MW solar
Energy4All	2002	Cooperative	✓	✓	✓	✓			Electricity generation	Energy Distribution	Energy Supply	Electricity (grid)	Electricity (self-consumption)		Solar PV	Onshore Wind	Hydro turbine	Private subsidies in capital	Private subsidies in investment	Public subsidies in capital	Network of RESCoops	UK	Rural	various	more than 30 projects		
SEV	1998	Association	✓		✓	✓			Electricity generation	Energy Distribution	Heat	Electricity (self-consumption)	Heat (self-consumption)	Electricity (PPA)	Solar PV	Biomass Combustion	Hydro turbine	Private subsidies in capital	Private subsidies in investment	Public subsidies in capital	Network of RESCoops	Italy	Peri-urban	South Tyrol	120 Hydro, 45 heating, 149 PV		
Enercoop	2005	Cooperative	✓	✓	✓				Electricity generation	Energy Distribution	Self consumption & storage	Electricity (self-consumption)	Electricity (PPA)	Heat (self-consumption)	Solar PV	Onshore Wind	Biogas / Biomethane	Public subsidies in capital	Private subsidies in investment	Loans	Multi-stakeholder governance model	France	Peri-urban	whole country	8 MW Wind & 9 MW Solar	12 MW Wind	

* For the complete Classification Matrix with all RESCoop cases reviewed see ANNEX II

3 Business Support Services

The updates of each service are mentioned at the beginning of each description.

Definition of Business Support Services

After careful consideration of the above business, financial and governance models from successful RESCoops the catalogue of business options for potential bioenergy communities was developed. Build upon real insights from our mapping exercise, and the lighthouse cases of D1.1 and the successful RESCoop cases (Annex II) we were able to define the critical business and finance support services that are presented in section 3 and 4 respectively. The scope of our focus was to all active RESCoops (solar, wind, geothermal, storage, mobility etc.) to assess the transferability potential of their success factors to bioenergy as well in terms of Business Models and support services.

The development of the business catalogues enables us to define the required business support services that are necessary for the uptake of the listed models by bioenergy RESCoops. To this end, we foresee the below business services:

- Business modelling
- Business planning
- Market Analysis
- Mentoring

Overall, the below descriptions approach a generic scope and can be used by any RESCoop or initiative that is dealing with energy cooperatives in order to set up and/or increase their business activity. The deployment of the services allowed the validation of their relevance and their adjustment to the needs of bioenergy communities as these were identified in the four BECoop pilot cases.

Services recipients

The BECoop Business Support services are potentially beneficial for a series of actors already in the Bioenergy Community value chain as well as other relevant stakeholders either as members of Energy Communities or not, such as:

- Citizens / consumers
- Private companies (energy providers, ESCOs, grid operators, etc.)
- Social enterprises (other cooperatives and non-profits, etc.)
- Public entities (municipalities, regional authorities, RE authorities and associations etc.)
- Workers and employees
- Financial institutions, banks and investors
- Policy Makers at the local, national and international levels

Specifically, within the context of BECoop, the services have been provided to the pilot regions cases as these have been defined by the pilot partners. As it was envisaged originally four scenarios were tested:

- Expansion of activities to bioenergy heating for an existing and established RESCoop active already in other RES. This was the Spanish case in which GOINER aimed to expand its activities through promoting a RESCoop establishment that locally covers the entire value chain for bioenergy heating in the region of Aberasturi.
- Expand the biomass supply chain - Extend the activities to bioenergy production for an existing bioenergy community that focuses on the production of pellets. This was the Greek case in which ESEK aimed to expand its activities through exploitation of new raw material: (a) municipal prunings, (b) forest residues and (c) coffee residues - for reaching higher energy independence in the wider region.
- Development of a new RESCoop on bioenergy heating with the initiative of citizens and local government. This was the Polish case in which OBS leads the development plans of a new RESCoop on bioenergy heating in a region where community energy and RE heating currently has very low penetration.
- Development of a new RESCoop community in a rural area in cooperation with existing bioenergy community through a shared production and consumption model. This was the Italian case in which FIPER explored the potential Combined Heat and Power (CPH) District Heating system establishment, involving municipalities, Local forestry companies, University, Agricultural cooperative (Melavi)

3.1 Business modelling

In this section after the deployment activities of our business support in the BECoop pilot cases we came up with the design of a new canvas model. This model combines the existing knowledge of our above business models and illustrates the 3-dimensional aspects across environmental, social and economic benefits. Therefore, in our new Canvas model we have integrated the main findings of our business support and overall operated as a summary of the business case for each BECoop pilot. The prototype Canvas model can be seen in the figure below:

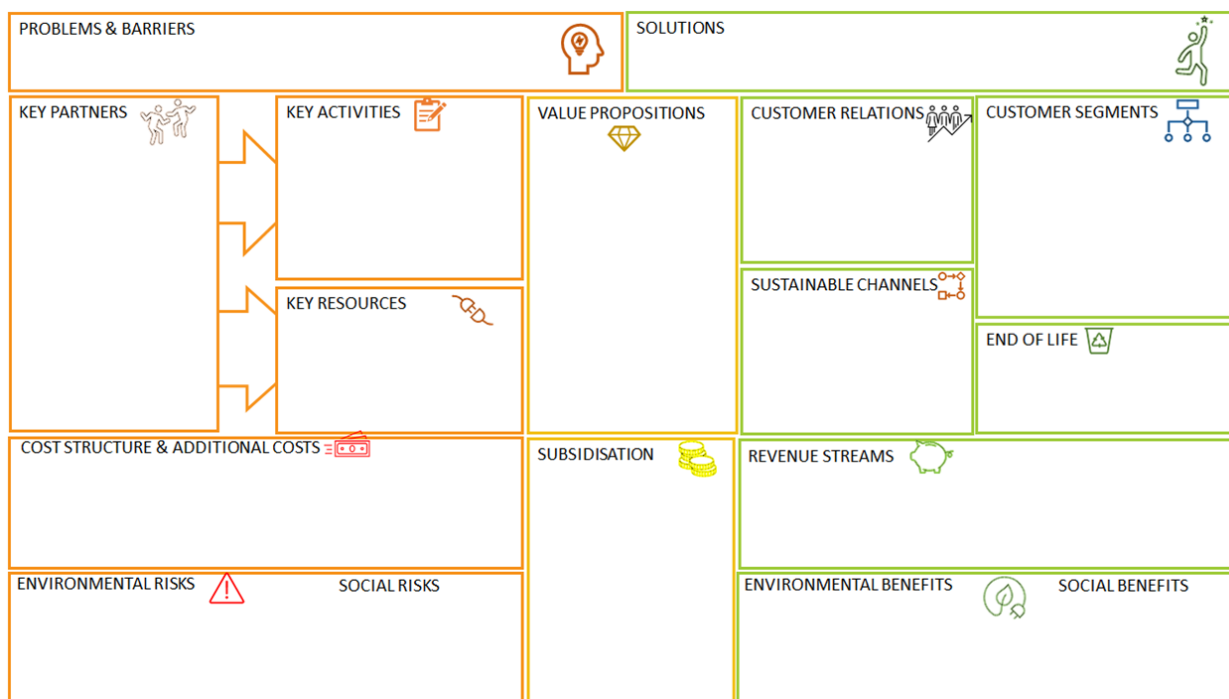


Figure 5. BECoop Sustainable Business Model Canvas

The results of our Canvas for the 4 BECoop RESCoop cases can be seen in the D4.3 and an outline of the analysis for the Sustainable BMC methodology adjusted for RESCoops can be seen below:

- **Key partners** involve the most leading members of the community profile, either person or entities (NGOs, associations, local or regional government etc)
- **Key activities** mainly concerning the ways that the Energy Community utilises renewable energy to the local markets and its stakeholders (electricity generation, heating etc)
- **Key resources** are dealing with the renewable energy sources and their core technologies that are usually implemented within the community projects (e.g. electricity generation connected to the grid, electricity generation for self-consumption)
- **Value propositions** have to do with the possible utilisation pathways of the produced renewable energy or the community activities. (What is the KEY product)
- **Customer segments** include the potential stakeholders as beneficiaries from the community actions and projects.
- **Cost structure** comprises the most relevant Capital and Operational Expenditures within the community activities and running of the business.
- **Subsidisation** includes the possible available financial and funding resources at which the community operates.
- **Revenue streams** refers to all the possible pathways that can bring value to the community within its activities and projects.

- **Environmental benefits** as an outcome of the community actions respecting the local/national ecosystems.
- **Socio-economic benefits** to the local and national societies and other communities

3.1.1 Service description

A business model describes the rationale of how an organization creates, delivers, and captures value, in economic, social, cultural, environmental and other contexts. The development of a business model forms a part of innovation, business strategy and sustainability, especially when dealing with Energy Communities.

Sustainable business models can de-risk and stimulate investments in Renewable Energy. Along these lines, this service will support Energy Communities in designing or improving the business models of their renewable - bioenergy solutions with easy-to-use and effective tools employed in practice to facilitate sustainability-oriented business model innovation from an economic, environmental and social perspective (Business Model Canvas, Sustainable Business Model Canvas, triple layered Business Model Canvas).

3.1.2 Service Objectives & Benefits

It identifies the potential profitability pathways of organisations within possible products or services, its identified target market and any anticipated expenses. Business models are important for both new and established Energy Communities in order to attract investments, recruit talent, and motivate management and staff as well as to increase their business performance.

The Business model service will improve RESCoops through direct engagement with stakeholders. It also allows to confirm the effectiveness of the solutions proposed with the business model with potential customers and to assess the value the beneficiaries themselves attribute to it. It also investigates how to finalize the marketing strategy and test the business model with industry experts.

Some other key advantages of the Business modelling are to:

- Align better the operations with the community strategy.
- Improve process communication within all operations of an Energy Community.
- Increase control and consistency among all the operations and members.
- Improve operational efficiencies and increase business performance with a simple model.
- Help the Energy Communities to become different and gain competitive advantage.
- Attract more investments and increased profitability by considering environmental and social aspects.

3.1.3 Service process

For the development of the business model, we need to study and identify the Energy Community needs and challenges in order to make the product or service competitive to the market and increase the effectiveness of the organisation. Then develop its key figures, deliver and monitor the successful implementation of the service. In order to achieve it we need to conduct:

- Status quo analysis from the particular questionnaire developed under T4.3 (Annex V)
- A series of topics-related meetings with the organisations.
- Design of the Sustainable BMC and preparation the respective report
- Evaluation of the process and definition of next steps in cooperation with the Energy Community.

3.2 Business planning

In comparison with the initial version of this deliverable, D2.9 “BECoop catalogues for the provision of business and financial support services – first version”, we didn’t make major changes, we just slightly modified the table of contents of the business plan in order to suit it better with the needs of our RESCoops. The updated table can be seen below in the service process. The results for the four business plans on the BECoop pilot cases can be found in the Annexes of D4.3.

3.2.1 Service description

A business plan is a formal written document containing the goals of an organization, the methods for attaining those goals, and the timeframe for the achievement of the goals. It is essential for the Energy Communities and constitutes a wider and more complete version of the business model.

Business Planning is an organizational process of defining the plan, or direction, and making decisions on allocating its resources to pursue the RESCoop’s strategy. It also analyses key elements into supporting strategic decisions and empower the entrepreneurial of the whole project and also support the design of sustainable and commercially viable business models.

Business planning for potential implementation of Renewable Energy innovations within Energy Communities will play a vital role in the global energy transition. The steps follow the traditional cases of business planning tailored to the needs of the community and the essence of the technology – solution offered.

3.2.2 Service Objectives & Benefits

A Business Plan should be a roadmap to success, providing clarity on all aspects of an Energy Community, from marketing and finance, through to operations, products, services and people. The

purpose is to help Energy Communities to articulate a strategy for starting or changing their business and it also defines how they will achieve their most important objectives.

For existing Energy Communities, a business plan should be updated annually as a way to guide growth and navigate expansion into new markets. The plan should also include explicit objectives for attracting new members, validate their business models, including new products and services that the organisation can offer and how you promote and incorporate them with finance and business operations. It also provides insight on steps to be taken, resources required for achieving your business goals and a timeline of anticipated results.

The benefits for an Energy Community having a Business Plan are:

1. Increased Clarity

A business plan can bring clarity to the decision-making process regarding key aspects of the Renewable Energy projects such as capital investments, leases, resourcing, etc. A good Business Plan helps Energy Communities to identify business critical priorities and milestones to focus on.

2. Creation of a Marketing Roadmap

Marketing is an important aspect of a business plan. It helps Energy Communities to define their target market(s), target customers and how to promote and place their product / service to these markets.

3. Support for Funding

A business plan contains important information regarding profitability and revenues generation which helps Energy Communities to seek and become attractive to available and suitable funding and financing options.

4. Helps to Secure Talent

A successful Energy Community needs talented members and partners. A Business Plan helps them to attract new representatives and at the same time for new potential members is clearer the vision, the objectives, their role and the operations of the organisation.

5. Provides Structure

A business plan provides a structure and defines the business management objectives. It becomes a reference tool to keep the business on track with sales targets and operational milestones. When used properly and consulted regularly, it can help measure and manage your priority areas of focus.

3.2.3 Service process

For the successful delivery of our service, we are proceeding with the following actions:

- Meeting with the Energy Community to get insights about their business idea and define the relevant stakeholders and the clients' needs.
- Research and assessment to determine opportunities for new structures, initiatives and marketing.

