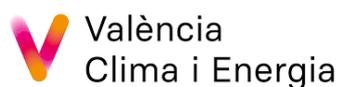


POWERUP

The catalyst for social innovation in the energy market

Business models for inclusive energy services tackling energy poverty



Authors

Gabriele Fregonese, Giovanni Bregolin, Manar Shibly (Sinloc)

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1. Introduction

This Deliverable aims at reporting the knowledge transfer activities on business models carried out in Task 2.4 in the first 9 months of the Power Up project.

Based on the extensive knowledge of the consortium experts Sinloc and Ecopower, and the recognition of social energy players carried out in Task 2.3, the activities focused on transferring specific knowledge on business models to the pilots. Activities started by learning about the ideas and expectations of each pilot about the goals they wish to achieve within the Power Up project, the actions they want to implement, and the stakeholders they are planning to involve in their Local Working Groups (group of stakeholders the partners are working with to achieve their project activities). These activities are reported in section 2..

Then, starting from the expectations of the pilots and their needs in terms of knowledge to develop the actions at the local level, the team identified five types of Business Models that could be suitable to support the pilots: Energy Communities, Energy Cooperatives; ESCo model; One-Stop-Shop; Technology Leasing. Following the Business Model Canvas approach, the team defined a framework for each business model, including a clear definition of the main “pieces” of the Canvas, and identified a series of case studies in different countries.

Finally, the team presented the framework of the business models and the case studies to the pilots in plenary sessions. During the sessions, pilot leaders shared their ideas, thoughts, and experiences which played a role in maximising the knowledge transfer among all pilots.

The activities carried out in Task 2.4 and reported in this deliverable represent a first, fundamental step for the definition of a concept for long-term business models in each pilot. In fact, in the upcoming months of the Power Up project , pilots will have to define their concept business model that will be implemented in the future, thanks to the activities of the Local Working Groups.

2. Preliminary activities

The final objective of Task 2.4 is to transfer knowledge about the potential business models that pilots could adopt in their local context to fight energy poverty.

So, the first activity was defining the framework and drafting a business model template to be used by the pilots for the first exercise. In the context of the Power Up project the SINLOC team chose the business model canvas to deliver a basic training to the pilots for its simplicity and flexibility. Business Model Canvas is a simple, clear and easy to explain tool that allows the pilots to understand the “components” of a business model and how they need to be linked and assessed together for a successful implementation. Therefore, Power Up project partners agreed that the business model canvas would be the basis for the two main activities related to business models and foreseen in the Power Up project:

- knowledge transfer of existing business models available and relevant to fight energy poverty (Task 2.4);
- the definition of the long-term business models of each pilot (Task 2.6).

The following step was identifying the needs and expectations of the pilots, relevant to implementing the planned actions in the Power Up project. In order to do so, SINLOC team invited each pilot coordinator to a one-to-one meeting, to collect the necessary information. Before the meetings, the pilots provided preliminary information about their objectives within the Power Up project, the key partners and stakeholders they will involve in the Local Working Groups and key activities they wish to activate.

The one-to-one meetings were held on:

- 1 February 2022 with UCSA (IT) – Eeklo (BE) – Valencia (ES)
- 2 February 2022 with Herleen (NL)
- 3 February 2022 with Semmo (CZ)

At this stage, the Skopje pilot was not ready to participate in this experiment. The pilot coordinators were invited to learn about all existing business models and other pilots in the project to give them some hints and inspiration for possible actions.

The one-to-one meetings were very useful to understand:

- The current situation in each pilot site, focusing in particular on energy poverty and the regulatory context;
- Actions and initiatives taken locally to address energy poverty (e.g. one-stop-shops, etc.);

- Which stakeholders are already involved and committed to the topic and which will be involved in the local working groups;
- The objectives they pursue in fighting energy poverty and how can the Power Up project contribute to their achievement;
- The kind of activities they plan to implement within the project duration.

All this information was important also to understand which business models would be more suitable to be applied or adapted to the local context. Then, the knowledge transfer activity would focus on these models and would take inspiration from existing schemes.

To conclude the preliminary activities, the team organised a plenary meeting on 10 February 2022 with the participation of all pilots and project partners. This meeting aimed to share the ideas that emerged during the one-to-one sessions. In the same meeting, a collective SWOT analysis exercise was carried out for each pilot. The tool identifies the strengths, weaknesses, opportunities, and risks of the “ideas” of each pilot. The objective of this exercise was to show all partners the potential impact of the activities on their local contexts, not only in positive terms but also in terms of risks to be prevented and/or hedged.

This session was very useful to show all pilots and project partners what the others are doing and planning to do in their local sites. This was also a chance for them to exchange ideas, thoughts and inspiration which added value to the discussions.

As a conclusion of these preliminary activities, the team **identified five suitable business models** to be further explored, analysed, assessed, and then explained to the pilots. These business models are inspired by existing models and real case studies from different countries, and will then set the basis for the long-term business models of the pilots.

3. Identification of suitable Business Models

As a result of the first round of activities the team identified the following five business models:

1. Energy Communities;
2. Energy Cooperatives;
3. ESCo model;
4. One-Stop-Shops;
5. Technology leasing.

These business models were studied and developed according to the Business Model Canvas. In this approach, for each business model, each “box” of the Canvas was filled in with general concepts and statements, applicable to the cases of the pilots. The main scope of these Business Models is to address the issue of energy poverty (the scope of the Power Up project). Thus, the value proposition for each business model is about tackling energy poverty at the local level. All the “pieces” of the Canvas are set to define the who (stakeholders), and the how (activities, resources, channels) that could contribute to achieving the goal. To add value to the knowledge transfer activity, the team identified a series of real case studies as examples for each business model. The case studies were selected based on their similarity to the actions that the pilots plan to activate, and when possible, the team listed case studies from each country pilot to increase the possibility of improving ideas and inspiration.

Finally, the team defined a set of indicators to assign each business model a score on several important aspects to be considered in assessing their suitability for the pilots. These indicators are:

- Legal complexity;
- Setup complexity;
- Management complexity;
- Replicability;
- Effectiveness towards energy poverty;
- Scalability.

At this stage, the team managed to deliberately simplify and schematise the selected business models to provide the pilots with a general concept, framework, and a methodology for the development of the long-term business models at a local level. Therefore, the concepts described in the following paragraphs, as well as the contents of the business model canvas in the presentation slides provided in Annex, should be considered preliminary and guide pilots in better targeting the planned actions.

3.1. Energy Communities

A renewable Energy Community is defined by the EU regulation as a legal entity:

- which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity;
- the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities;
- the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits.

EU regulation on energy communities is quite recent (from 2018¹ and 2019²) and the transposition process into national regulation is still not complete in all countries. Nevertheless, on the basis of the general principles and framework defined by the EU directives, some preliminary considerations can be done and a scheme of a business model can be drafted.

The most important and innovative aspect that the directives on energy communities have brought is the possibility to share the energy produced by a local renewable energy plant among several participants, while before only self-consumption by one single consumer was allowed. The objective of the EU directives is, in fact, enabling the widespread use of renewable energy production and its local consumption, creating the figure of the “prosumers”.

The value proposition for the Energy Community business model was defined as follows:

- **Renewable electricity generation**
- Delivery of **3 main benefits** for the community members:

¹ Directive (EU) 2018/2001 (recast Renewable Energy Directive) containing the definition of Renewable Energy Community (REC)

² Directive (EU) 2019/944 (recast Electricity Directive) containing the definition of Citizen Energy Community (CEC)

- Economic Benefit: Reduced electricity bills
- Environmental benefit
- Social benefit
- **Devote created value to vulnerable households or energy poverty initiatives**
- The community itself can **decide how to use the generated value.**

Around Europe, Energy Communities started to emerge as pilots and demonstration sites particularly in countries that first adapted the EU directives. Although the full potential of Energy Communities needs to be tapped in and exploited, it is expected to be one of the main tools to drive the development of renewable energies.

The opportunities coming from the EU regulation may bring several benefits to the users and may represent a key tool in the definition of a strategy to fight energy poverty. The possibility to share the green energy produced by the members of the community with each other can make this opportunity attractive for all. If we account for a public incentive scheme, the community can find several ways to make vulnerable households benefit from this opportunity. The potential of using Energy Communities to fight energy poverty still needs further study and assessment, and it depends on each country's regulations and scale.

Possible risks associated with this business model might be engaging the poor households, securing the initial funding to buy and install the RE plant, besides the possibility of a change in the national regulations.

More information, simplified business model canvas and examples are provided in the Annex regarding energy communities and their potentials to mitigate energy poverty.

Key Partners  Members of the community Technology suppliers Banks and financing organizations Local offices of social services Local associations devoted to tackling poverty DSO	Key Activities  Setup of the Energy Community Initial investment to install the RES plant Electricity generation Management of the community Generation of value from the generation and shared consumption of renewable energy <hr/> Key Resources  Resources to start the energy community Time	Value Propositions  Renewable electricity generation Delivery of 3 main benefits for the community's members Main focus on the social benefit generated by the community	Customer Relationships  Direct interactions <hr/> Channels  Active members to be reached through dedicated engagement strategies Energy poor households can be contacted through local social services offices and dedicated associations	Customer Segments  Active members: members who participated in the investment Benefiting members: members identified for receiving only the benefit of the community (energy poor households)
Cost Structure  Up-front investment (Pv plants, smart meters, management platform) Operations and maintenance of plants and meters Costs for management of the community		Revenue Streams  Surplus generated electricity (sold to the grid) Remuneration through dedicated incentives Saving from collective shared self-consumption Payment from DR aggregator and other system operators for providing flexibility		

3.2. Energy Cooperatives

Energy Cooperatives are organisations that provide (green) energy supply and other related services to their members. Typically, Energy Cooperatives buy/install and run renewable energy plants and sell the energy they produce to their members at fair prices. Members pay a yearly subscription fee to be part of the cooperative and the profits generated by the cooperative are reinvested in additional RES plants and/or additional energy efficiency measures. One of the most relevant positive aspects of Energy Cooperative is that the ownership of the RES plants is shared among the members themselves, who are also the consumers of the energy produced by these plants. This model works as a social aggregator of local communities, willing to join forces and resources to build up their own renewable energy plants, and take decisions on the kind of energy they consume. Often cooperative energy suppliers don't entirely produce the energy sold to their members, and need to buy additional energy on the market.

The value proposition for the Energy Cooperative business model was defined as follows:

- **To increase the production of renewable energy** at the local level;
- **To provide green energy at fair prices** to the members of the cooperative, reducing their energy bills;

The Energy Cooperative business model is quite widespread in Western and Northern EU Countries: for example, in 2021 in the Netherlands there were more than 667 energy cooperatives with about 112.000 members³.

Energy Cooperatives may play a relevant role in fighting energy poverty, especially if some sort of public supporting scheme is foreseen. By often not looking for important financial benefits, cooperatives can provide lower prices to vulnerable households, support services to reduce or optimise their consumption, and reinvest some benefits in solidarity actions, and involve them in their governance. Nevertheless, this business model requires a longer time to set up and it has high running costs. It is also possible that its ability to cater for the poor households will be limited especially if the energy production was insufficient to cover the needs of the members.

More information, simplified business model canvas and examples are provided in the Annex regarding energy cooperatives and their potentials to mitigate energy poverty **and online**.

3.3. ESCo Model

Energy Service Companies (ESCo) are companies that provide energy services for buildings, including design, implementation and management of energy efficiency renovation projects. ESCo typically offers a specific financing solution for energy efficiency investments. ESCos advances all energy efficiency renovation costs and executes the work in exchange for a fixed service fee paid by the beneficiaries for a fixed period of time defined by a contract. Another service ESCo may offer is Energy Performance Contracts (EPCs), which means that the ESCo guarantees the achievement of a minimum amount of energy savings which generates economic savings. The financial benefits of this intervention are shared between the ESCo and the building owners.

ESCo models and EPCs have become quite common in the public sector, their services are used for public buildings such as schools and hospitals, while their potential is still untapped in the private sector, especially for residential buildings.

The value proposition for the ESCo business model was defined as follows:

- **Energy efficiency renovation**, usually addressing large buildings and with high energy savings objectives
- **No or limited up-front investment costs for building owner**

³ <https://www.hieropgewekt.nl/lokale-energie-monitor#samenvatting>

- **Guarantee of performance/service level** (maintenance) over the life of the contract.

The peculiarity of its financing mechanism benefits people who can't afford the initial investment required for the energy efficiency renovation. That is why it is useful in energy poverty contexts (especially social housing) to renovate buildings without up-front investment.

But it could be more challenging to apply this business model on multi-apartment buildings, where the decision should go through multiple owners or when the inhabitants of the apartments are renting and do not have the power to take such steps. ESCO often requires guarantees when developing projects in the social housing sector or for vulnerable households, which often means the need to involve public actors.

More information, simplified business model canvas and examples are provided in the Annex regarding the ESCo model and its potential to mitigate energy poverty **and online**.

Key Partners  Households Property owners ESCOs Utilities Building managers Sponsor/Guarantor	Key Activities  Energy audit on the buildings with identification of renovation measures Agreement between building owners/tenants and ESCo Subscription of the contract Key Resources  Knowledge and experience with ESCo contracts Facilitator between ESCo and building owners/tenants	Value Propositions  Energy efficiency renovation of building No or limited up-front investment cost Guarantee of performance and maintenance over time	Customer Relationships  Strong engagement of tenants Commitment of landlords Establishment of trust between partners Channels  Local Working Groups One-Stop-Shops Building managers as reference for all tenants	Customer Segments  Landlords Tenants (also in large social housing buildings)
Cost Structure  No up-front investment cost ESCo fees are paid through the savings achieved		Revenue Streams  If the ESCo fee is lower than the energy savings, then there is a net economic saving for the household Self-produced energy from PV could be an additional saving All energy savings become economic savings after the end of the contract		

3.4. One-Stop-Shops

In Europe, there are several examples of One-Stop-Shops (OSS) with a wide range of business models. OSS business models basically differ for the type of services they provide to the users. As widely studied in the EU-funded Innovate project⁴, business models for one-stop-shops can be grouped into four main categories:

Business model	Roles & responsibilities	Practical example of what the one-stop-shop offers to homeowners
Facilitation model	<ul style="list-style-type: none"> ▪ Raise awareness on energy renovation benefits ▪ Provide general information on optimal renovation works ▪ First advice at the 'orientation stage' 	It advises on how to renovate your house and can provide you with the list of suppliers.

⁴ <http://www.financingbuildingrenovation.eu/>

<p>Coordination model</p>	<ul style="list-style-type: none"> ▪ Coordinate existing market actors (suppliers) ▪ Make sure all one-stop-shop services are offered to homeowners ▪ No responsibility for the result of renovation works (only overlooking the whole process) ▪ No responsibility for the overall customer journey (just the first part) 	<p>It advises on how to renovate your house and with which company and it will push suppliers to comply with their promises. Suppliers remain responsible for the final result</p>
<p>All-inclusive model</p>	<ul style="list-style-type: none"> ▪ Offer a full renovation package to homeowners ▪ Bear responsibility for the result of renovation works ▪ Bear responsibility for the overall customer journey 	<p>The one-stop-shop is a contractor that sells you the whole service package and is your main contact point in case something goes wrong with suppliers.</p>
<p>ESCO-type model</p>	<ul style="list-style-type: none"> ▪ Offer a full renovation package with guaranteed energy savings to homeowners ▪ Bear responsibility for the result of renovation works Bear responsibility for the overall customer journey 	<p>The one-stop-shop sells you the renovation package and guarantees the energy savings for the contract duration. The one-stop-shop is paid through energy savings achieved.</p>

Source: INNOVATE project - [How to set up a one-stop-shop for integrated home energy renovation? A step-by-step guide for local authorities and other actors](#)

The value proposition for the One-Stop-Shop business model was defined as follows:

- **Directly support and help users to identify suitable and affordable solutions for the energy poverty issue;**
- **Raise awareness concerning the costs and benefits of renovation measures, coupled with a solution to limit or avoid the initial financial investment;**
- **Simplify the renovation process, sometimes perceived as overly complicated.**

In most of the case studies, OSS fits into the “facilitation” or “coordination” model, as it’s easier to set up and manage, especially for public administrations, and to provide a public service to citizens. In any case, the type of services that can be provided directly depends on the available resources (human and financial), which represent the main boundaries and limits for the implementation of this model.