- Joint Business planning, incl. clarifications on the implementation steps, potential funding opportunities and technical challenges to be surpassed
- Visualize and present possibilities and roadmap on a business-specific pipeline.

Therefore, our service consists of the below components which have been updated as mentioned before:

1. Executive summary
2. Concept
 - a. Problem statement
 - b. BECoop RESCoop solutions
3. BECoop RESCoop background and vision
 - a. Characteristics & Specifications (legal status, products and services, long term aim of the business, objectives)
 - b. Description of potential applications and projects (currently that are running as presented by the pilots along with their future plans)
 - c. Short- medium-long term goals of the RESCoop
 - d. SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of the RESCoop
4. Market Analysis
 - a. Total market and market share
 - b. Market segments
 - c. Target market & customer profile
5. Competition Analysis
 - a. Identify & analyse potential competitors
6. Business model
 - a. Design & Develop a Sustainable Business Model Canvas
7. Schedule
 - a. Critical project milestones
 - b. High risk factors & mitigation strategies
8. Financial plan
 - a. Financial assumptions & analysis
 - b. Funding options & requirements
 - c. Cumulative Cash Flows
 - d. Payback strategy and investment evaluation

3.3 Market Analysis

In comparison with the initial version of this deliverable, D2.9 “BECoop catalogues for the provision of business and financial support services – first version” the current service has been integrated in the business plan as a separate section. However, its description remains the same.

Market analysis is an organized effort to gather information about target markets and customers. It is a very important component of an Energy Community strategy and a major factor in maintaining

competitiveness. The target analysis is focused on RES techs - systems along with the conventional - fossil based solutions vs renewables and especially in the bioenergy field.

3.3.1 Service description

This service aims to provide valuable knowledge for the planning and implementation of new technologies such as biomass systems and others relevant with RESCoops. The investigation is tailored to the needs of the RESCoop and is conducted as consultation process between the responsible experts and the RESCoop. The consultation process will be defined in detail depending on the beneficiary demands and needs.

For the RESCoops is very important to identify their market size, customer segments and their respective needs and characteristics. Information derived from the needs assessment helps the RESCoop to engage stakeholders and supports planning and execution of activities to effectively manage their interests and expectations. The activities related to the stakeholder needs analysis are targeted to RE projects in their early stage when the product or the service they aim to deliver still needs to be refined and adapted to needs of potential customers or users.

3.3.2 Service Objectives & Benefits

Market research is available as a service to help any RESCoop new or existing, to make better and more informed decisions. The more research is embedded in the strategic plans, the better equipped it is to deal with the changing environment within which it operates. Here is a list outlining the main benefits of investing in marketing analysis and planning:

- It helps RESCoops strengthen their position and gain a better perspective and understanding of their market or target audience, ensuring at the same time that the organisation stays ahead of the competition.
- It minimises any investment risk by researching and testing whether the market, the product and the concept or the idea makes sound business sense.
- It identifies potential threats and opportunities. Both primary research (fieldwork) and secondary research (desk research) can be utilised as an insurance policy against both obvious dangers on the road ahead. Coupling this with some qualitative research for deeper probing can highlight certain opportunities or warning signs that may otherwise have been missed.
- It helps to discover RESCoops and the competitors' strengths and weaknesses so to take the advantage.
- It facilitates strategic planning which is essential to achieve the community's business goals.
- It helps spotting emerging trends so to identify the range of techniques that can be employed to exploit these trends.

- It assists RESCoops to stay ahead of the competition applying audience and data research which are the keys for getting and staying ahead.
- It focuses on customer needs and demands. There are so many important reasons to keep your customers at the centre of all the business which keeps RESCoops attentive to improve their propositions, customer services or product offerings.

3.3.3 Service process

Based on the nature of the projects that the RESCoop is involved, the market key elements should be identified. Then we examine these elements and create the Marketing strategy and we analyse the following structures:

- Market size and trends
- Market segments
- Target market
- Target customer profile

3.4 Mentoring

In comparison with the initial version of this deliverable, D2.9 “BECoop catalogues for the provision of business and financial support services – first version” the implementation of our mentoring service started within the deployment activities of T4.3. Here we created a group of experts mainly from people of the [Network of Interest](#) and we matched the respective mentors with our RESCoop cases. The list of our [mentors](#) can be seen in our KEP and more information about the program and the peer-to-peer meetings can be found in the D4.3. The concept and the description of this service is similar with the initial version.

3.4.1 Service description

This service provides individual support and partnering with suitable experts which are focused on the RESCoops business performance development. A mentoring scheme will be established looking to implement specific sustainable solutions for the community. Mentoring in:

- the initial phase of a sustainable development project e.g., by helping put together a team of partners, organizations, companies and consultants,
- planning and facilitating stakeholder involvement and citizen engagement processes,
- training in sustainable project development and dissemination.

3.4.2 Service Objectives & Benefits

The purpose of mentoring is to tap into the existing knowledge, skills, and experience of senior or high performing mentors and transfer these skills to newer or less experienced Energy Communities in order to advance their business performance.

There are a lot of benefits to being mentored by someone more experienced and senior than you. Rather than learning from your own experience alone, a mentor can accelerate RESCoops learning and development, within new members, more projects, innovation and business advices, etc.

The most practical direct benefits are:

- Gain knowledge. RESCoops that are involved in a mentorship program are more aware of success business models, relevant policies, expectations and critical information than those who do not participate, that can boost their business.
- Enhance skills development. Through advice and guidance, the mentors can help RESCoops to develop their full potential or entrepreneurial mindset in the workplace.
- Networking opportunities. A well structures mentoring program is a great way for RESCoops to expand their network. Through a mentoring program, a community can gain access to important contacts, potential new members and stakeholder groups.
- Problem solving. Through a mentoring program a RESCoop gains experience and guidance in handling difficult situations and the ability to manage its issues better.

3.4.3 Service process

For the development of this service, we need to proceed with the following actions:

- Identification of suitable community (bio)energy mentors (In the case of BECoop will take place under T5.1)
- Development of the pool of mentors (creation of mentor's profiles)
- Matching mentors with Energy Communities
- Peer-to-Peer meetings per case are foreseen (online meetings, work shadowing and study tours)

4 Financial Support services

4.1 Definition of finance support services

After careful consideration of the business, financial and governance models from successful RESCoops the catalogue of business and finance options for potential bioenergy communities was developed. Build upon real insights from our mapping exercise, and the lighthouse cases of D1.1 and the successful RESCoop cases (Annex II) we were able to define the critical business and finance support services that are presented in section 3 and 4 respectively. The scope of our focus was to all active RESCoops (solar, wind, geothermal, storage, mobility etc.) to assess the transferability potential of their success factors to bioenergy as well in terms of Business Models and support services.

The development of the financial catalogue will also enable us to define the necessary finance support services that can be linked with the business ones and are necessary for the uptake of the listed models by bioenergy RESCoops. The multidisciplinary setup of the BECoop consortium and the strong experience that it holds in supporting bioenergy and community-based endeavours, ensures that these services can be delivered in an effective and efficient manner. To this end, we foresee the below financial services:

- Investment planning
- Finding Finance solutions
- EU & National Funding opportunities
- Investment readiness support and networking

Overall, the below descriptions approach a generic scope and can be used by any RESCoop or initiative that is dealing with energy cooperatives in order to set up and/or increase their business activity related to financial available resources and investment measures.

4.2 Services recipients

The BECoop Finance Support services are potentially beneficial for a series of actors already in the Bioenergy Community value chain as well as other relevant stakeholders either as members of Energy Communities or not, such as:

- Citizens / consumers
- Private companies (energy providers, ESCOs, grid operators, etc.)
- Social enterprises (other cooperatives and non-profits, etc.)
- Public entities (municipalities, regional authorities, RE authorities and associations etc.)
- Workers and employees
- Financial institutions, banks and investors

- Policy Makers at the local, national and international levels

Specifically, within the context of BECoop the services have been provided to the pilot cases as these were defined by the pilot partners. Originally it was envisaged that four scenarios tested:

- Expansion of activities to bioenergy heating for an existing and established RESCoop active already in other RES.
- Expand the biomass supply chain - Extend the activities to bioenergy production for an existing bioenergy community that focuses on the production of pellets.
- Development of a new RESCoop on bioenergy heating with the initiative of citizens and local government.
- Development of a new RESCoop community in a rural area in cooperation with existing bioenergy community through a shared production and consumption model.

4.3 Investment planning

This service was developed in parallel with the technical feasibility study and the partners worked together in order to evaluate the investment and demonstrate the profitability for our RESCoops. The results can be seen in the D4.3 and the methodology followed is addressed below like our previous version.

4.3.1 Service description

Investment planning is the process of identifying financial goals and converting them into a plan. This service is the main component of financial planning and a crucial element for RESCoops. The investment planning begins with the identification of goals and objectives and then the matching of those goals with the available financial resources. An estimation of the potential profitability of such an investment is also provided in this service.

4.3.2 Service Objectives & Benefits

The importance and benefits of investment planning for a RESCoop are stated below:

- It makes clear the RESCoop's financial goals.
- Develops a sensible cash-flow management for the community.
- Provides a smart budget allocation among members and projects financial responsibilities.
- Can indicate necessary cost reductions.
- Offers a risk mitigation into the organisation.
- Takes into account crisis management to eliminate dangers.

- Offers smooth fundraising among the members.
- Designs a growth roadmap to enhance the business performance of the RESCoop.
- Attracts additional financial resources.
- Creates transparency between members and investors.

4.3.3 Service process

In order to develop this service meetings should take place with the RESCoops in order to identify critical parameters into their organisational – financial framework as well as project aspects.

For the development of this service, we are proceeding with the below actions:

1. Define the financial goals of the RESCoop
2. Define the objectives of the RESCoop
3. Estimate the total expenses and potential revenues of its activities and project(s).
4. Calculate the cash flows and the investment evaluation indicators to provide valuable feedback into the feasibility analysis of T4.2:
 - Costs estimation and analysis.
 - CAPEX and OPEX calculation.
 - Financial provision 5 years and lifetime of the technology.
 - Integrate scenarios with the potential funding and financing options.
 - Comparison of the current fossil-based energy system with the new bioenergy one.
 - Cost – Benefit analysis.
 - Cumulative Cash Flows.
 - Investment evaluation criteria (in collaboration with the respective technical partners).
 - a) Payback period
 - b) Return on Investment (ROI)
 - c) Net Present Value (NPV)
 - d) Internal Rate of Return (IRR)

4.4 Finding Finance solutions

In comparison with the initial version of this deliverable, D2.9 “BECoop catalogues for the provision of business and financial support services – first version” there are no changes here, in this section we deployed our business support with the same financial solutions as the initial one.

4.4.1 Service description

In the context of RESCoops, a finance solution must be defined as a type of investment which fulfils several objectives directly linked to the nature and identity of a RESCoop project. Finance solutions contribute in a broader sense to renewable energy and energy efficiency projects and are crucial for the development of such communities. The main purpose of this service is to indicate available schemes relevant for RESCoops, coming from the private sector, while minimizing the negative impact of renewable energy projects on the environment.

4.4.2 Service Objectives & Benefits

These Financial solutions aim to bring ecological, social and ethical values for the activities of RESCoops.

Ecological principles

- Reduce the impact of climate change by supporting the efficient use of energy and the implementation of renewable energy technologies to the energy transition.
- Protect the environment while minimizing the impacts of RES installations.
- Ensure the preservation of renewable energy sources, water and soil as well as their quality.

Social and ethical principles

- Support the local economy by stimulating growth and employment (e.g.: by prioritizing the local economy and avoiding business relocation).
- Restrict the exclusive pursuit of financial profit.
- Optimize the energy supply cost and management through local energy autonomy and short distribution loops.
- Ensure financial transparency.
- Support the active involvement of prosumers (producer/consumers) as a priority ahead of technological approaches such as smart meters.
- Encourage Fair Trade in RES projects.
- Ensure the fair access to common goods.

So as to take into account such values in a financial solution, it is important to define an adequate business model to a RESCoop project. The business model will set the basis of a project and key principles to a project’s identity and activities. That way, each project will put in place its own financial

solutions that will respond to its values and needs. In order to give a large overview of the possible financial solutions available for RESCoop projects, this service will focus on schemes that provide the following benefits:

- allow citizens to invest in renewable energy production (particularly local projects).
- involve European citizens willing to invest in citizen RES-projects, offering limited risk opportunities that generate tangible outcomes in terms of RES-e generation.
- finance local renewable energy projects, to allow access to the energy market, and, at the same time, to provide financial means, if possible, at affordable rates, to citizens RES-project developers which often have limited assets and guarantees to propose.

4.4.3 Service process

For the development of this service, we are focusing on assisting RESCoops and its members and:

- inform them about the available private financial opportunities for their projects and activities
- make clear the investment schemes that are suitable for them
- guide them on the different financing sources based on each project phase and activity
- support them in the selection of the correct financial scheme

It is important to note that this service requires the existence of an investment plan and cannot be effective without one.

For an indicative list of Financing Solutions and a brief description see ANNEX III solutions⁴³

4.5 EU and National Funding opportunities

In comparison with the initial version of this deliverable, D2.9 “BECoop catalogues for the provision of business and financial support services – first version” there are no changes in the description of this section, we deployed our business support with the same funding opportunities as the initial version. In particular we applied in the most of our investment plans the utilisation of national funding programs derived from the mobilisation of the local RESCoops in collaboration with the respective local authorities.