More information, simplified business model canvas and examples are provided in the Annex regarding the ESCo model and its potential to mitigate energy poverty **and online**.

Key Partners  Technical partners Financial partners Municipality/ local government	Key Activities  Providing information Technical / financial assistance Project Management and monitoring Key Resources  Financial Technical expertise Partners network	Value Propositions  Direct support to vulnerable households Raising awareness Accelerating the renovation process Increasing the market opportunities for its partners Fighting energy poverty	Customer Relationships  Direct interactions Channels  Help desk Online Local events	Customer Segments  Homeowners Building Managers Other public entities (managers of social housing)
Cost Structure  Personnel Physical office Partnership relationships maintenance Development of the online platforms		Revenue Streams  Subscription fee Services fee Brokerage fee Recurring revenue for the financial provider		

3.5. Technology leasing

Technology leasing is a business model where a technology provider (i.e. a manufacturer, a supplier, or a service provider company) leases energy-efficient appliances to households at a monthly rate, providing full services for the whole duration of the contract (usually from 2 up to 10 years). The monthly rate includes a wide range of services, including ordinary maintenance, extended warranty, repair, and replacement in case of failure and disposal after the end of its life cycle.

Through technology leasing, households have the opportunity to get new, energy-efficient appliances for their home, without having to pay the initial up-front investment cost.

The value proposition for the Technology Leasing scheme business model was defined as follows:

- Make energy-efficient appliances affordable for vulnerable households
- Support the reduction of energy consumption and energy bills for households
- Increase the quality of life of the households/users of the appliances
- Provide adequate maintenance of the appliances, increasing lifetime and safety
- Contribute to the application of circular economy principles.

This model is not so common nor widespread, but the team found some interesting examples and pilot projects and included them in the deliverable. In particular the ⁵“Papillon” project in Belgium and the “Circular Housing Project” in Italy. Both examples were very interesting for the pilots, as they were adopted on social housing buildings hosting vulnerable households.

Although this model provides an opportunity for poor households to obtain high efficient appliances without an upfront investment, it has to be economically convenient in the long run, so the consumers don’t end up paying higher price for the same appliance by the end of the contract. In order for this model to work, it requires a strong behavioural change in consuming habits.

More information, simplified business model canvas and examples are provided in the Annex regarding appliance leasing and its potential to mitigate energy poverty **and online**.

<p>Key Partners </p> <ul style="list-style-type: none"> Households Technology suppliers Bank/Leasing company Aggregator End-life manager/Recycler 	<p>Key Activities </p> <p>Identifying the following:</p> <ul style="list-style-type: none"> A technology supplier to provide energy efficient appliances at a fair price End-of-life recycling center An aggregator 	<p>Value Propositions </p> <ul style="list-style-type: none"> Make energy efficient appliances affordable for vulnerable households Support the reduction of energy consumption and energy bills for households Increase the quality of life of the households/users of the appliances Provide adequate maintenance of the appliances, increasing lifetime and safety Contribute to the application of circular economy principles 	<p>Customer Relationships </p> <ul style="list-style-type: none"> Households need to be properly engaged through the Local Working Groups <u>in order to</u> explain them the advantages of the initiative Households need to understand the advantage of renting instead of buying, 	<p>Customer Segments </p> <p>The vulnerable households, benefitting from the advantages brought by the innovative scheme</p>
<p>Cost Structure </p> <ul style="list-style-type: none"> No up-front investment cost to buy the appliances Monthly fee for a short-term period (5 to 10 years) at affordable and convenient rates compared to the market 	<p>Revenue Streams </p> <ul style="list-style-type: none"> Energy saving, thanks to the efficiency of the new appliances Monthly fee also includes warranty and maintenance on the appliances 			

⁵ <https://www.bosch.com/stories/papillon-project/>

4. Knowledge transfer activity

After the development of the five business model schemes, SINLOC team organised a series of plenary meetings involving all the pilots (and, where possible, also the other project partners) to present and explain all schemes in detail. The team allocated 45-minute slots for each business model. All sessions were structured in the same way, with one representative from Sinloc presenting the business model, followed by a Q&A session and leaving the floor to the pilots to express their thoughts and ask for additional details.

The following paragraphs briefly report the main topics discussed during the sessions and the main evidence.

4.1. 1st round – Energy Communities

The first business model presented to the pilots was about Energy Communities. The presentation was done during the meeting in Valencia on 7 April 2022, along with the site visit of the “Castellar” Energy Community. The pilot coordinators found the presentation very interesting, and they participated with strong commitment in the discussion, showing high willingness to better understand the different business models and to think about their application in their locations.

Since energy communities present important opportunities that can actually contribute to fighting energy poverty at the local level, the pilots were keen to fully understand the national regulation in their countries. In fact, while EU directives define the framework for citizen energy communities and renewable energy communities, national regulation differs a lot from one country to another. Still, the transposition process of the EU directive into national regulation is not complete for all countries and may be subject to change in the near future. So, in order to understand the real potential of this opportunity for the scope of the Power Up project, it is necessary to assess national regulation in the pilots’ countries.

Moreover, the pilots asked to have data and numbers for the examples mentioned in the presentation. They needed to get a better understanding on how energy and cash flows can be distributed and shared between the members of the community and what are the actual costs and benefits that can be generated and shared thanks to this model. So, concrete business cases, applied into the Italian, Spanish and Belgian-Flemish context, which are quite different from each other, were added to the presentation (see Annex).

As a first consideration, the Spanish regulation is based on sharing energy among the members of the community, since each participant has the right to receive a share of the energy produced by the RES plant proportional to his/her contribution to the investment. To use this opportunity, Valencia Climate and Energy foundation, owned by the city of Valencia, bought some shares of the community and granted them to selected vulnerable households. This way, vulnerable households benefit from an amount of free and green locally-produced energy. This scheme was developed in the framework of the “Castellar” Energy Community as an experiment to see the potential and the limitations of energy communities to tackle energy poverty.

In the case of the Italian regulation, it is based on sharing the economic benefits among the members of the Community, since the regulation allows for a monetary incentive for the energy shared (instantly produced and consumed) inside the Community. It is up to the regulation of the energy community to define how the incentives are split between the members, considering some technical and financial variables such as the direct self-consumption, who contributed to the initial investment and the amount they invested. In order to make this model a useful and effective tool against energy poverty, it is necessary to create a mechanism that allows vulnerable households to benefit from the incentives generated by the Community.

The Belgian-Flemish regulation is more similar to the Spanish one, but with a few differences. In particular, the energy that is not self-consumed by the prosumers and that is shared with the energy community gets paid only for the commodity price of energy. On the other side, consumers-members of the community get a discount only on the commodity price of energy. No discount on service, transport and overall system costs is applied to the members of the energy community. So, for a prosumer with a PV plant, there is no difference or advantage in joining an energy community, since the remuneration he/she gets on the surplus energy is the same as if it's sold in the market. At the same time, there is no real advantage for consumers to join an energy community, since there is no discount on the non-energy components.

4.2. 2nd round – ESCo and Technology leasing

The second round of business model presentations took place on 14^h April 2022, during an online consortium meeting, where the ESCo and Technology Leasing models were presented. The team chose to present these two models together because they can be integrated, as technology leasing is a service that can be offered by ESCOs.

The pilots' coordinators were interested in learning about these two models as they are not well known nor widespread, especially in the private residential sector. In fact, ESCo model and Energy Performance Contracts (EPCs) are more commonly used in the public sector for the energy renovation, management, operation and maintenance of public buildings, with a guarantee of performance. Their applicability to the private sector has been studied in some Horizon 2020 projects (see the RenOnBill project⁶) but yet it's very rare to find real examples on the market.

However, the pilots thought that there might be some uptake potential for this business model to fight energy poverty.

Concerning the ESCo model, a typical intervention does not require an up-front investment which plays an important role in energy poverty cases. However, there should be a guarantee by some third party (public authority) to overcome the most relevant risk and barrier: creditworthiness of the beneficiaries. Since the ESCo model requires signing long-term contracts (15 to 20 years in general), it's fundamental to have some assurance that the counterparty will be able to afford the payment of the periodic fee. In an energy poverty context, this may only be done through a guarantee. Moreover, another key factor that could make this model feasible and successful, is the availability of public incentives for the energy renovation. In some cases, such as Italy where several grant opportunities are available, the ESCo could leverage those incentives to reduce the periodic fee and/or reduce the payback time of the investments.

Another key issue to be considered is the scale factor and the need for aggregation. Generally, ESCo looks at large-size projects, to achieve economies of scale and justify the initial design costs and the general operating and maintenance costs. Moreover, it would be very difficult for an ESCo to set up a contract with many different counterparties (i.e. tenants inside a multi-apartment building). Hence, this model is best applied in the social housing context, where one single entity (the social housing company) has the ownership of the whole building and the only contractor vs the ESCo. This is also what has been done in one of the case studies presented, where a Belgian ESCo (EDF Luminus) renovated about 45 social housing buildings in the Brussels area, owned by the public social housing company.

As for the Technology Leasing model, this business model is easy to develop and implement. Energy poor households could benefit from this scheme, similarly to the ESCo model, without an up-front investment and the ownership of the appliances and technology will stay with the company.

Also, in this case, the role of the public administration could be key to making this model convenient and effective against energy poverty. The availability of a financial fund supporting these leasing schemes could reduce the monthly fees for the households,

⁶ <https://www.renonbill.eu/>

making energy efficiency appliances even more affordable. Energy poor households are unlikely to get consumer credit loans to finance their leasing contracts therefore having the public administration as a guarantor for the periodic payments would be key to making this model available for energy-poor households.. This business model can only work with a sufficient user basis.

This scheme was found interesting by the pilots, as this could be an additional “component” of their long-term business models. It can be integrated not only within the ESCo model but also it can be offered by Energy Cooperatives to their members or by the one-stop-shops.

4.3. 3rd round – Energy Cooperatives and One-Stop-Shops

The third and last round of business model presentations took place on 3 May 2022, when a dedicated online meeting with all the pilots was organised. During the meeting, the Energy Cooperatives and One-Stop-Shop business models were presented.

The Energy Cooperative business model is quite widespread in Northern Europe, while only a few small examples exist in Southern and Eastern Europe. During the meeting in Valencia, the project partner Ecopower, an energy cooperative, presented their business models and plan to tackle energy poverty. A very interesting example is the idea of the Eeklo pilot, where the city administration has bought 25% shares of one wind plant, The idee proposed is to grant a number of shares to vulnerable households for a period of time, during which they can benefit from having access to clean energy and Eeklo services. The period is currently proposed for 6 years after which the beneficiaries might buy the shares or give them back to Eelko.

Other pilots were quite attracted by this model, even though it’s not easy to set up from scratch, especially in countries where energy cooperatives are not so widespread and still are not a key player in the energy sector. In particular, Valencia and Heerlen pilots found that energy cooperatives could play a role in their local business models. Although they have not defined the exact role of the energy cooperatives, they learned that a local energy cooperative could develop energy communities among its members, following the example of Oeiras (Portugal) with the cooperative Coopérnico. Such opportunity will be further explored by the team through a process of evaluating the benefits and costs of the various options keeping in mind the objective of the project which is fighting energy poverty.

The final business model scheme presented by the team was the One-Stop-Shops (OSS). In the project consortium, there are already some examples of OSS: Valencia (Oficina de la Energia), Heerlen (WoonWijzerWinkel), UCSA, Eeklo. SEMMO was interested in learning about the process of setting up a One-Stop-Shop, the kind of services it offers, and the possible financing methods to sustain the OSS in the long term, as the pilot city of

Roznov doesn't have one.. OSS could be the starting point to support vulnerable households by informing them about the potential solutions. OSS does not only offer information and advice to citizens on how to save on energy bills, but it also showcases a series of services that can be provided at the local level. These could include examples and solutions presented in other business models: for instance, in Valencia, the OSS could support the activation of Energy Communities; in other cases, the OSS could rent/lease appliances or offer ESCo services through agreements with technology suppliers/ESCo.

The main concerns of the pilots were about the cost and the resources needed to set up and run the OSS. As explained in previous paragraph 3.4, the availability of financial resources and skilled personnel is fundamental to offering a quality service and making the OSS model effective in achieving its goal. Therefore, during the meetings of the Local Working Groups, the pilots need to understand how much they could afford to spend in terms of financial resources and then identify the kind of services they could offer with the resources they have. This is mainly because One-Stop-Shops operate with public funding, provide free public services, and are not supposed to generate revenues. They should achieve a good value-for-money, demonstrating that the resources invested by the Public Authority create positive benefits for the citizens that set off the costs.

5. Concluding remarks and next steps

The knowledge transfer activity carried out in Task 2.4 was very useful to train the pilots on available business models and inspire them to define the actions needed at the local level. By sharing experiences, learning from case studies, and acquiring new methodology, pilots had the opportunity to better understand the available opportunities in the energy sector to fight energy poverty and how to use them.

The acquired knowledge will support the pilots' activities within the Local Working Groups, where the relevant stakeholders will plan the actions to be implemented to fight energy poverty. The business model schemes provided will guide them in this process and will provide them with the tools to think and plan their activities within the defined framework and boundaries. Particularly during interactions with stakeholders and the vulnerable households, pilots will have the necessary instruments to identify the most suitable and feasible solutions to fight energy poverty in their areas.

This work is preliminary to defining the long-term business model for each pilot. After concluding the workshops with the Local Working Groups, the following steps will be to build up a place-specific business model. The long-term business models should include:

- More precise identification of the stakeholders and their roles;
- Clear definition of the activities (in terms of tasks and milestones) to be developed and implemented by the Pilots;
- An assessment of the key resources needed to start and develop the activities;
- The first assessment of cost and revenue streams, that were not numerically assessed in the schemes presented in this deliverable as they depend on the type of activities, their size, the local context, etc.

Long-term business models may also differ from the schemes presented in this deliverable and/or may be a combination of different schemes of business models. As an example, the long-term business model of one pilot could be to set up and run a One-Stop-Shop, with the objective of supporting citizens in creating new energy communities.

Another key important issue to address is the engagement of the vulnerable households, which is related to the “customer segment” and “communication channels” of the Business Model Canvas. During this task, SINLOC team focused on “key partners”, “value proposition”

and “key activities” parts of the business models. Since Power Up project is about developing and offering solutions to vulnerable households to tackle energy poverty, the definition of an engagement strategy is fundamental for success. Consequently, pilots must make sure that their long-term business models and strategy are adapted to vulnerable households’ needs. The project is built on the co-creation concept with vulnerable households and their involvement in the scheme governance. This may create a set of constraints and boundaries to which all other “parts” of the business model canvas must be adapted to. This work will be done with the Local Working Groups to define the precise actions, taking into consideration the long-term business model, the feasibility of the actions, and their sustainability over time.