4.5.1 Service description

Existing EU funding instruments such as the Regional Development and Cohesion funds, the Just Transition Fund, the Recovery and Resilience Facility and other programmes (LIFE, Horizon Europe)

⁴³ Financial Handbook for RESCoops, 2020 (<https://www.rescoop.eu/toolbox/financial-handbook-for-rescoops>)

provide good opportunities to support local renewable and energy efficiency projects. Part of these funds can be directed towards local and decentralized energy development. As National and regional governments will use these funds to support cities and local governments to encourage the development of local renewables infrastructure this service will focus on EU level funding opportunities and offer guidance on pursuing such funding opportunities.

4.5.2 Service Objectives & Benefits

The main scope of this service is to provide the necessary information about the available funding programmes for the RESCoops and their projects. The difference with the previous service is that these funding opportunities coming from the public sector whereas finance solutions involve mainly private entities. Usually, RESCoops are first seeking for such funding opportunities rather than financial support. The available funding opportunities can help them towards their initial steps of establishment and many times when funding is in place a lot of members are more interested in joining.

Overall, the main benefit of this service is that places a fertile ground for the community to start its activities as well as encourages potential members and useful stakeholders to join. Other benefits regarding ecological, social and ethical principles that described in the previous service are also relevant here.

4.5.3 Service process

For the development of this service, we are focusing on assisting Bioenergy Communities and their members to:

- inform them about the available public funding opportunities for their activities
- guide them on the different funding options based on their needs and operational model
- support them in the selection of the correct funding scheme

The most suitable funding opportunities with their description for the development of RESCoops along with their activities and projects are given below:

- European Regional Development Fund
- Cohesion Fund
- Just Transition Fund
- Recovery and Resilience Facility
- LIFE programme
- Horizon Europe

For a more detailed presentation see ANNEX IV

4.6 Investment Readiness Support and Networking

We linked this service with the participation of our RESCoops in the matchmaking events. Where our consortium partners presented our cases and particular their maturity level for investments in a dedicated group of people with potential investors and collaborators. For information can be seen in the D4.3.

4.6.1 Service description

This service describes the capacity of a RESCoop to understand and meet the specific needs and expectations of its financial sources e.g. investors, and it plays a critical role in shaping whether a business receives and secures funding. Two key components influence a RESCoops' investment readiness: the business viability and the quality of investor materials.

Within the first aspect RESCoops must demonstrate to investors that their businesses are sustainable, well-run organisations. Businesses should demonstrate a sound business model, unique value proposition and qualified team.

The second aspect is investor materials. Documents such as business plans, financial models, investor teasers and memoranda should be robust and make a compelling case for investment in the business.

To this end, in the framework of services provision within BECoop, we plan to combine this service with our networking activities in order to get in touch our RESCoops with potential investors and market actors.

4.6.2 Service Objectives & Benefits

Investment readiness is a core strategic tool to reassure the long-term viability and to increase the business performance of RESCoops. Its most important benefits are that:

- Businesses understand themselves better. Investment ready businesses understand their capital needs and are aware of the capital available to them. Such businesses are best placed to manage external financing.
- Businesses can engage better with investors to raise external capital. An investment-ready business can more easily raise external capital as it is prepared to meet the needs and expectations of investors.
- Investment readiness accelerates the capital raise process. Businesses will have their documents and information prepared in advance, which will shorten the due diligence process and minimise other process delays.

4.6.3 Service process

For this service the below actions are needed in order to get in touch potential investors with RESCoops, that's why we are merging investment readiness with networking events. Different approaches can be used for other cases depending on the country, available contacts, maturity of cooperative and investment schemes. For the BECoop we considered the following:

- Guidance for preparing pitch presentations and improving pitching skills.
- Identification of suitable pitching events or individual investors, collaborators or funding providers.
- Introduction of RESCoops in at least 2 matchmaking events organised by BECoop or other organisations (online or offline).

5 Conclusions and next steps

This report identified and profiled the RESCoops business models to unveil the governance and financial components behind the successful community energy cases and to link them with relevant governance structures. Furthermore, it profiled successful case studies of community renewable energy projects to provide insights on RESCoop Business Model replication potential for the Bioenergy Communities. The assessment of these cases provided **a baseline to indicate the relevance of specific governance/business structures for the Bioenergy communities**. Finally, the information and insights gathered was put in use to define the final set of respective **business and financial support services that can be applied to empower existing RESCoops or to manage the creation of new ones in a region**.

The RESCoops roadmaps that were produced under Task 4.1 were analysed by Q-PLAN and connected to the appropriate set of business and financial support services identified in the initial version of this report. Q-PLAN and CBS worked closely with the project's RESCoops and developed tailored roadmaps for the provision of these services (which took place under T4.3) that directed them to the most suitable business/innovation support services of BECoop and finetuned their content appropriately.

This final version finetuned the content of the initial version based on project experience and validation checks made by the BECoop Experts Community, whilst making sure that it is not overburdened from the BECoop cases specific elements but enriched to fit the needs of wider audiences aspiring to join the Bioenergy RESCoops Community.

The goal of the BECoop catalogues for the provision of business and financial support services is to **enable the growth of existing bioenergy communities and facilitate the establishment of new ones in the European Union, even after the completion of this project**.

Annexes

Annex I Business & Financial support services catalogue

Business Catalogue	Financial Catalogue	
Business modelling	Investment Planning	
Match the RESCoop case with our identified categories	Define the financial goals of the RESCoop along with its objectives.	
Develop the Business Model Canvas	Estimate the total expenses and potential revenues of RESCoop	
Incorporate Environmental & Social dimensions	Calculate cash flows and the evaluation indicators (ROI, NPV, etc.).	
Business planning	EU & National Funding opportunities	
Executive summary & concept	European Regional Development Fund	
RESCoops characteristics & specifications	Cohesion Fund	
Market & Competition Analysis	Just Transition Fund	
Business Model	Recovery and Resilience Facility	
Implementation Schedule	LIFE programme	
Financial Plan	Horizon Europe	
Market Analysis	Finding Finance solutions	
Market size & trends	Self-financing	Ethical or not traditional banks
Market segments	Crowdfunding	Cooperative fund
Target Market	Traditional bank loan	Leasing
Customer profile	Joint ventures	Project financing
Mentoring	Investment Readiness Support / Networking	
Identification of suitable community bioenergy mentors	Guidance for preparing pitch presentations and improving pitching skills	
Development of the pool of mentors (creation of mentor's profiles)	Identification of suitable pitching events or individual investors, collaborators or funding providers	
Matching mentors with Energy Communities	Introduction of RESCoops in at least 2 matchmaking events organised by BECoop or other organisations (online or offline).	
Peer-to-Peer meetings per case are foreseen (online meetings, work shadowing and study tours)		

Annex II Classification Matrix of RESCoop successful cases collected

Name of Organization	Year founded	Legal Form	Renewable Energy Sources						Focus Areas			Final products			Main Technologies and Systems			Main Financial resources			Governance Model	Country	Area		Projects		
			Solar	Wind	Biomass	Hydro	Wave	Geo	Electricity generation	Heat	Energy Storage	Electricity (grid)	Electricity (self-consumption)	Heat (self-consumption)	Solar PV	Hybrid System	Energy Storage	Private subsidies in investment	Private subsidies in capital	Shares			Existing	Ongoing	Planned		
Μίνωα Ενεργειακή Κοινότητα - Minoan Energy Community	Oct 2019	Cooperative	✓	✓					Electricity generation	Heat	Energy Storage	Electricity (grid)	Electricity (self-consumption)	Heat (self-consumption)	Solar PV	Hybrid System	Energy Storage	Private subsidies in investment	Private subsidies in capital	Shares	Regional - National RESCoop	Greece	Peri-urban	Crete		new project 405 kW Solar net metering	800 kW Solar parks
Atlas Citizens - Energy Community	Sept 2020	Cooperative	✓	✓					Energy Savings	Self consumption & storage	Energy consulting	Energy Efficiency	Other		Energy Storage	Other		Shares	Private subsidies in investment		Network of RESCoops	Greece	Rural	Lamia	building capacity events		
Hyperion Solar Community - Electra Energy	2020	Cooperative	✓						Self consumption & storage	Energy Supply	Energy Savings	Electricity (self-consumption)	Energy Efficiency	Electricity (grid)	Solar PV			Shares	Private subsidies in capital		Fully integrated RESCoop	Greece & Balkans	Urban	Athens		180 kWp PV virtual net metering	
ΑΓΡΟΤΙΚΟΣ ΣΥΝΑΙΤΕΡΙΣΜΟΣ Enosi Agriniou	1930	Cooperative	✓	✓	✓				Electricity generation			Electricity (grid)	Electricity (self-consumption)		Solar PV	Onshore Wind		Private subsidies in investment	Shares	Other	Network of RESCoops	Greece	Rural	Agrinio			168 MW Wind 126 MW Solar
Collective Energy Community	2020	Cooperative							Energy consulting	Other		Energy Efficiency			Solar PV			Loans	Shares		Local group of citizens	Greece	Urban	Athens			
Promitheous Energy Community	2020		✓						Electricity generation	Energy Distribution		Electricity (grid)			Solar PV			Loans	Shares		Local group of citizens	Greece	Rural	Epirus			500kWp
EZEK - Karditsa Energy Community	2010	Cooperative	✓		✓				Heat	Self consumption & storage	Electricity generation	Fuel to market	Heat (self-consumption)		Biomass densification	Biomass Combustion	Solar PV	Private subsidies in investment	Private subsidies in capital	Shares	Regional - National RESCoop	GREECE	Rural	Karditsa	Pellet plant Capacity: 1200 tn/year		2 MW solar
Ecopower	1991	Cooperative	✓	✓	✓	✓			Energy Supply	Electricity generation	Energy Distribution	Electricity (grid)			Biomass densification	Onshore Wind	Solar PV	Loans	Shares		Fully integrated RESCoop	Belgium		Flanders			
Prad		Cooperative	✓		✓	✓			Energy Distribution	Electricity generation	Heat	Electricity (grid)	Heat (district heating)		Biomass Combustion	Hydro turbine	Solar PV	Private subsidies in investment	Private subsidies in capital	Shares	Regional - National RESCoop	Italy	Peri-urban	Vinschga u			
SEG		Cooperative	✓		✓	✓			Energy Distribution	Electricity generation	Heat	Electricity (grid)	Heat (district heating)		Biomass Combustion	Solar PV		Private subsidies in investment	Private subsidies in capital	Shares	Regional - National RESCoop	Italy	Peri-urban	Vinschga u			
Fernheizwerk Toblach		Cooperative			✓						Heat		Heat (district heating)		Biomass Combustion			Private subsidies in investment	Private subsidies in capital	Shares	Regional - National RESCoop	Italy	Peri-urban	Pustertal			
Feron Energy Community	2020	Cooperative	✓						Electricity generation			Electricity (grid)			Solar PV			Private subsidies in investment	Private subsidies in capital	Shares	Regional - National RESCoop	Greece	Rural	Volos	500 kWps		

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AENAOs Energy Community	2019	Cooperative	✓						Electricity generation			Electricity (grid)			Solar PV			Private subsidies in investment	Private subsidies in capital	Shares	Regional - National RESCoop	Greece	Rural	Patra	1000 kWps		5 MW solar plant
Vilafranca del Penedes City Council	2017	Other			✓				Heat	Self consumption & storage		Heat (self-consumption)	Heat (district heating)		Biomass Combustion			Public subsidies in investment			Regional - National RESCoop	Spain	Peri-urban	Vilafranca del Penedes	500 kWt		
Liria city council	-	Other	✓		✓				Electricity generation	Heat	Energy Savings	Electricity (self-consumption)	Heat (self-consumption)	Heat (3rd consumer)	Solar PV	Biogas / Biomethane		Public subsidies in investment	Private subsidies in capital		Regional - National RESCoop	Spain	Peri-urban	Lliria (Valencia, Spain)			60 GWh/year biomethane plant
GOIENER	2012	Cooperative	✓			✓			Electricity generation	Energy Supply	Energy Savings	Electricity (self-consumption)	Electricity (PPA)	Electricity (grid)	Solar PV	Hydro turbine		Loans	Private subsidies in investment	Shares	Regional - National RESCoop	Spain	Peri-urban	Ordizia (Pais Vasco, Spain)	700 kWp		
SOM ENERGIA	2010	Cooperative	✓	✓	✓	✓			Electricity generation	Energy Supply	Heat	Electricity (self-consumption)	Electricity (PPA)	Heat (self-consumption)	Solar PV	Hydro turbine	Biogas / Biomethane	Loans	Public subsidies in investment	Shares	Regional - National RESCoop	Spain	Peri-urban	Girona (Cataluña, Spain)	18,5 GWh/año		
UR BEROA	2009	Cooperative			✓				Heat			Heat (district heating)			Biomass Combustion			Shares			Local group of citizens	Spain	Urban	San Sebastián (Pais Vasco, Spain)	600 kWt		
Barrizar S.COOP		Cooperative	✓		✓	✓	✓		Electricity generation	Heat	Energy Supply	Heat (district heating)	Electricity (self-consumption)	Electricity (grid)	Biomass Combustion	Solar thermal	Solar PV	Public subsidies in investment	Shares	Loans	Multi-stakeholder governance model	Spain	Rural		440 kWt (district heating)		
ECOO	2005	Cooperative	✓						Energy Supply	Electricity generation	Energy Savings	Electricity (grid)	Electricity (PPA)	Energy Efficiency	Solar thermal	Solar PV		Shares	Loans	Private subsidies in investment	Local group of citizens	Spain	Urban	Madrid (Spain)			
RESEARCH AND INNOVATION CENTRE PRO-AKADEMIA	2014	Private Limited Company Ltd	✓	✓	✓				Self consumption & storage	Energy consulting	Energy Savings	Electricity (self-consumption)	Heat (self-consumption)	Fuel to market	Biomass densification	Biomass Combustion	Solar PV	Public subsidies in investment	Private subsidies in investment	Private subsidies in capital	Regional - National RESCoop	Poland	Peri-urban	Konstantynów Łódzki			
ZeroOne	2020	Cooperative	✓						Electricity generation	Energy Supply		Electricity (grid)			Solar PV			Loans	Private subsidies in investment	Private subsidies in capital	Local group of citizens	Greece	Rural	Karditsa	4 MW solar		
Energy4All	2002	Cooperative	✓	✓	✓	✓			Electricity generation	Energy Distribution	Energy Supply	Electricity (grid)	Electricity (self-consumption)		Solar PV	Onshore Wind	Hydro turbine	Private subsidies in capital	Private subsidies in investment	Public subsidies in capital	Network of RESCoops	UK	Rural	various	more than 30 projects		
Enercoop	2005	Cooperative	✓	✓	✓				Electricity generation	Energy Distribution	Self consumption & storage	Electricity (self-consumption)	Electricity (PPA)	Heat (self-consumption)	Solar PV	Onshore Wind	Biogas / Biomethane	Public subsidies in capital	Private subsidies in investment	Loans	Multi-stakeholder governance model	France	Peri-urban	whole country	8 MW Wind & 9 MW Solar	12 MW Wind	
SEV	1998	Association	✓		✓	✓			Electricity generation	Energy Distribution	Heat	Electricity (self-consumption)	Heat (self-consumption)	Electricity (PPA)	Solar PV	Biomass Combustion	Hydro turbine	Private subsidies in capital	Private subsidies in investment	Public subsidies in capital	Network of RESCoops	Italy	Peri-urban	South Tyrol	120 Hydro, 45 heating, 149 PV		