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#EUPower Up #socialenergyplayers

This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant agreement No. 101033940



Energy Community

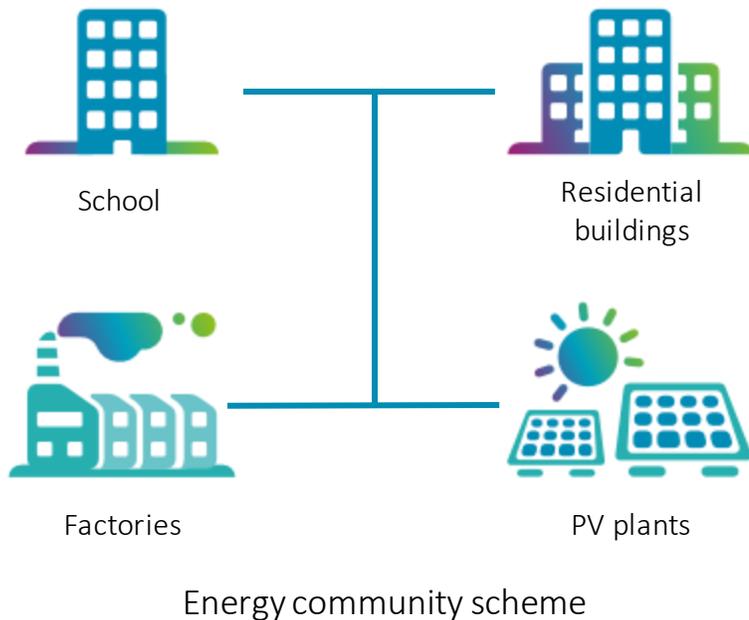
Business model based on energy community

Sinloc SPA



This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant agreement No. 101033940

Description of the model



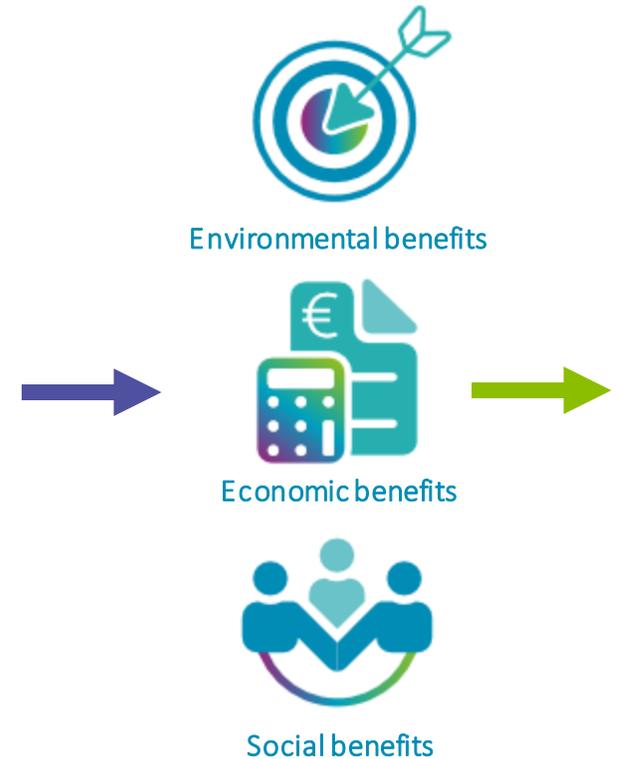
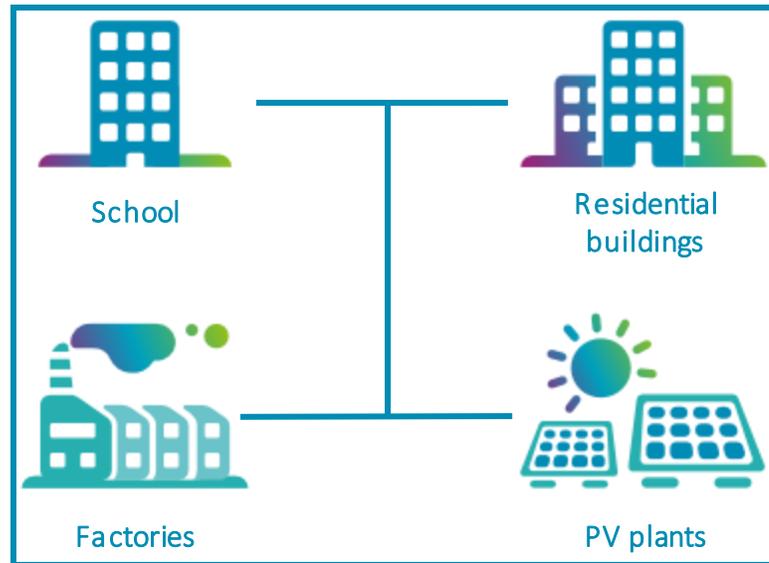
"Renewable energy community" means a legal entity:

- which, in accordance with the applicable national law, is based on **open and voluntary participation**, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity;
- the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities;
- the primary purpose of which is to provide **environmental, economic or social community benefits** for its shareholders or members or for the local areas where it operates, rather than financial profits;

Description of the model

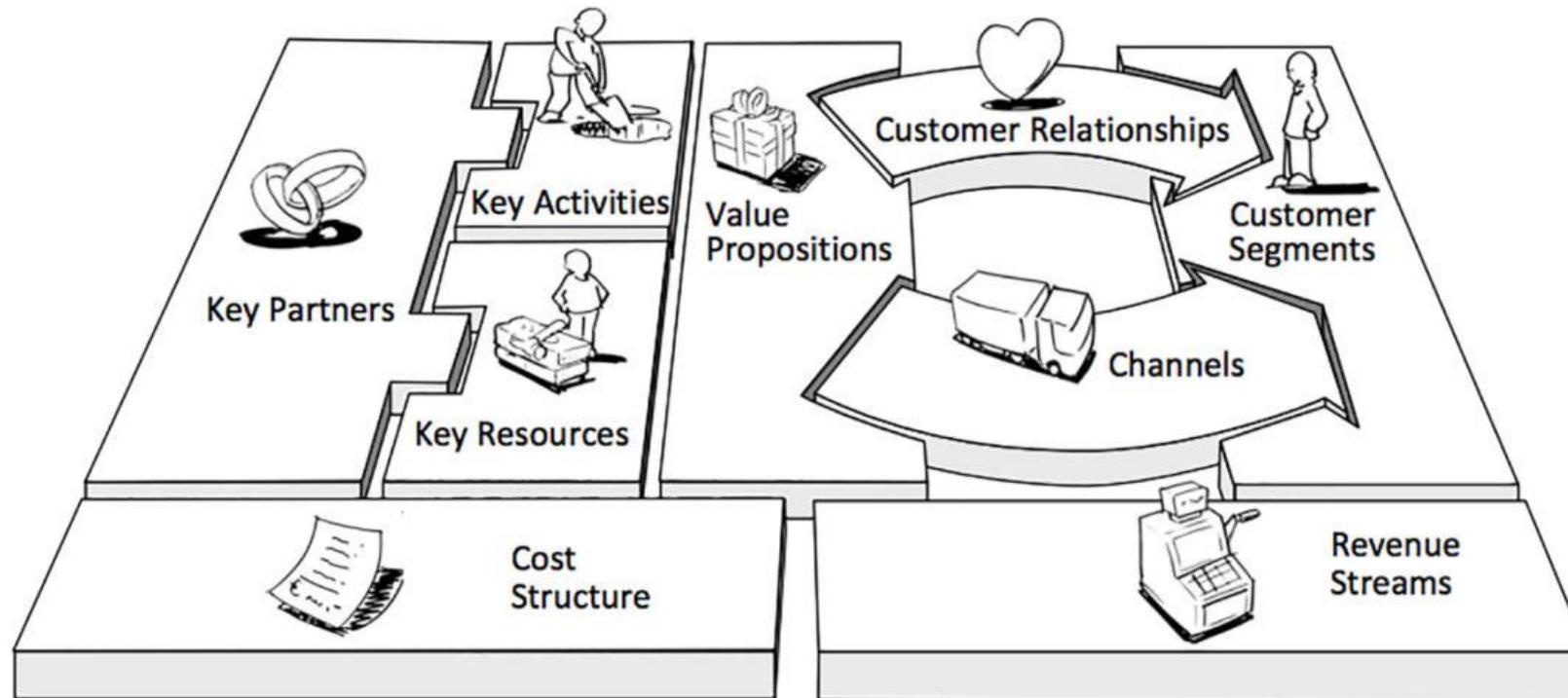
The main goal of an energy community is to produce 3 different kind of benefits

A renewable energy community has the objective of increasing the energy produced from renewable sources, while providing three different benefits to its members.



ENHANCE THESE BENEFITS LOCALLY

Business Model Canvas



Key Partners



- **Members of the community** (households, businesses, public buildings)
- **Technology suppliers**
 - For the renewable energy sources (PV, Hydro, etc.) including installation and maintenance
 - For the setting up the monitoring infrastructure
- **Banks and financing organizations**
 - For the financing of the energy community
 - For the creation of possible financial ad hoc solutions (for ex. crowdfunding)
- **Local offices of social services**
- **Local associations devoted to tackling poverty**
- **DSO**



Key activities



- **Setup of the Energy Community between the members**
- **Initial investment** to install the RES plant
- **Electricity generation**
 - The purpose of a renewable energy community is the production and sharing of renewable electrical energy
 - For doing so it needs specific assets and technology
- **Management of the community**
- **Generation of value from the generation and shared consumption of renewable energy**

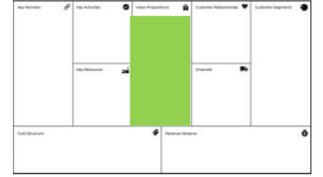
Key resources and Time



- **Resources to start the energy community:**
 - Financial resources to purchase the energy renewable sources and relevant technology installations
 - Technical, administrative and legal expertise to set up the community
- **Time:** to set up and start is relatively short it varies depends on the following:
 - Legal issues: regulations to set up the entity
 - Budget: if there is a grant to fund the power plant or the community has the raise the funding
 - Internal regulation of the community
 - Availability of staff: qualified personnel to set up and run (mainly through a dedicated platform) the community
 - Availability of interested community of investors (subscribers/members)



Value Proposition



- Renewable electricity generation
- Delivery of 3 main benefits for the community's members
 - Economic Benefit: Reduced electricity bills
 - Environmental benefit
 - Social benefit
- Main focus on the social benefit generated by the community
 - Devote that value to energy poverty initiatives
 - The community itself can decide how to use the generated value



Customer Relationships Segments and channels



- **Direct interactions**
- The community may have **different channels** based on the purposes from which is built. Members might be divided in 2 main categories:
 - **Active members**: members who participated in the investment
 - **Benefiting members**: members identified for receiving only the benefit of the community (energy poor households)
- **Active members** to be reached through dedicated engagement strategies
- **Energy poor households** can be contacted through local social services offices and dedicated associations



Cost structure

Revenue stream



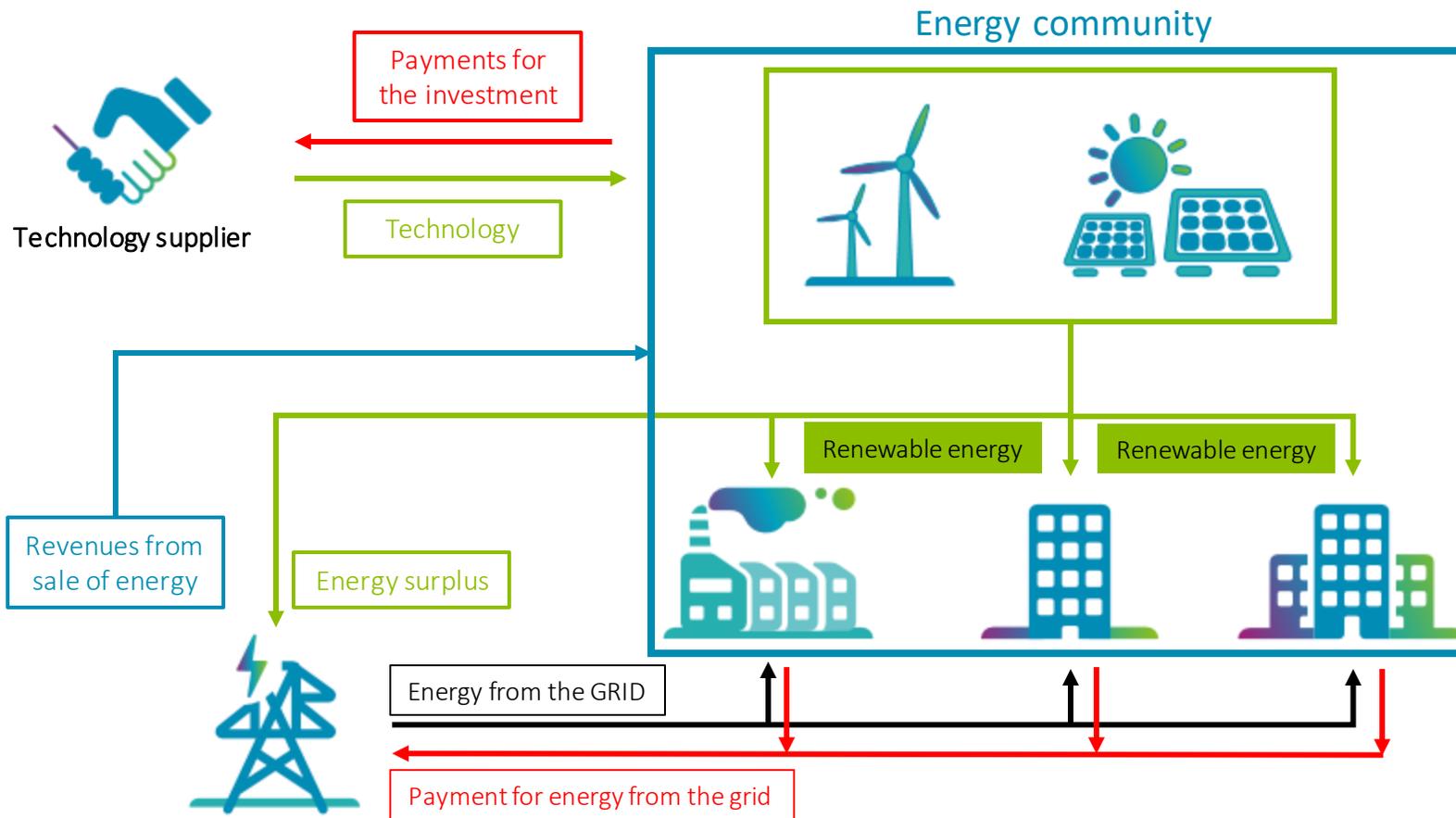
Cost Structure

- Up-front investment (Pv plants, smart meters, management platform)
- Operations and maintenance of plants and meters
- Costs for management of the community

Revenue Stream

- Surplus generated electricity (sold to the grid)
- Remuneration through dedicated incentives
- Saving from collective shared self-consumption
- Payment from DR aggregator and other system operators for providing flexibility

Energy flows



Energy community

- **Reduces energy costs through:**
 - Shared consumption of renewable generated energy
 - Efficiency of the grid
- **Generates revenue:**
 - Sale of energy surplus
 - Incentives
- **Bear the costs for:**
 - Investment in the RES plant
 - Smart meters
 - Management platform
 - Setup costs

Monetary flows – Spanish regulation

Hereafter is reported a hypothetical example of an energy community built under the Spanish regulation

TECHNICAL HYPOTHESIS		
Users	30	Unit
<i>residential</i>	29	Unit
<i>Public Administration</i>	1	Unit
Total annual consumption	88	MWh
% of consumption covered by RES	40	%
Annual production from RES	37	MWh
<i>Physical self consumption</i>	0	MWh
<i>Shared energy</i>	37	MWh
RES capacity (PV)	0,03	MWp

INVESTMENTS				
	Size	Benchmark costs	Investment	
PV Plant	30 kWp	1.000 €/kWp	30.000	€
Hardware and Software	30 unit	250 €/unit	7.500	€
Administrative costs			3.000	€
Total investments			40.500	€

The model is built starting from the number of participants, in this case 29 households and 1 Public Administration building. All buildings are virtually connected to the RES plant, and the plant is placed on top of a building whose owner is member of the community. Total energy consumption provide inputs for the dimensioning of the RES plant, in this case a PV, and the related investment costs. It is assumed that all produced energy is shared among the members, thus there is no surplus energy to be sold to the grid

For the Spanish regulation, in order to have access to simplified compensation for surplus energy, total power of the plant should be <100 kWp and at least one consumer must be internally connected with the generation installation.

There is no public incentives on shared energy, but each member is entitled to receive a discount on the energy bill for the amount of energy produced by his share of the RES plant and consumed at the same time.

On the other side, the REC has to sustains costs, mainly related to general maintenance.

REC ANNUAL COSTS		
	Unitary value	Total
Plant maintenance	13 €/kWp	390 €
Infrastructure maintenance	35 €/unit	1.050 €
Data management	15 €/unit	450 €
Total costs		1.890 €

REC ANNUAL REVENUES			
	Energy	Unitary values	Total
Shared energy (avoided cost)	37 MWh	250 €/MWh	9.250 €
Total Revenues			9.250 €

Net Cash Flow 7.360 €

Payback time 6 years

The model generates cash flows which are able to pay back the investment in about 6 years.

Monetary flows – Italian regulation

Hereafter is reported a hypothetical example of an energy community built under the Italian regulation

TECHNICAL HYPOTHESIS		
Users	30	Unit
<i>residential</i>	29	Unit
<i>Public Administration</i>	1	Unit
Total annual consumption	88	MWh
% of consumption covered by RES	40	%
Annual production from RES	37	MWh
<i>Physical self consumption</i>	7	MWh
<i>Shared energy</i>	30	MWh
RES capacity (PV)	0,03	MWp

INVESTMENTS					
	Size	Benchmark costs	Investment		
PV Plant	30 kWp	1.000 €/kWp	30.000	€	
Hardware and Software	30 unit	250 €/unit	7.500	€	
Administrative costs			3.000	€	
Total investments			40.500	€	

The model is built starting from the number of participants, in this case 29 households and 1 Public Administration building. The households are virtually connected, while the P.A. is physically connected to the RES source. Total energy consumption provide inputs for the dimensioning of the RES plant, in this case a PV, and the related investment costs. As investment costs are considered also Infrastructure and administrative costs.

Italian regulation for REC distinguishes among “physically self-consumed” and “shared” energy. In the first case, energy is directly flowing from the RES to the connected building, directly reducing the energy bought from the grid. Shared energy is energy produced and consumed at the same time by the members of the community. Shared energy receives incentives by the Government through a feed-in tariff (110 €/MWh) and the reimbursement of grid tariff (8€/MWh). REC also receives a payment for the energy that is sold to the grid (shared or not). On the other side, the REC has to sustain costs, mainly related to general maintenance.

Net Cash Flow	6.200 €
Payback time	7 years

The model generates cash flows which are able to pay back the investment in about 7 years.

REC ANNUAL COSTS			
	Unitary value		Total
Plant maintenance	13 €/kWp		390 €
Infrastructure maintenance	35 €/unit		1.050 €
Data management	15 €/unit		450 €
Total costs			1.890 €

REC ANNUAL REVENUES						
	Energy	Unitary values	Total			
Gov. Incentive	30 MWh	110 €/MWh	3.300	€		
Grid tariff reimbursement	30 MWh	8 €/MWh	240	€		
Sale of energy	30 MWh	90 €/MWh	2.700	€		
Self consumption (not shared)	7 MWh	250 €/MWh	1.850	€		
Total Revenues			8.090	€		

Monetary flows – Flanders regulation

Hereafter is reported a hypothetical example of an energy community built under the Flanders regulation

TECHNICAL HYPOTHESIS		
Users	30	Unit
<i>residential</i>	29	Unit
<i>Public Administration</i>	1	Unit
Total annual consumption	88	MWh
% of consumption covered by RES	40	%
Annual production from RES	37	MWh
<i>Physical self consumption</i>	0	MWh
<i>Shared energy</i>	37	MWh
RES capacity (PV)	0,03	MWp

INVESTMENTS					
	Size		Benchmark costs		Investment
PV Plant	30	kWp	1.000	€/kWp	30.000 €
Hardware and Software	30	unit	250	€/unit	7.500 €
Administrative costs					3.000 €
Total investments					40.500 €

The model is built starting from the number of participants, in this case 29 households and 1 Public Administration building. All buildings are virtually connected to the RES plant, and the plant is placed on top of a building whose owner is member of the community. Total energy consumption provide inputs for the dimensioning of the RES plant, in this case a PV, and the related investment costs. It is assumed that all produced energy is shared among the members, thus there is no surplus energy to be sold to the grid

For the Flanders regulation, REC is managed similarly as in the Spanish regulation, with a relevant difference in how discounts are calculated. There is no public incentives on shared energy, but each member is entitled to receive a discount on the energy bill for the amount of energy produced by his share of the RES plant and consumed at the same time. The discount comprises only the energy commodity and does not include taxes or distribution costs.

On the other side, the REC has to sustains costs, mainly related to general maintenance.

Net Cash Flow	2.735 €
Payback time	15 years

The model generates cash flows which are able to pay back the investment in about 15 years.

REC ANNUAL COSTS			
	Unitary value		Total
Plant maintenance	13	€/kWp	390 €
Infrastructure maintenance	35	€/unit	1.050 €
Data management	15	€/unit	450 €
Total costs			1.890 €

REC ANNUAL REVENUES					
	Energy	Unitary values		Total	
Shared energy (avoided cost)	37	MWh	125	€/MWh	4.625 €
Total Revenues					4.625 €

Sustainable development goals

The proposed business model not only pursue his major aim of tackling energy poverty, but also contributes to the achievement of the Sustainable development goals provided by the United Nations



End poverty in all its forms everywhere

Contribution



Make cities and human settlements inclusive, safe, resilient and sustainable

Contribution



Ensure access to affordable, reliable, sustainable and modern energy for all

Contribution



Take urgent action to combat climate change and its impacts

Contribution



<p>Key Partners </p> <p>Members of the community</p> <p>Technology suppliers</p> <p>Banks and financing organizations</p> <p>Local offices of social services</p> <p>Local associations devoted to tackling poverty</p> <p>DSO</p>	<p>Key Activities </p> <p>Setup of the Energy Community</p> <p>Initial investment to install the RES plant</p> <p>Electricity generation</p> <p>Management of the community</p> <p>Generation of value from the generation and shared consumption of renewable energy</p>	<p>Value Propositions </p> <p>Renewable electricity generation</p> <p>Delivery of 3 main benefits for the community's members</p> <p>Main focus on the social benefit generated by the community</p>	<p>Customer Relationships </p> <p>Direct interactions</p>	<p>Customer Segments </p> <p>Active members: members who participated in the investment</p> <p>Benefiting members: members identified for receiving only the benefit of the community (energy poor households)</p>
	<p>Key Resources </p> <p>Resources to start the energy community</p> <p>Time</p>		<p>Channels </p> <p>Active members to be reached through dedicated engagement strategies</p> <p>Energy poor households can be contacted through local social services offices and dedicated associations</p>	
<p>Cost Structure </p> <p>Up-front investment (Pv plants, smart meters, management platform)</p> <p>Operations and maintenance of plants and meters</p> <p>Costs for management of the community</p>			<p>Revenue Streams </p> <p>Surplus generated electricity (sold to the grid)</p> <p>Remuneration through dedicated incentives</p> <p>Saving from collective shared self-consumption</p> <p>Payment from DR aggregator and other system operators for providing flexibility</p>	

This BM contributes to the following SDGs



Business Model SWOT Analysis

STRENGTH

Local and effective

Coupling energy poverty with renewable energy production

Strength the relationships among citizens (community)

OPPORTUNITIES

Possibility to add members in different moments

Potentially available for every households

The value generated can be used in different ways

WEAKNESSES

Upfront investment which may represent an impassable barrier for vulnerable households

Legislative limitations

THREATS

Change in incentives legislation

Collaboration with Public Authority (time consuming – need for public tendering)

Barrio Solar

Sharing renewable energy and solidarity in the community

Actur Barrio Solar is an initiative promoted by ECODES, EDP and the Zaragoza City Council, with the collaboration of the Schneider Electric Foundation, EDP Foundation and Zaragoza Vivienda, whose objective is to offer access to self-consumption of energy to businesses and homes located in the northern area of the Actur - Rey Fernando neighborhood of Zaragoza.



- Cuota de 6,9 € al mes
- Sin cambiar de compañía
- Sin permanencia
- Ahorra hasta un 30% en energía
- Ayudando a tus vecinos y vecinas vulnerables
- Reduciendo tu impacto sobre el Clima



3 main actors



Renewable energy



Tackling energy poverty

BARRIO SOLAR

The energy community consists of two photovoltaic installations of 50 kWp each located in the Municipal Sports Pavilions Siglo XXI and Actur V. Businesses and neighbors who are located within 500 meters of at least one of the two facilities (as stated in the RD 244/2019 on self-consumption), may participate by self-consuming solar energy without having to perform any work or installation in your home, or change electricity company.



Actur Barrio Solar is an initiative that aims to reach everyone in the neighborhood. Therefore, 10% of the energy generated will go to help 20 vulnerable families in Actur, excluding them from paying the monthly fee. Vulnerable families will simply receive renewable energy free of charge. In addition, energy audits will be carried out free of charge in the homes of vulnerable neighbors and energy efficiency measures in their homes.

Magliano Alpi

Comunità Energetica Rinnovabile Magliano Alpi

The energy community is developed around a 20 kW solar photovoltaic system, installed on the roof of the Municipal Building. Connected to the POD of the City Hall, the system is designed to ensure the self-sufficiency of the building itself, the library, the gymnasium and the municipal schools and to exchange surplus energy with 5 participating households in order to meet about 40% of electricity consumption, as well as powering a charging station for electric cars, free for community members.



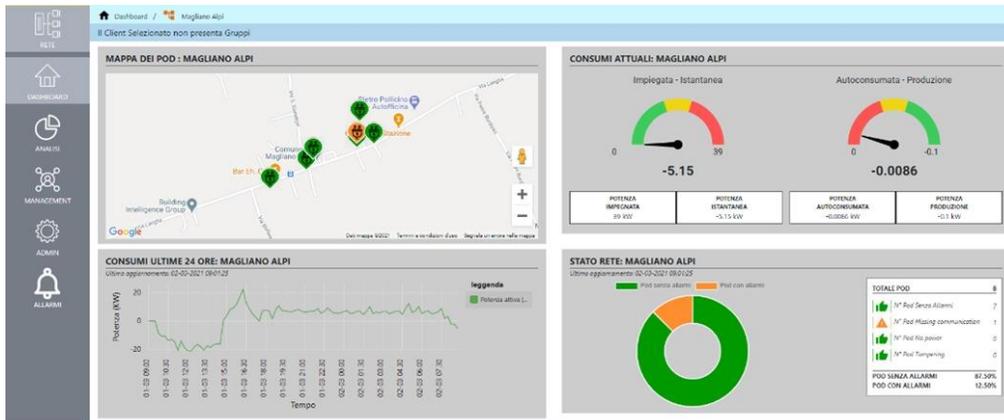
Public Actor
5 Families



Renewable
energy



Reducing energy costs



Positive aspects

1° Energy comm. In Italy,
now an example and a
stimulus for other

Replicability

Challenges

Collaboration with
Public Authority

Difficult to scale

Ganshoren - « L'école Nos Bambins »

Renewable Energy Solutions for Urban communities

Belgium's first renewable energy community began on August 1, 2020 around the “Nos Bambins” school in Ganshoren. Two photovoltaic systems, one on the roof of the school, the other on the home of a district resident, now share their solar electricity with local consumers, including individuals and the municipality.



Local School
7 consumers



Renewable
Energy



Self consumption
From 18% to 64%

Average self-consumption rate of the 2 installations (before the project): 18%.



Average self-consumption rate of the 2 installations (after the project): 64%.

7 consumers (including individuals and the municipality of Ganshoren).

2 producers providing surplus electricity from two solar plants:

- 2.4 kWp and 34.77 kWp.

Decrease in the volume of electricity consumed by the supplier: - 44%.



Île d'Yeu – «Harmon'Yeu»

Renawable energy community in the west coast of France

Harmon'Yeu is collective self-consumption project launched in the municipality of Île d'Yeu and led by ENGIE. Harmon'Yeu allows 23 households to share the energy produced by five of them using PV panels installed on their roofs. Electricity in excess is stored in a common battery.

From a legal perspective, the project is organized around an “organized legal entity”: an association called “Communauté d’Energie Ile d’Yeu” of which both producers and consumers are members.

According to ENGIE, during the first three months of operation 96% of the electricity produced was self-consumed by the REC members, meeting the 28% of their total needs.



23 Households



Renewable
Energy



Reducing energy costs



Result of the REC implementation after 12 months

According to ENGIE first assessment, in the first 12 months, the members of the community have on average consumed 97% of the electricity produced and saved around €140 on their electricity bills.

For the second year the plan of the community is to improve the monitoring process of the electricity production and consumption. The prosumer will be supported by a ENGIE app that notifies them suggestion to consume better and less.



Oeiras – Citizen led energy community

4 families energy community in condominium

In Oeiras, a group of families that live in the same condominium is getting ready to implement a local energy community. To do so, they will invest in a total of five photovoltaic modules and generate locally and sustainably part of the electricity they will use in their homes.

Coopérnico, one of the most successful renewable energy cooperative in Portugal, will assume the initial investment in the photovoltaic system for collective self-consumption and will also provide support in the legal aspects of the project, including the creation of the internal rules and the registration of the community.



4 Families living in the same building



Renewable Energy



Esco model applied for energy community

The PV technical estimates are:

- Five modules PV, total installed power of 2,25 KWp.
 - Total production/year: >3,3MWh
 - Average estimated annual bill savings for family: 154€

Coopérnico

Energia verde, sustentabilidade e cidadania

Lessons learned

Barrio Solar	<ul style="list-style-type: none">Selected vulnerable households involved benefit from the participation and RE generation without paying the participation fee
Magliano Alpi	<ul style="list-style-type: none">Initiative born from the Municipality, that offered its surplus energy to other participants, selected through a public call
Ganshoren	<ul style="list-style-type: none">Mixing different users (schools and households) with different consumption patterns help increase the self-consumption from the PV plant
Île d'Yeu	<ul style="list-style-type: none">Mixing prosumers with consumers and adding storage to the community maximizes self-consumption (96%), fully exploiting the potential of the PV
Oeiras	<ul style="list-style-type: none">Investment has been supported, financially and through technical assistance and advisory, by the local energy cooperative



Conclusion and analysis

Legal Complexity



Set-up Complexity



Management Complexity



Replicability



**Effectiveness towards
energy poverty**



Scalability





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We are
the catalyst
for social
innovation
in the energy
market





Esco Services



Business model based on Esco services

Sinloc SPA



This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant agreement No. 101033940



Description of the model

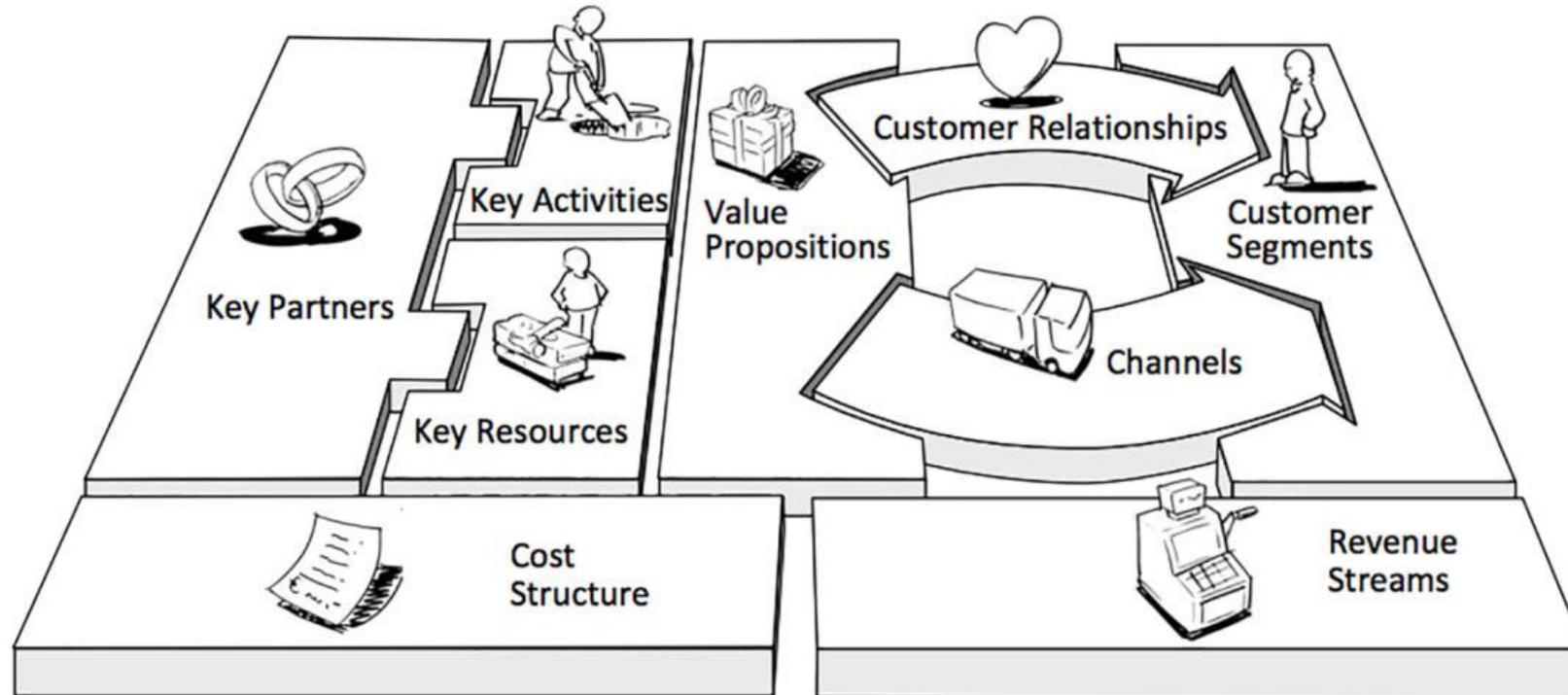
- This model is about the services that an ESCo could provide to increase energy efficiency and reduce energy costs for the households
- It's applicable to several type of renovation measures (building envelope, equipment and solar) and its economics vary mainly accordingly to technical aspects
- It can be activated without or with limited up-front investment cost
- It's generally more suitable for large-scale, multi-apartment buildings

Description of the model

- The ESCo provides design and financing of the renovation measures
- The ESCo renovates the house and may be the energy supplier
- The households benefit from the new equipment and energy efficiency measures, paying a periodic fee to the ESCo
- Economic benefits are usually shared between ESCo and households during the contract



Business Model Canvas



Key partners



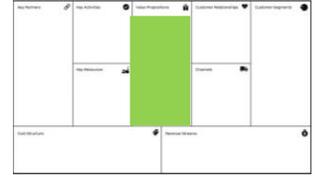
- **Households:** the ones that benefit from the renovation measures
- **Property owners** (if different from households): the owners of the building where the renovation is made, which must agree to undergo the renovation project
- **ESCo:** the provider of the energy efficiency service and investment
- **Utility:** the supplier of the energy source (electricity and gas) – could also be an ESCo and provide the energy efficiency services
- **Building manager** (in case of multi-apartment buildings): the person in charge of managing the building and contracting with the ESCo
- **Sponsor/Guarantor** (if needed/required by the ESCo): the subject that can guarantee the payment by the households – Public entity, NGO, guarantee fund, etc.

Key activities – Key resources



- **Energy audit on the buildings**
 - Assessment of the current status of the building and historical energy consumption
 - Analysis of the energy efficiency measures
 - Could be directly done by the ESCo applying to do the renovation works
- **Subscription of the contract with the ESCo**
 - Needs the agreement of the majority of property-owners (apartment building meeting)
 - Definition of the payment mechanisms
 - Has to define a clear mechanism for measurement and verification of performance
- **Resources needed to start-up a ESCo contract**
 - Knowledge and experience about this type of contracts (One-Stop-Shop)
 - Support in the verification of the works done and monitoring during the life of the contract
- **Time** to start a contract is relatively short, mostly depending on:
 - Time to find an agreement between property owners and the ESCo
 - Technical complexity of the renovation measures

Value Proposition



- **Energy efficiency renovation**
 - usually addressing large buildings and with high energy savings objectives (working on building envelope, windows and energy equipment)
 - high environmental benefits
 - increase of thermal comfort
- No or limited up-front investment cost
- Guarantee of performance/service level (maintenance) over the life of the contract
- Benefits in particular those situations where people are not able to afford the initial investment

Customer Relationships Segments and channels



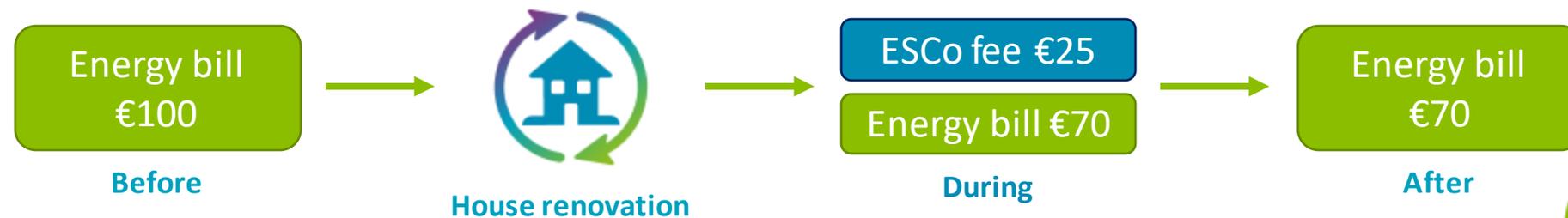
- Our "customers" are the vulnerable households, benefitting from the renovation measures
- Owners of the apartments (if different from the vulnerable households) need to be involved too in the decision-making process
- Customers (and owners) need to be properly engaged through the Local Working Groups in order to explain them the advantages of the initiative
- Technical support should be provided through the OSS or through local sponsors

Cost structure

Revenue stream



- No or limited up-front investment cost
- Monthly fee for a medium-term period (min 10 years) usually lower than historical cost for energy supply
- Immediate energy saving – according to contractual clauses
- ESCo could also be a utility and may offer a service fee included in the energy supply bill (e.g. RenOnBill scheme)
- Cost reduction (economic savings) is limited during the contract period while it's higher after the end of the contract
- This model performs better if public incentives are available for the ESCo



Sustainable development goals

The proposed business model not only pursue his major aim of tackling energy poverty, but also contributes to the achievement of the Sustainable development goals provided by the United Nations



Reduce (energy) poverty

Contribution



Ensure access to affordable, reliable, sustainable and modern energy for all

Contribution



Make cities and human settlements inclusive, safe, resilient and sustainable

Contribution



Take urgent action to combat climate change and its impacts

Contribution



<p>Key Partners </p> <p>Households</p> <p>Property owners</p> <p>ESCOs</p> <p>Utilities</p> <p>Building managers</p> <p>Sponsor/Guarantor</p>	<p>Key Activities </p> <p>Energy audit on the buildings with identification of renovation measures</p> <p>Agreement between building owners/tenants and ESCo</p> <p>Subscription of the contract</p>	<p>Value Propositions </p> <p>Energy efficiency renovation of building</p> <p>No or limited up-front investment cost</p> <p>Guarantee of performance and maintenance over time</p>	<p>Customer Relationships </p> <p>Strong engagement of tenants</p> <p>Commitment of landlords</p> <p>Establishment of trust between partners</p>	<p>Customer Segments </p> <p>Landlords</p> <p>Tenants (also in large social housing buildings)</p>
<p>Key Resources </p> <p>Knowledge and experience with ESCo contracts</p> <p>Facilitator between ESCo and building owners/tenants</p>		<p>Channels </p> <p>Local Working Groups</p> <p>One-Stop-Shops</p> <p>Building managers as reference for all tenants</p>		
<p>Cost Structure </p> <p>No up-front investment cost</p> <p>ESCO fees are paid through the savings achieved</p>			<p>Revenue Streams </p> <p>If the ESCo fee is lower than the energy savings, then there is a net economic saving for the household</p> <p>Self-produced energy from PV could be an additional saving</p> <p>All energy savings become economic savings after the end of the contract</p>	

This BM contributes to the following SDGs



Business Model SWOT Analysis

STRENGTH

- No or limited up-front investment
- (small) immediate savings
- Integration of energy efficiency and renewables
- Increase indoor comfort

OPPORTUNITIES

- In case of high or increasing energy prices, BM becomes come convenient
- ESCo are starting offering service to private market
- Several variants of business model suit different context
- Suitable for large social housing buildings

WEAKNESSES

- Low credit-worthiness of energy-poor households
- Need for guarantee from third-party
- ESCo usually look at large scale projects

THREATS

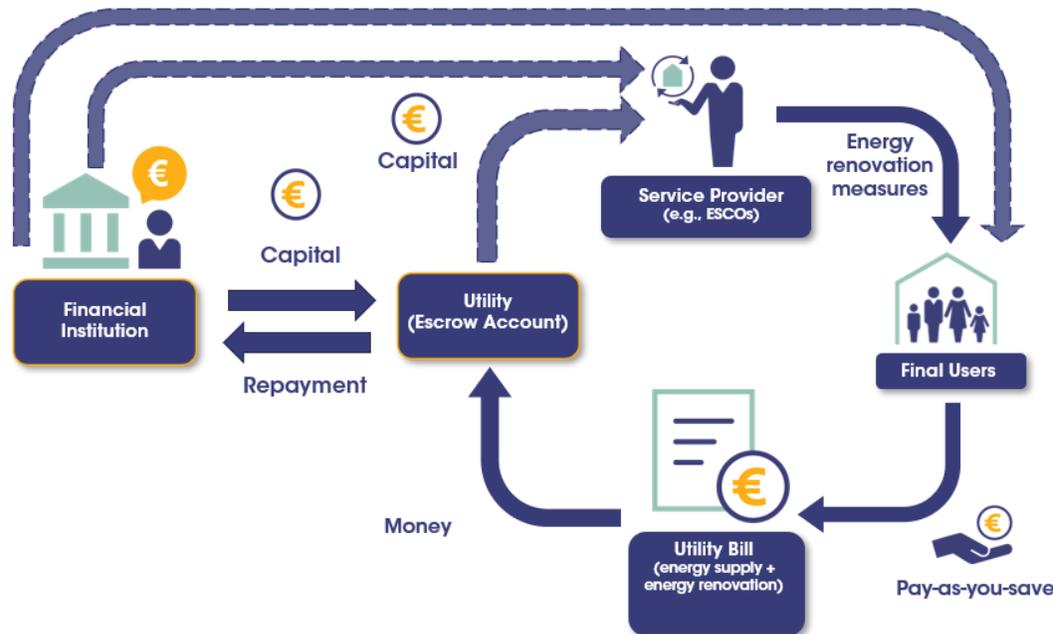
- Landlord-tenant divide problem
- Decision-making process in multi family buildings

Ren-on-Bill Project



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 847056

- Ren-on-Bill project aims to scale up investments towards deep ERs of residential buildings, while promoting the development and implementation of **on-bill schemes** based on cooperation with the financial institutions accepting **repayment by drawing on utility bills**
- On-bill schemes bring the **up-front costs of energy efficiency upgrades down to zero** by adding a periodical line item to a customer's utility bill, which represents an advantage for end-users



- Several variants of the Business Model are explored
- The BM needs the involvement of Utilities (and banks)
- Credit risk represents a major issue

Source: RenOnBill Project – D5.1 – On-Bill business model development guidelines

FinEERGo-Dom Project

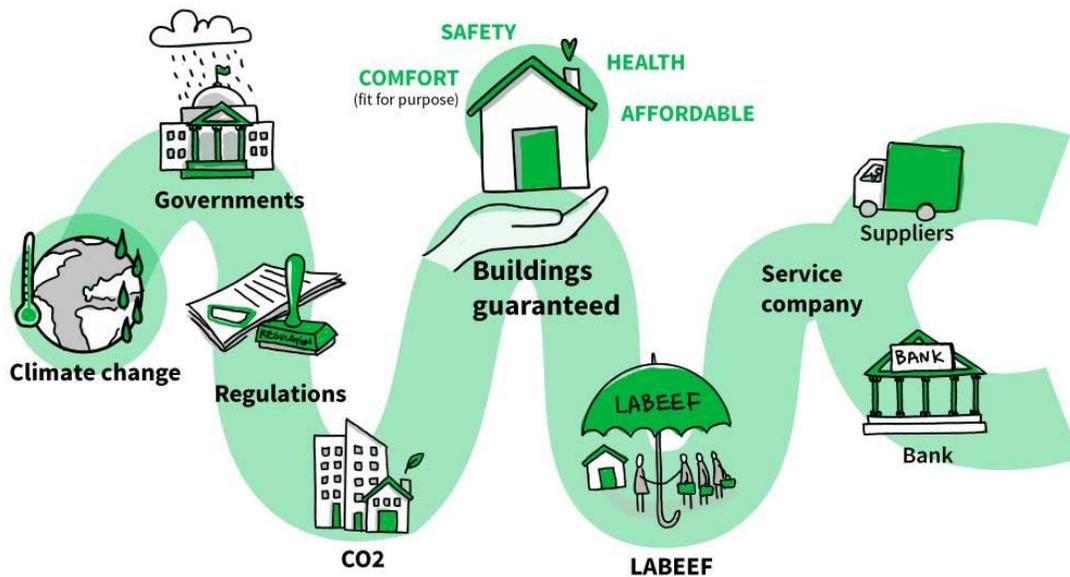


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 847059

- The project implements **guaranteed financing schemes** for energy efficiency and renewable energy in deep renovations of buildings in Poland, Austria, Slovakia, Romania, and Bulgaria
- The project builds on the experience of the Latvian Building Energy Efficiency Facility (LABEEF), the original Building Energy Efficiency (BEEF) Facility deployed successfully in Latvia. LABEEF is based on an existing example providing 20-year Guaranteed Performance contracts to owners through an On-Bill payment scheme.

➔ The Polish pilot provides 20-year guaranteed performance contracts to building owners through an on-bill payment scheme. The loan is repaid over time through an additional charge on the monthly utility bill¹

➔ In Poland, the National Fund for Environmental Protection and Water Management launched the **Energy Performance Contracting Plus (EPC+)** priority programme

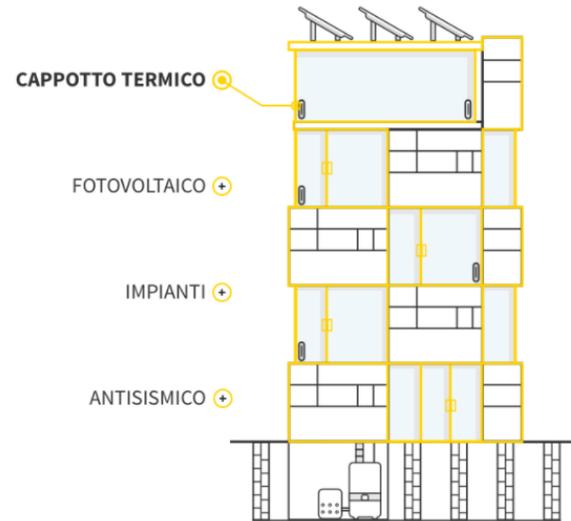


Italian ESCo working on large buildings



Cappotto Mio

Solutions for Multi Family Buildings
Leveraging on public incentives



Source: eniplenitude.com



Vivi Meglio

Solutions for Multi Family Buildings
Leveraging on public incentives



Source: enelx.com

Luminus solutions: Foyer Anderlechtois



- Foyer Anderlechtois is a large social housing company in the Bruxelles area
- To renovate their buildings and guarantee the maintenance, Foyer Anderlechtois signed an EPC contract with Luminus Solutions. The contract includes:
 - Complete remake of 45 heating systems
 - Integration of 17 cogeneration plants
 - Centralized systems for telecontrol
 - Installation of solar panels
 - 12 years warranty on the performance
- The up-front investment cost of €6mIn was entirely covered by Luminus
- Tenants had a saving on bills and increase indoor comfort



Source: luminussolutions.be

Conclusion and analysis

Legal Complexity



Set-up Complexity



Management Complexity



Replicability



Effectiveness towards energy poverty



Scalability





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innovation
in the energy
market





Technology Leasing

Business model based on technology leasing

Sinloc SPA

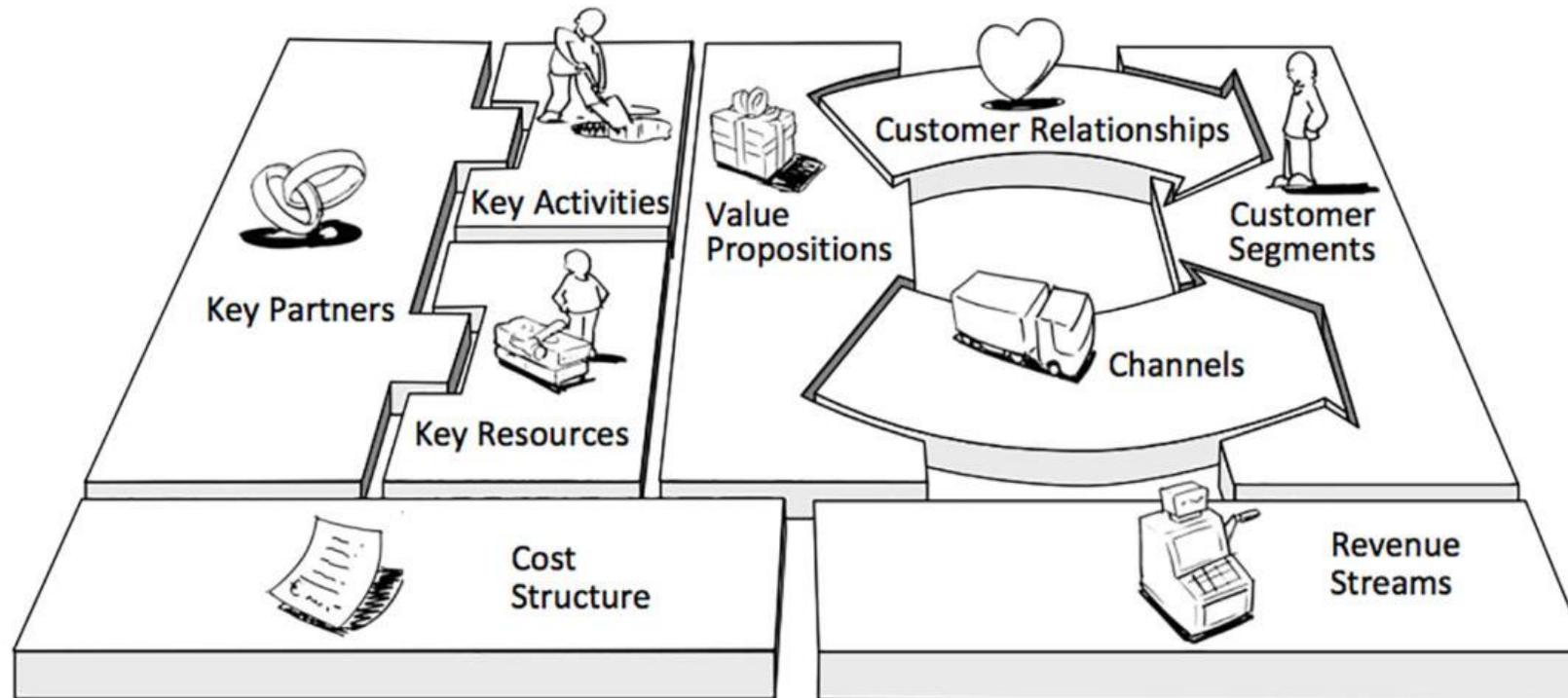


This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant agreement No. 101033940

Description of the model

- The model is about renting/leasing of energy efficient appliances and technology equipment in a **product-as-a-service** scheme
- In this scheme, there is an **aggregator** subject that buys stock of appliances from a manufacturer at a convenient price and rents them to the households
- The aggregator also offers **warranty and maintenance** on the appliances for the whole lifetime of the contract
- At the end of the contract, the appliances can be retained by the household, or they can be returned to the aggregator for reuse, refurbishment or recycling of its component, following a circular economy principle.

Business Model Canvas



Key partners



- **Households:** users of the technology equipment
- **Technology suppliers**
 - Offering their products, providing full-service installation
 - Providing technical assistance during the product lifetime
- **Bank/Leasing company:** Buy the appliances and lease it to the user
- **Aggregator:** Buy the appliances and rent is to the users
- **End-life manager/Recycler:** Collects the appliances after its lifecycle to:
 - Reuse it in another context
 - Refurbish and resell the renovated appliance
 - Recycle the whole product or its parts

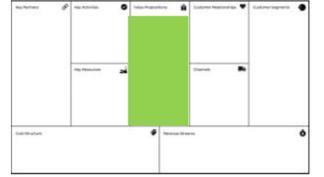


Key activities – Key resources/Time



- Definition of an agreement with a technology supplier that can provide a stock of energy efficient appliances at a fair price
- Definition of an agreement with an end-of-life manager/recycling center
- Identification of an **aggregator**, which buys the stock of appliances and signs the contract with the household, providing installation and maintenance
- Possible subsidies provided by public authorities/NGOs to contribute to renting costs
- **Time** to start the model is relatively long, as there is the need to involve several different stakeholders and agree upon the business model and economics of the business model

Value Proposition



- Make **energy efficient appliances affordable** for vulnerable households
- Support the reduction of energy consumption and energy bills for households
- Increase the quality of life of the households/users of the appliances
- Provide adequate maintenance of the appliances, increasing lifetime and safety
- Contribute to the application of circular economy principles



Customer Relationships Segments and channels



- Our "customers" are the vulnerable households, benefitting from the advantages brought by the innovative scheme
- Households need to be properly engaged through the Local Working Groups which would explain the advantages of the initiative
- Households need to understand the advantage of renting instead of buying, meaning that **consumption habits need to be changed**
- Technical support should be provided by the Municipality, by a facilitator or the One-Stop-Shop
- This business model could be integrated in others (e.g. energy cooperative or ESCo) if these subject could act as aggregators

Cost structure

Revenue stream



- No up-front investment cost to buy the appliances
- Monthly fee for a short-term period (5 to 10 years) at affordable and convenient rates compared to the market
- Immediate energy saving, thanks to the efficiency of the new appliances
- Monthly fee also includes warranty and maintenance on the appliances
- This model performs better if public incentives are available to buy new appliances (e.g. “ecobonus” in Italy)

Sustainable Development Goals



The proposed business model not only pursue its major aim of tackling energy poverty, but also contributes to the achievement of the Sustainable development goals provided by the United Nations



End poverty in all its forms everywhere

Contribution



Make cities and human settlements inclusive, safe, resilient and sustainable

Contribution



Favors circular through reuse and refurbishment of appliances

Contribution



Take urgent action to combat climate change and its impacts

Contribution



<p>Key Partners </p> <ul style="list-style-type: none"> Households Technology suppliers Bank/Leasing company Aggregator End-life manager/Recycler 	<p>Key Activities </p> <p>Identifying the following:</p> <ul style="list-style-type: none"> A technology supplier to provide energy efficient appliances at a fair price End-of-life recycling center An aggregator 	<p>Value Propositions </p> <ul style="list-style-type: none"> Make energy efficient appliances affordable for vulnerable households Support the reduction of energy consumption and energy bills for households Increase the quality of life of the households/users of the appliances Provide adequate maintenance of the appliances, increasing lifetime and safety Contribute to the application of circular economy principles 	<p>Customer Relationships </p> <ul style="list-style-type: none"> Households need to be properly engaged through the Local Working Groups to explain them the advantages of the initiative Households need to understand the advantage of renting instead of buying, 	<p>Customer Segments </p> <p>The vulnerable households, benefitting from the advantages brought by the innovative scheme</p>
<p>Key Resources </p> <ul style="list-style-type: none"> Subsidies to buy the appliances or contribute to the cost of the rent Investor/manufacturing company putting their appliances in use 		<p>Channels </p> <p>Technical support should be provided by the Municipality, by a facilitator or the One-Stop-Shop</p>		
<p>Cost Structure </p> <ul style="list-style-type: none"> No up-front investment cost to buy the appliances Monthly fee for a short-term period (5 to 10 years) at affordable and convenient rates compared to the market 			<p>Revenue Streams </p> <ul style="list-style-type: none"> Energy saving, thanks to the efficiency of the new appliances Monthly fee also includes warranty and maintenance on the appliances 	

This BM contributes to the following SDGs



Business Model SWOT Analysis

STRENGTH

Easy to apply once agreements between stakeholders are set

Best suitable for social housing dwelling where tenants change frequently

Includes maintenance, favors circular economy

OPPORTUNITIES

Combination with public incentives (if available)

Market for product-as-a-service is strongly increasing

WEAKNESSES

Needs strong initial effort to setup the agreements

Credit risk of vulnerable households (need for a guarantee by a third-party)

Needs a strong behavioral change in consuming habits

THREATS

Change in incentives legislation

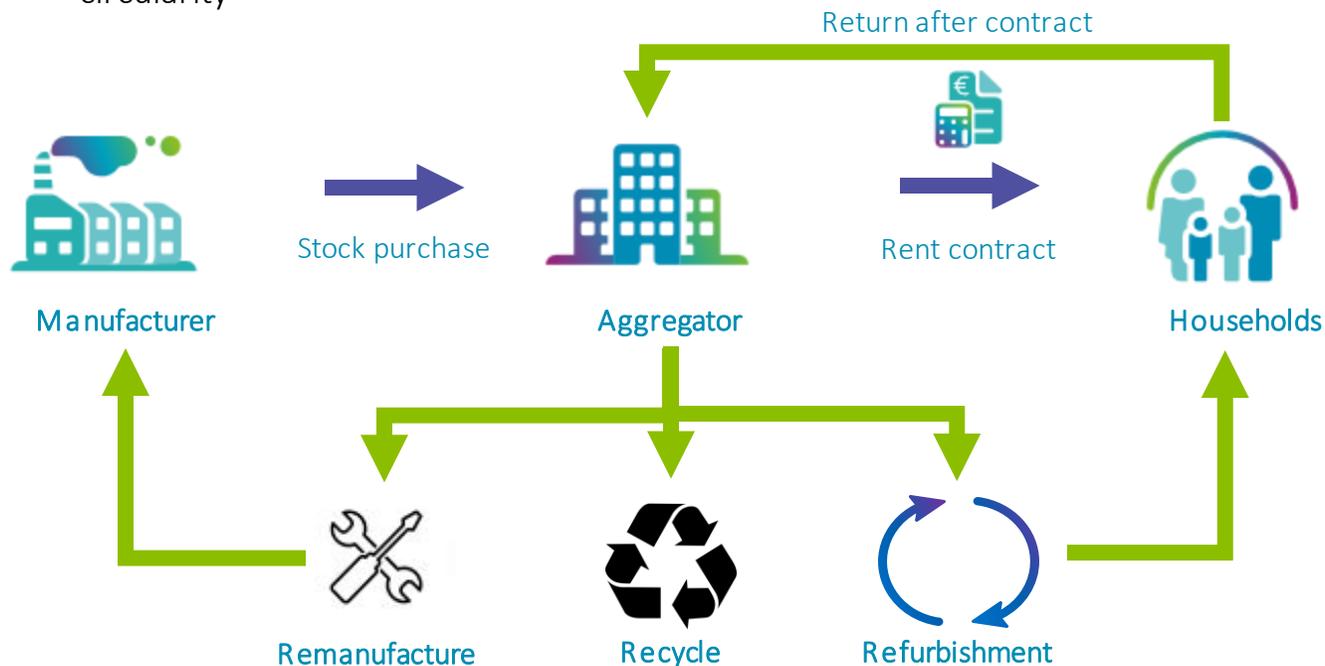
Offer needs to be economically convenient compared to consumer credit offers (also made by the retailer)

ClimateKIC – Circular Housing Project



The objective of the "Circular Housing" project is the definition of a new business model to be applied within in the apartment for lease

- investigation of the possibility to offer furniture and electric appliances fully circular (reusable, refurbishable, recyclable) to tenants at a fair monthly rate
- definition and implementation of a deep behavioral and market change
- redesign the economic systems around these products avoiding waste generation and promoting behaviors that embrace circularity



Project tested on Social Housing dwellings in Milan
Partners involved:

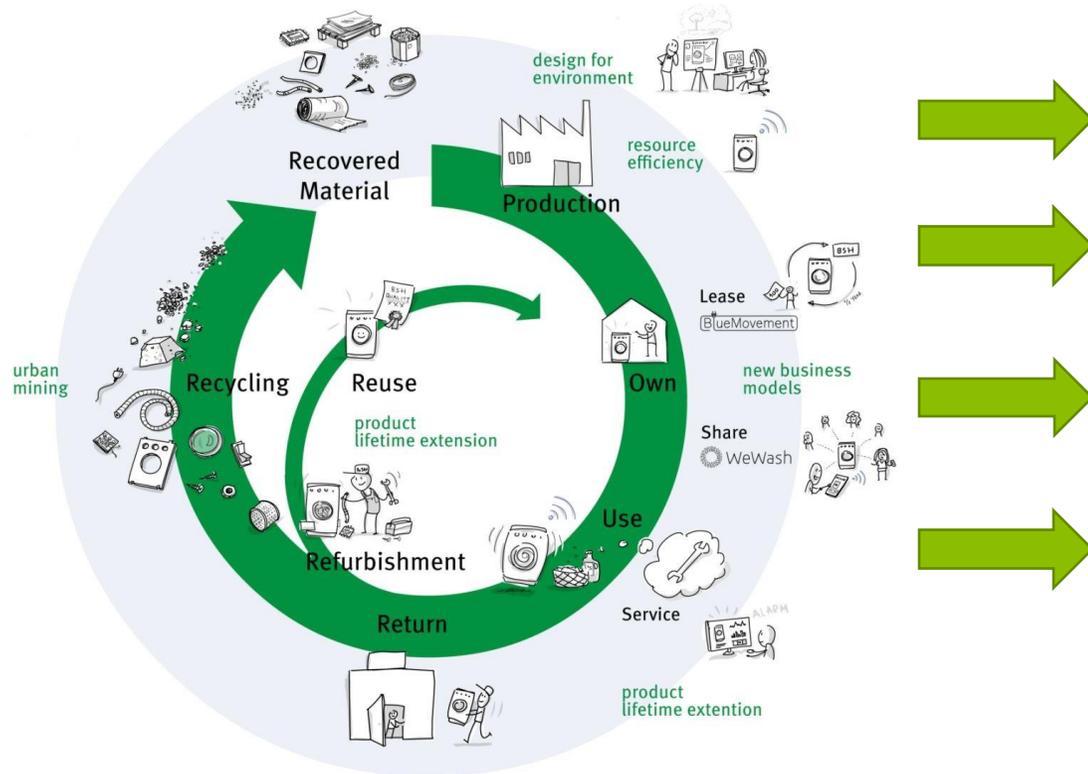
- **RedoSGR**: Social Housing investment fund
- **Politecnico di Milano**: University studying the applicable business models
- **Ecodom**: Italian consortium for recovery and recycling of electric appliances
- **Bosch**: technology manufacturer involved in the project as provider of the appliances

Source: Poliedra – Nuovi modelli per l'abitare sostenibile: il progetto Climate KIC Circular Housing

The Papillon Project



The Papillon Project is an appliance-as-a-service joint initiative from Bosch and social enterprise "Samenlevingsopbouw West-Vlaanderen" (community building Flanders). This initiative was conceptualised to address the ongoing energy poverty crisis that affects low-income households. With this initiative, users can access energy-efficient household appliances at an affordable monthly rental cost. The appliances will be used for up to 10 years then refurbished to be reused extending product lifetime



Offers energy efficient appliances with monthly rates

The user doesn't have to pay in advance and can benefit from the services

Their model benefits the energy poverty households

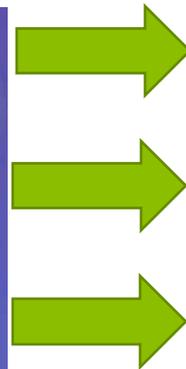
Delivery, replacement, maintenance costs are included in the contract (set for 10 years)

Homie Pay-Per-Use



HOMIE offers a pay per use solution for energy efficient home appliances as an alternative to buying them. The company's goal is not only to provide energy saving solutions but to engage users in utilizing the appliances in the most efficient way.

A digital tracker is built into the appliances which provides up-to-date information about the customer's use and allows the user to calculate the right fee. Based on this data, Homie also provides personalised tips and tricks to become more environmental-friendly, and help their consumers save more money by lowering their water and electricity usage.



The company's model is largely focused on paying per use – the cost of the appliance gets paid back over a certain number of uses.

No need to advance money subscribers only start paying when they use the machine.

They provide flexible subscription from 6 months for expats. They move the appliances to new addresses and take on installation, maintenances, replacement if defected

Not only washing machines
Big and small home appliances (from fridges and dryers to vacuum cleaners etc.)



Dauvister leasing energy efficient heaters



Dauvister offers leasing contracts for energy efficient heaters. With a monthly subscription the company offers new, and energy efficient heaters and it handles the installation, maintenance and any malfunction. The offers run for ten years, and they estimate energy saving up to 33%.

Energy efficient heaters are expensive, this service upgrades the heating system and removes old and very polluting heaters from the city. It offers immediate solution to buildings without requesting an upfront investment and the package includes annual maintenance costs.

The company provides subscribers with information and helps them get access to subsidies offered by the region and the city to reduce energy consumption and replace old polluting heaters.



The service provided to the subscribers offers heaters that run on gas, nevertheless the company is aiming at extending this model to include services of providing and installing heat pumps and PV panels



The target group is not specifically poor households, but this model can be used in combination with subsidies or other tools to help lowering the monthly subscription fees when possible.



This model benefits the landlords and not the tenants



Conclusion and analysis

Legal Complexity



Set-up Complexity



Management Complexity



Replicability



Effectiveness towards energy poverty



Scalability





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Energy Cooperative

Business model based on Energy Cooperative

Sinloc SPA



This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant agreement No. 101033940

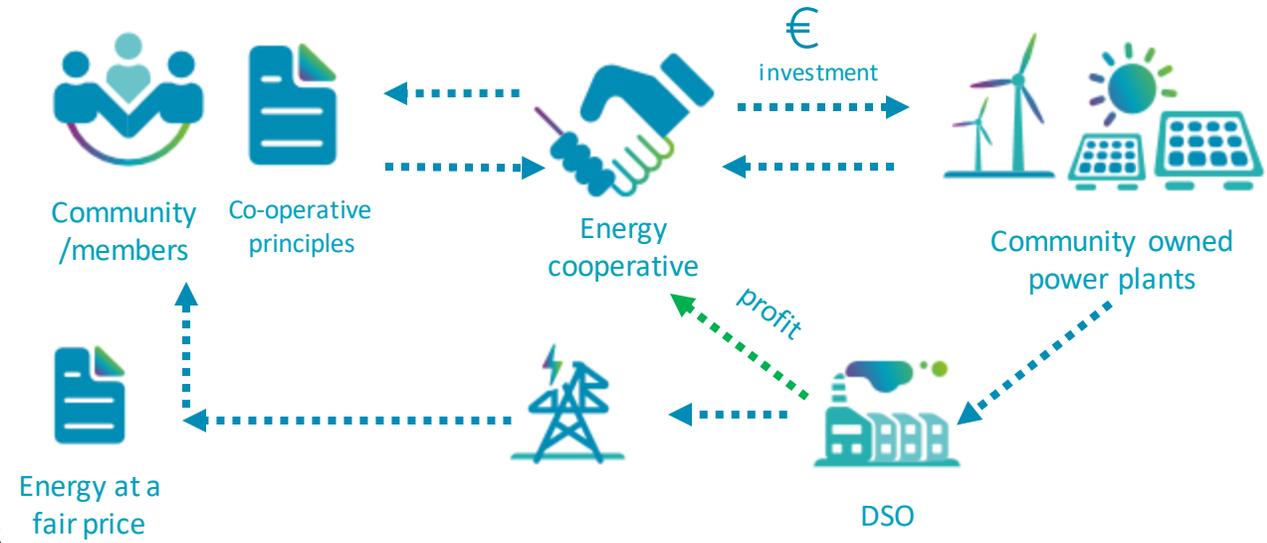
Description of the model

- This model is about setting up a legal entity to manage the energy produced from communally owned power plants and or the surplus of energy produced by the members/ shareholders
- It provides access to green locally produced energy at fair and stable prices for its members and invests the profit in further energy production, energy efficiency and projects of local development
- Requires an upfront investment to build the RES plant
- Generally, requires a subscription fee to join the cooperative

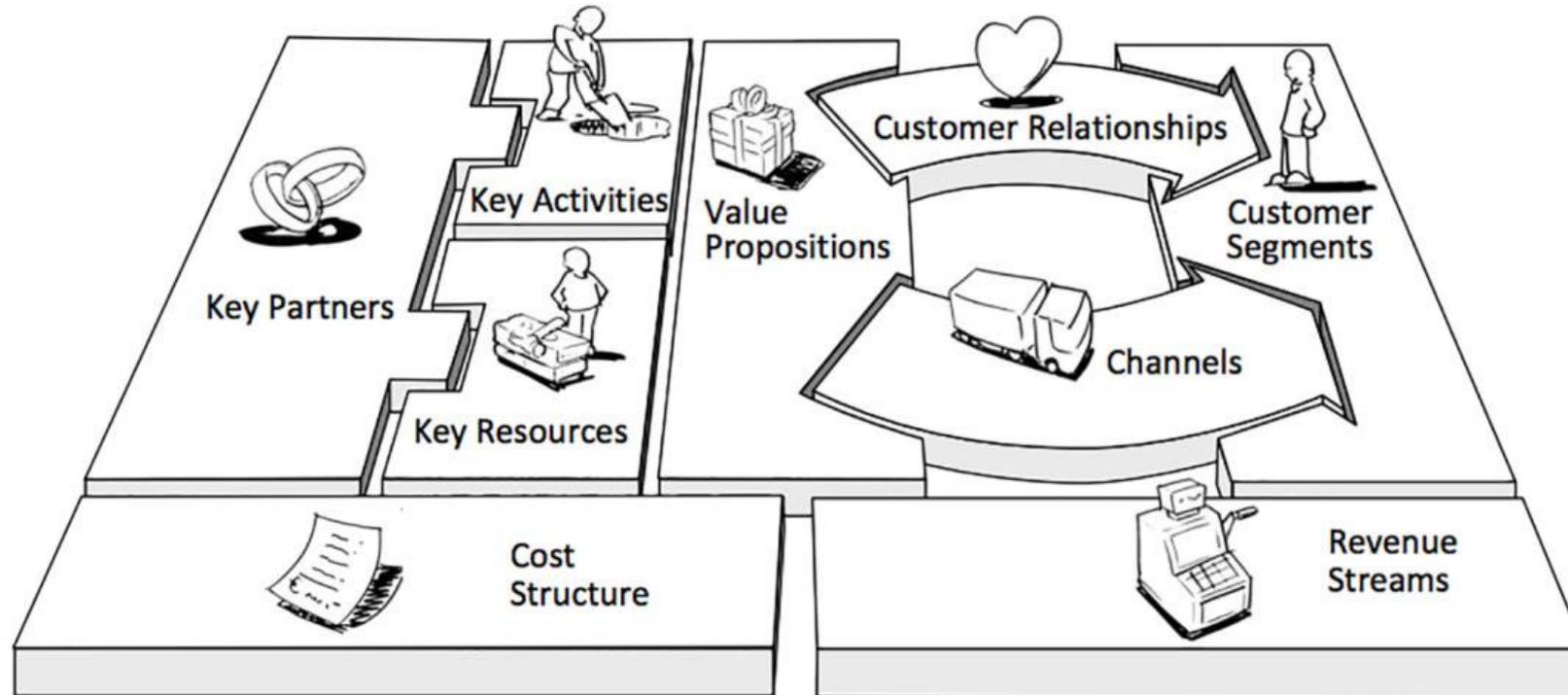


Description of the model

- Energy cooperative manages the community owned power plant (windmill, solar panels etc.), including maintenance and provides technical assistance to subscribers
- Sells the energy produced at a fair price to its members;
- Manages the surplus of energy production and actively invests in new clean energy resources;
- Manages membership to make sure cost of energy is stable;
- Designs and implements projects of energy efficiency, social inclusion like fighting energy poverty
- Contributes to lowering CO2 emissions



Business Model Canvas



Key partners



- **Members:** shareholders, subscribers of the service provided by the cooperative (households, businesses, PA etc.)
- **Financing organization:** Donor, crowdfunding tool, bank etc.
 - To provide tools to access and raise funding to purchase energy plants
 - Entity to manage resources and costs
 - Entity that buys (pre-finances) cooperative shares and donates them to EP households
- **Technology suppliers:**
 - Suppliers of energy plants and equipment
 - Installation, management and maintenance of the plants
 - Installation of monitoring systems at the consumer end
- **DSO and grid:** buy surplus energy and manages the distribution



Key activities



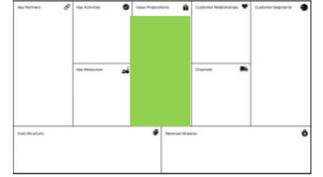
- **Generate Energy**
 - It generates electricity from local renewable energy power plants
- **Sell the produced energy at fair price to the members**
 - Members of the cooperative benefit from a special energy tariff and the guarantee of green origin
- **Management of daily operations and subscription of members**
 - Manage and troubleshoots technical, admin, payments and financial issues
 - Managing membership, subscriptions
- **Invest in projects of local development and new power plants**
 - Reinvest money coming from subscriptions and the revenues from the sale of energy to setup new renewable energy plants
 - Reinvest the profit to offer services of the community, including projects to fight energy poverty and reduce energy consumption (i.e. by providing energy efficiency solutions to its subscribers and limiting the number of members/consumers)

Key resources and Time



- **Resources to start the energy cooperative:**
 - Financial resources to purchase the energy plant and relevant technology installations
 - Technical, administrative and legal expertise to set up the cooperative and hire personnel
- **Resources to operate and manage the energy cooperative:**
 - Administrative personnel
 - Qualified technical personnel to manage the RES production
 - Financial provision to cover working capital
- **Time:** to set up and start is relatively long it varies depends on the following:
 - Legal issues: Flexibility of regulations to set up the entity
 - Budget: if there is a grant to fund the power plant or the community has the raise the funding
 - Availability of staff: qualified personnel to set up and run the cooperative
 - Availability of interested community of investors (subscribers/members)
 - Technical complexity

Value Proposition



- **Increase production of Renewable Energy:**
 - Investment in producing RE including new sites for renewable energy production
 - Contribution to reaching renewable energy targets and lowering CO2 emissions
- **Providing green energy at stable (fair) prices**
 - Energy prices are linked to (lowest) the market prices of energy and are calculated as to cover the actual cost of production for the cooperative
 - Reduction in energy costs by providing energy efficiency projects to its members
- **Subscribers are owners and decision makers**
 - Members can decide their preferred source of energy, how to handle the profit generated and what kind of projects they want to invest in
 - Profit could be used to assist poor households in reducing energy consumption and grant them access to affordable green energy

Customer Relationships Segments and channels



- Customers are the members of the cooperative who subscribe to the services by buying shares in the cooperative. And they can be beneficiaries of services provided by the cooperative through shares financed by other parties (NGOs, social services, etc.)
- Members can reach the cooperative through different channels
 - Interested members or investors:
 - Cooperative's office or website, platform (depending on offered tools)
 - Offices/website of the city (One Stop Shop)
 - Through communication campaign
 - Energy poor households:
 - Social services or equivalent
 - NGOs and charities

Cost structure

Revenue stream



Cost Structure:

- Initial investment cost of the power plant and relevant technology (wind turbine, PV plants, smart meters etc.)
- Cost of setting up the cooperative (legal and admin cost)
- Management and technical staff as well as daily operations costs
- Marketing campaigns to engage customers

Revenue Streams:

- Sales of energy to the members of the cooperative
- Sales of surplus energy to the grid
- (indirect) energy and economic savings for the households thanks to the improvement of energy efficiency through services provided by the cooperative

Sustainable development goals



The proposed business model not only pursue his major aim of tackling energy poverty, but also contributes to the achievement of the Sustainable development goals provided by the United Nations



Fights Energy Poverty

Contribution



Contributes to inclusive, sustainable, neighbourhoods & cities

Contribution



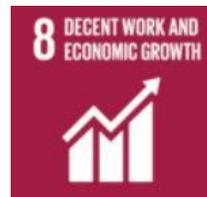
Ensures access to affordable, reliable, sustainable & modern Energy for all

Contribution



Reduces CO2 emissions and air pollution

Contribution



Provides new decent jobs

Contribution



<p>Key Partners </p> <ul style="list-style-type: none"> Members: shareholders, subscribers of the service provided by the cooperative (households, businesses, PA etc.) Financing organization: Donor, crowdfunding tool, bank etc. Technology suppliers: DSO and grid 	<p>Key Activities </p> <ul style="list-style-type: none"> Energy production Selling the produced energy at fair price: Management of daily operations and subscription of members Investing in projects of local development and new power plants 	<p>Value Propositions </p> <ul style="list-style-type: none"> Increased production of Renewable Energy Providing green energy at stable prices Subscribers are owners and decision makers 	<p>Customer Relationships </p> <ul style="list-style-type: none"> Customers are shareholders and members they take part in decision making and should be informed and updated. 	<p>Customer Segments </p> <p>Customers are the members of the cooperative who subscribe to the services by buying shares in the cooperative. (citizens, SMEs, PA, etc.)</p> <p>And they can be beneficiaries of services provided by the cooperative through shares financed by other parties (NGOs, social services, etc.)</p>
<p>Key Resources </p> <ul style="list-style-type: none"> Budget to purchase the energy plant and relevant technology installations Technical, administrative and legal expertise to set up the cooperative Qualified staff for management 		<p>Channels </p> <p>Interested members or investors:</p> <ul style="list-style-type: none"> Cooperative's office or website, platform (depending on offered tools) Offices/website of the city (One Stop Shop) Through communication campaign <p>Energy poor households:</p> <ul style="list-style-type: none"> Social services or equivalent NGOs and charities 		

<p>Cost Structure </p> <ul style="list-style-type: none"> Cost of the power plant and relevant technology (wind turbine, PV plants, smart meters etc.) Cost of setting up the cooperative (legal and admin cost) Management and technical staff as well as daily operations costs Marketing campaigns

<p>Revenue Streams </p> <ul style="list-style-type: none"> Energy sales to subscribers at fixed cost Saving energy by improving energy efficiency of member's households Surplus energy sales to the grid
--



Business Model SWOT Analysis

STRENGTH

Generates revenue that stays in the community
Provides affordable access to local Renewable Energy
Creates jobs
Long term solution and financially sustainable
Provides a solution to poor households

OPPORTUNITIES

Leverage Private capital for Energy projects
Creates opportunity for technically skilled members to volunteer
Model can be used everywhere with any RE plant
Can cater to energy communities

WEAKNESSES

Raising the initial capital can be challenging
Its running costs are high
It takes time to set up
Expansion requires further investment

THREATS

Regulation changes
Market prices
Credit risk of vulnerable houses
Energy produced might be insufficient, which requires buying energy from the market at higher prices

The first not-for-profit and democratic RES electricity supplier in Italy



Founded in 2014, the cooperative aims at enhancing the number of renewables on the global production and consumption and reducing waste of energy. Moreover, they strive to providing 100% green energy from sustainable energy plants and with direct participation/investment of the citizen.



Developed an assessment tool (sustainability matrix) to make sure the RE plants they work with adhere to a certain criteria to avoid bare green washing practice and to favour collective and socially accepted RE plants



They use the collective capital to further invest in new RES. Besides providing green energy, they perform energy efficiency projects, provide services and information to set up energy communities, and work with PA on projects to fight poverty energy through Energy communities



The cooperative invests/buys energy from 35 power plants all over the country

Som Energia



A not-for-profit green energy cooperative from Catalunya



It started in 2011 in Catalunya by selling energy to its members from RES, while investing in its own energy plants. Now it has projects all over Spain. Produces and commercialises 100% clean energy from RES hydroelectric, solar, biomass and wind power

Right for energy and fighting energy poverty:

- Dedicate part of the voluntary donation to actions to fight energy poverty in collaboration with entities at a local level
- Each member can share his/her membership with 5 people, giving access to lower income households to have access to energy without paying 100 € membership
- They apply the principles of the Catalan law 24/2015 to all Spanish territory to protect vulnerable households from being subject to energy supply cut off
- Sign agreements with the social services of the municipalities and work with them to: 1) train personnel on energy efficiency and energy poverty issues; 2) finding solutions to prevent energy supply cut off to vulnerable households.

Production



Auto-production

Collective PV
Assistance in
process



Social capital

Voluntary
contribution to
social capital for
RE projects

Commercialising

Managing electricity consumed by members and produced by power plants..



81.540 members

24,60GWh/year

47 employee

They buy the rest of the energy from certified green energy producers.

Sustainability of the business model

- Services and communication are mainly online
- Energy efficiency training and audit services to public and private entities
- Modest overhead costs (office rent and management salaries)
- Use the local groups as focal points for interested members
- Provide services to members via collaborations with other social business

Grunneger Power



Generating green energy and contributing to sustainability in NL

The cooperative supplies green energy produced by residents of Groningen and its neighbouring villages at affordable prices. The cooperative works closely with the municipality, the first financial investment of 200.000 Euro was pre-financed (loan) by the city.

The profit is invested in implementing several sustainable energy projects in the area focusing on creating jobs and contributing to local economy. It established several energy projects like installing more than 7,700 solar panels using funds from the municipality, crowdfunding, strategic marketing techniques

Offers its members collective purchasing actions, access to trainings on energy efficiency, entrepreneurial skills, events and independent advice. It also enables rental and installation of solar panels, and electric car sharing. All members have a say in the running of the co-operative.

The co-operative offers green energy contracts, selling generated energy via the company 'Energie VanOns',.



Membership is for free.

Members can decide to contribute financially if they wish. Service should be available to all citizens of Groningen.

Ecopower



Cooperative producer and supplier of renewable energy in Belgium

The mission is to develop a democratic, decentralized and sustainable energy system. Ecopower cooperatives are around 64.114 cooperative producing green local energy for a healthy climate.

- 1) To invest in renewable energy: profit from energy sold is invested in new power plants; strong communication campaigns to involve more members
- 2) To supply 100% green electricity to its members, consumers must be members
- 3) To promote a rational use of energy: co-founded EnergieID , a smart measurement aid enables members to easily keep track of their consumption and compare themselves to others.

Alliances with other cooperatives, cities and initiatives to achieve its goals, provide more information and innovative solutions

Vision is an Energy union with citizens are at its core, where citizens take ownership of the energy transition, benefit from new technologies to reduce their bills, participate actively in the market and where vulnerable consumers are protected

- All cooperatives jointly own all Ecopower installations
- An Ecopower share costs 250 euros and keeps its value
- There are no entry or exit fees
- A share is fixed until the third financial year after purchase
- Each shareholder has one vote in the general meeting
- If profits allow, a dividend will be paid, max. 6%
- The number of shares is limited to 20 per person



The greenest kWh
is the kWh
that you do not use.

Energy Saving Tips

Saved more than **65,000 tons of CO2** in 2020

Conclusion and analysis

Legal Complexity



Set up Complexity



Management Complexity



Replicability



Effectiveness towards
energy poverty



Scalability





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We are
the catalyst
for social
innovation
in the energy
market





One Stop Shop

Business model based on One Stop Shop (OSS)

Sinloc SPA



This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant agreement No. 101033940

Description of the model

- This model is about developing and setting up a physical or virtual platform providing information and support on energy efficiency themes
- The objective OSS pursue in their activity is to provide **technical expertise and experience** to help citizen save energy and money on their bills
- OSS activities are usually financed by a Public Authority and may be managed by the Public Authority itself or a private entity
- OSS may provide a wide variety of services, from the simple advisory on how to save on the energy bill up to the technical support for the energy renovation of the buildings

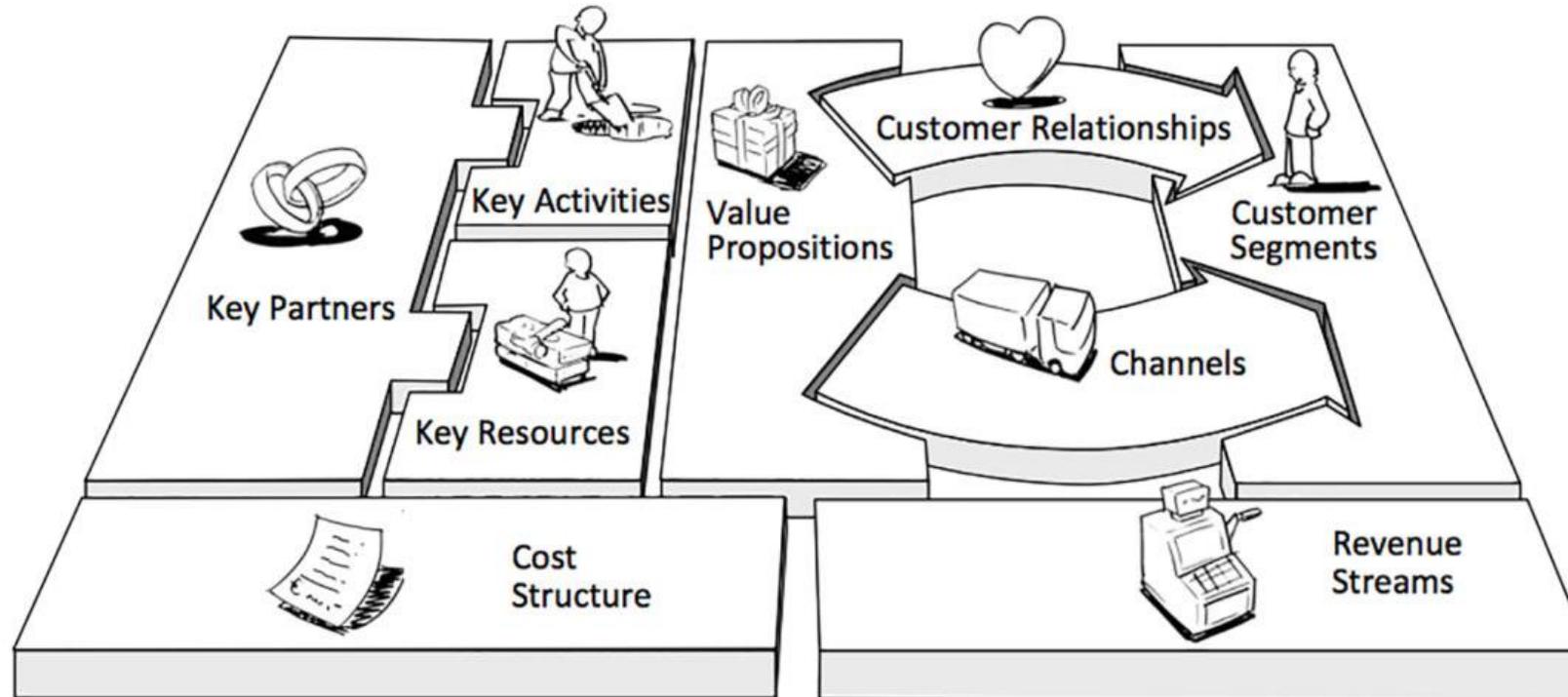


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Business Model Canvas



Key partners



- **Municipality/local government:** main sponsor of the initiative, providing the resources (financial and personnel) for its operation
- **Manager of the OSS:** could be the Municipality itself or another private or public subject in charge of running the OSS
- **Technical partners:** involved through agreements by the OSS to be available to provide services to the households
 - ESCos
 - Renovation suppliers
 - Energy audit providers
 - General contractors
- **Financial partners:** if the OSS also includes financial assistance to the final users
 - Banks
 - Other financial institutions

Key activities



One-Stop-Shops can provide a wide variety of services, with different level of complexity, depending on the availability of budget and resources

- **Providing useful information** to the households, mainly concerning:
 - How to change energy supplier, reducing the cost of the bill
 - Tips and hints to save energy in the domestic life
 - Opportunities from public incentives, financial assistance or energy savings programs
- **Technical / financial assistance** with the involvement of local stakeholders:
 - Energy check or even energy audits, to evaluate the potential energy saving measures
 - Technical assistance for the selection and contracting of an ESCo
 - Financial solutions for the renovation measure (through partner banks)
- **Project Management and monitoring**, at the beginning and during the renovation process to ensure the effectiveness of the solutions provided

Key resources and time



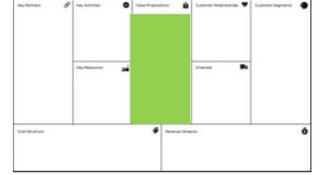
Resources to start and run the OSS:

- Financial resources for setting up the office (including physical space and equipment)
- Technical, administrative and legal expertise
- Strong network of local stakeholders to be involved
- Strong promotional activity to engage vulnerable households

Time to setup a One-Stop-Shop could be relatively **short**, mostly depending on:

- Legal issues: regulations to set up the organization and for the kind of services this type of organization can offer
- Availability of budget: resources that can be employed by the Municipality for the start-up and running of the OSS (financial and personnel)
- Availability of staff: availability of qualified personnel to provide the services

Value Proposition



The OSS creates value for the households by:

- **Directly supporting and helping them** to identify suitable and affordable solutions for the energy poverty issue
- **Raising awareness** concerning the costs and benefit of renovation measures, coupled with a solution to limit or avoid the initial financial investment
- **Simplifying the renovation process**, sometimes perceived as overly complicated by

Indirectly the OSS creates value for the other stakeholders by:

- **Accelerating the renovation process** of the building stock
- **Increasing the market opportunities** for its technical and financial partners



Customer Relationships Segments and channels



For this BM to be effective, vulnerable households must be widely reached through effective campaigns

Depending on the structure of the OSS, several channels can be activated for reaching the final customers:

- **Physical help desk**, allowing for a direct contact with the final user, more effective if the OSS aims at providing advisory services
- **Online**, more cost-effective if the aim is to provide information only
- **Local events** to promote the activities of the OSS

Cost structure

Revenue stream



- **Cost structure**
 - Personnel
 - Physical office
 - Relationship management
 - Promotional activities, campaigns and events
 - Development, operating and maintenance of online platforms
- **Revenue streams, depending on the selected OSS structure**
 - None (all costs are borne by the Municipality)
 - Service fee
 - Brokerage fee
 - Recurring revenue for the financial provider



Sustainable development goals

The proposed business model not only pursue his major aim of tackling energy poverty, but also contributes to the achievement of the Sustainable development goals provided by the United Nations



End poverty in all its forms everywhere



Make cities and human settlements inclusive, safe, resilient and sustainable



Ensure access to affordable, reliable, sustainable and modern energy for all

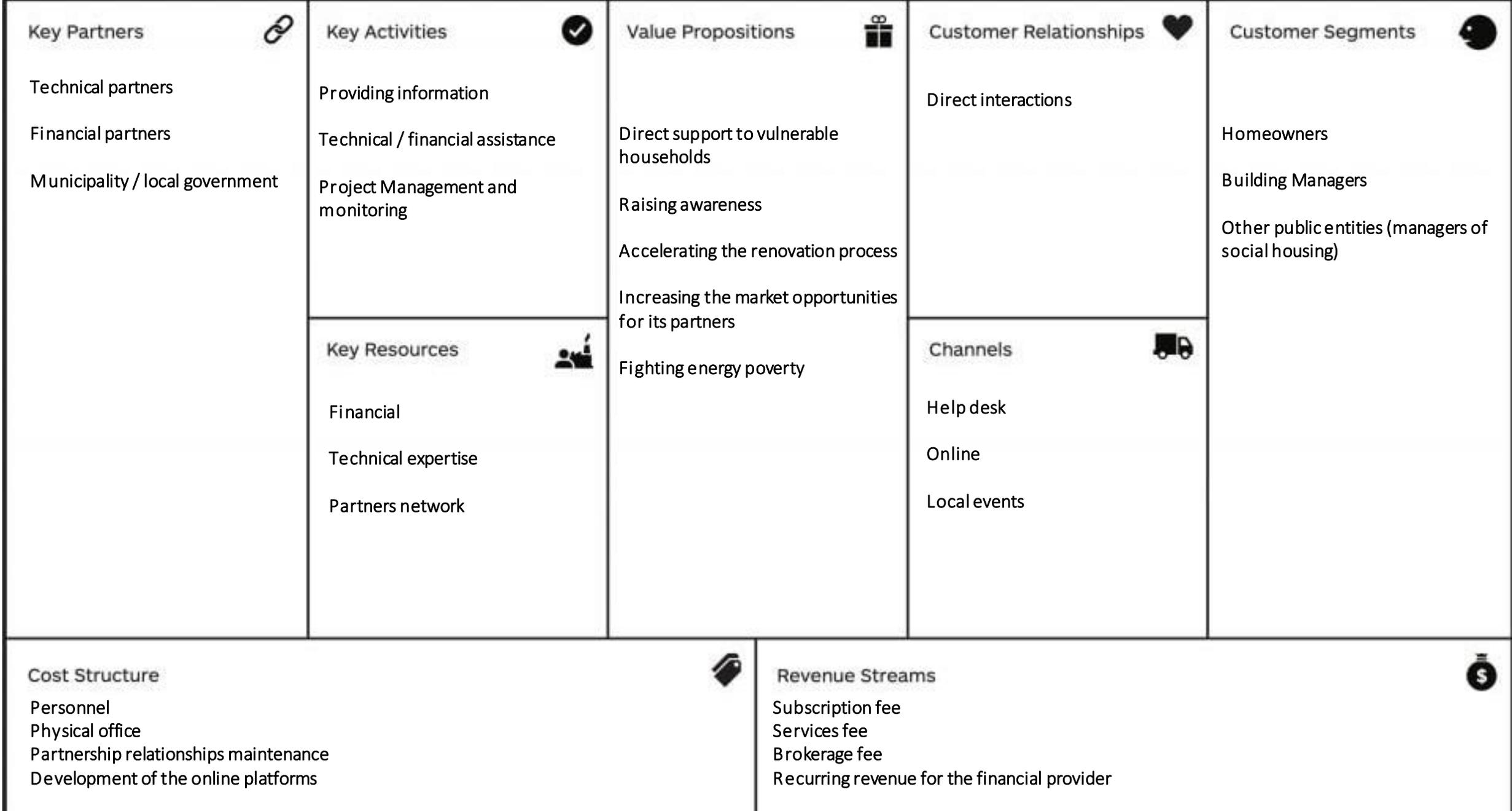


Take urgent action to combat climate change and its impacts

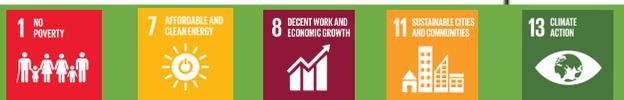


Creation of new jobs and work opportunities at local level





This BM contributes to the following SDGs



Business Model SWOT Analysis

STRENGTH

Provides direct technical support to the final users

Allows the citizen to have a complete overview of the investment

Supports the local economy

OPPORTUNITIES

Supportive policy environment for energy efficiency interventions → Market opportunities

Energy efficiency increases