Annex III Indicative list of Financing Solutions

Self-financing

When citizens become members of a cooperative, they must become economic participators in the business. For RES, where members own the generating asset, the funds to build it come from investment by co-members. Self-financing is when project capital is raised from members of the cooperative. This can be existing members, or if it is a new scheme, by attracting new members from the community. The capital can be raised in a variety of ways, such as equity, bonds or debt. Cooperatives are unique in that; they are generally exempt from financial regulation (this can vary by country) which makes raising capital easier. RESCoops tend to require large sums of capital to make them happen so it is often necessary to offer reasonable return on investment or interest on bonds. Typically, a cooperative will raise equity from members and pay an annual share interest on that equity, relative to available profit. Projects may also combine equity and debt in the same way as a privately funded scheme.

Crowdfunding

Crowdfunding is an emerging alternative form of financing that directly connects those who can give, lend or invest money with those who need financing for a specific project. Crowdfunding refers to open calls to the wider public, typically through the internet, to finance projects that are directly chosen by the citizens who become involved as investors in the project development. These calls usually state the funding needs and the purposes of the project, defining a limited funding period. Crowdfunding campaigns typically collect small individual contributions coming from a large number of individuals. The projects usually have relatively small funding targets. Crowdfunding is in its early stage of development and so its different models, benefits and risks are still changing.

Traditional bank loan

It is a financing in debt which requires guarantees and the payment of interests. In comparison with an ethical bank, a traditional bank will:

- rarely accept small and medium loan (less than 500 k€/ 1 M€) which are less profitable
- can require further due diligences to the project leaders (to check the guarantees and the ability to lead the project), which can cost 20 to 30,000€
- may be less willing to finance citizen projects whose governance is seen to be more complicated.

Nevertheless, the loan can be similar concerning the interest rates and the guarantees asked.

Joint ventures

A joint venture refers to the creation of a partnership or corporation, in which two or more RESCoops combine part of their assets. It corresponds to a new legal entity and is often created to share risk or expertise on a temporary basis. An international joint venture is a joint venture that has at least one partner organization head quartered outside the country of operation, or that has a significant level of operation in more than one country.

Ethical or not traditional banks

It is a bank whose mission is not to maximize the profit but to foster cultural, social and ecological projects: it does not invest in the financial markets, and it makes loans exclusively to economically viable projects of the social economy: organic agriculture, social or cultural projects, energy saving, renewable energy production, etc. It also organizes a transparent circulation of money; the list of the financed projects is published each year. Most of the time they are cooperative banks: savers and borrowers are also members of the cooperative and have a right to vote each year during the general assembly. More than the right to vote, ethical banks offer to savers and borrowers the possibility to create links among them, which is a strong added value for RESCoop projects managers.

Cooperative fund

It is a not speculative fund that is managed collectively by different stakeholders whose goal is to encourage and foster the energy transition. It can be funded directly by individuals (citizen funds) or by institutions. It invests in capital (equity) in project of renewable energy production and takes part in their management not to control it but to accompany it in some aspects (legal and economical).

Leasing

Leasing is a financing scheme by which a RESCoop can obtain the use of a certain fixed assets for which it must pay a series of contractual, periodic, tax-deductible payments. At the end of the contract term, the user may become owner of the good by paying a fixed quota settled before the signature of the contract. The leasing for large renewable plants is a sort of project financing realized through a financial leasing that implies the presence of a plurality of actors: sponsor, Special Purpose Vehicle, banks or leasing company, developers, operating managers and finally the purchasers of the energy.

Project financing

Project finance is provided by commercial banks as debt that is secured on the cash flow generated by the project, rather than a call on an asset owned by the company applying for the loan. It can also be called non-recourse debt and is always backed by equity, provided by the project's parent company, shareholders or in the case of a cooperative it's members.

European cooperative fund

A European cooperative fund is the same as a cooperative fund but at the European level: the private investors can come from all the countries of Europe as well as the financed projects. It is a not speculative fund; it is managed collectively by different stakeholders whose goal is to encourage and foster the energy transition at the European level. It can be funded directly by individuals (citizen funds) or by institutions. It invests in capital (equity) in projects of renewable energy production and takes part in their management not to control it but to accompany them on some aspects (legal and economical).

Annex IV European Union Funding Instruments and Programs

The **European Regional Development Fund** (ERDF) aims to strengthen economic, social and territorial cohesion in the European Union by correcting imbalances between its regions. In 2021-2027 it will enable investments in a smarter, greener, more connected and more social Europe that is closer to its citizens.

The ERDF finances programmes in shared responsibility between the European Commission and national and regional authorities in Member States. The Member States' administrations choose which projects to finance and take responsibility for day-to-day management.

In 2021-2027, the fund will enable investments to make Europe and its regions:

- More competitive and smarter, through innovation and support to small and medium-sized businesses, as well as digitisation and digital connectivity
- Greener, low-carbon and resilient
- More connected by enhancing mobility
- More social, supporting effective and inclusive employment, education, skills, social inclusion and equal access to healthcare, as well as enhancing the role of culture and sustainable tourism
- Closer to citizens, supporting locally led development and sustainable urban development across the EU.

The **Cohesion Fund** provides support to Member States with a gross national income (GNI) per capita below 90% EU-27 average to strengthen the economic, social and territorial cohesion of the EU.

The Cohesion Fund supports investments in the field of environment and trans-European networks in the area of transport infrastructure.

For the 2021-2027 period, the Cohesion Fund concerns Bulgaria, Czechia, Estonia, Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. 37% of the overall financial allocation of the Cohesion Fund are expected to contribute to climate objectives.

Just Transition Fund is one of the elements of the Just Transition Mechanism for a transition towards climate neutrality.

The Commission provides grants to Member States having identified the territories expected to be the most negatively impacted by the green transition.

The Just Transition Fund supports the economic diversification and reconversion of the territories concerned. This means:

- investments in Small and Medium-sized Enterprises
- creation of new firms

- research and innovation
- environmental rehabilitation
- clean energy
- up- and reskilling of workers
- job-search assistance
- transformation of existing carbon-intensive installations

As part of a wide-ranging response, the aim of the [Recovery and Resilience Facility](#) is to mitigate the economic and social impact of the coronavirus pandemic and make European economies and societies more sustainable, resilient and better prepared for the challenges and opportunities of the green and digital transitions.

The Facility is a temporary recovery instrument. It allows the Commission to raise funds to help Member States implement reforms and investments that are in line with the EU's priorities and that address the challenges identified in country-specific recommendations under the European Semester framework of economic and social policy coordination. It makes available €723.8 billion (in current prices) in loans (€385.8 billion) and grants (€338 billion) for that purpose.

The RRF helps the EU achieve its target of climate neutrality by 2050 and sets Europe on a path of digital transition, creating jobs and spurring growth in the process.

Under the plans of this fund is the creation of RESCoops to accelerate the climate neutrality transition.

The [LIFE programme](#) is the EU's funding instrument for the environment and climate action. It has been running since 1992 and has co-financed more than 5,500 projects across the EU and countries outside the EU. The LIFE programme funding for the 2021 – 2027 period stands at €5.4 billion.

As part of it is to support the implementation of the Energy Efficiency and Renewable Energy Directive. Among the top priorities of these directives is the development of the RESCoops notably with regard to the implementation of rights and enabling frameworks for such communities across Member States (including policy, regulatory and legislative measures) and their impact on the growth of RESCoops. This should also take into account relevant aspects linked to the Citizen Energy Communities addressed in Directive (EU) 2019/944 on common rules for the internal market for electricity; moreover, aspects related to the development of Community Energy Strategies.

Last but definitely not least, [Horizon Europe](#) is the EU's key funding programme for research and innovation with a budget of €95.5 billion. It tackles climate change, helps to achieve the UN's Sustainable Development Goals and boosts the EU's competitiveness and growth.

The programme facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges. It supports creating and better dispersing of excellent knowledge and technologies. It creates jobs, fully engages the EU's talent pool, boosts economic growth, promotes industrial competitiveness and optimises investment impact within a strengthened European Research Area. Legal entities from the EU and associated countries can participate.

The new Horizon Europe proposal features a simplified process for two-stage calls with streamlined and reduced templates for financial and technical reporting. Horizon Europe includes multilingual

support through a portal for funding and tenders with a climate, energy and mobility cluster with two relevant to RESCoops call areas:

- Communities & Cities (focus on zero-emission mobility, positive energy districts, urban social innovation and a global cities research agenda)
- Energy systems & Grids (focus on integrated approaches to match renewables production & consumption locally, based on new services & community initiatives)

Annex V Questionnaire for the RESCoops to identify business needs

Name:

Sector:

Contact info (address, t./f., contact e-mail):

Webpage:

Description of activity:

Q1: What are your members? Please describe the membership base, its size and evolution over the last years.

Q2: Who are your customers? Please describe the customer base, its size and evolution over the last years.

Q3: What are your customers' needs? What do you offer them? Why do they purchase your product/service? How do they use it? Can their needs change over time (e.g. because of trends)?

Q4: What can your RESCoop do well? What are its key competences and strongest assets or unique resources? What is its competitive advantage? What do others think you do well? Please list 3-5 strengths.

Q5: What doesn't your RESCoop do well? Which are the areas where you need improvement? What are the problems encountered for this reason? Are there any knowledge/skills/resources/facilities missing? Please list 3-5 weaknesses.

Q6: Do you make enough profit?

g) Yes

h) No, the reason being

Q7: Do you use state of the art technology/processes for your product/service? Which are considered as best practices for your business (think about e.g. supply chain management, production, packaging, logistics, water and energy efficiency, waste management, etc.)? Do you implement them? If not, please explain why.

Q8: How flexible and receptive to change are you? What is the RESCoop's capacity to introduce changes? Is the RESCoop's culture innovative?

Q9: Who are your competitors (current of future)? What are their strengths and weaknesses? In which areas do they have advantage over you?

Q10: Who are your collaborators? Please list all types of your partners and describe how you collaborate with them. Are you satisfied with them? What skills and competences do you seek in your partners?

Q11: What are the circumstances that affect your business positively or negatively?

a) Political and regulatory

b) Economic

c) Social and cultural (e.g. trends)

d) Technological (e.g. is the RESCoop able to keep up with the pace technology evolves?)

e) Environmental (e.g. weather, natural ecosystem)

f) Market trends

Q12: Does the RESCoop have access to external funding sources?

a) Yes, to the following:

b) No, the reason being

Q13: What do you need/wish to do but you lack the resources/expertise/skills?

Q14: Do you wish to examine new markets (vertically or horizontally)? If yes, which ones?

Q15: Do you wish to examine new markets (vertically or horizontally)? If yes, which ones?

Q16: Which stakeholders will be involved for your project? (Biomass logistics and system integration)

Q17: What are the current energy prices in your area? (Biomass as a fuel €/tn, bioheat costs and fossil-based heating costs €/kWhth)

Q18: Please define your heating system, the annually energy demands (kWh) and the thermal installation capacity (kW or MW)

Q19: What's the purchasing and installation cost of the whole system including the subcomponents (€/kW)? What's the operational and maintenance costs including biomass logistics (€/kW/year)

Q20: Are there any available national funding opportunities for such RESCoop initiatives? If yes please indicate them along with their basic characteristics.

Other notes: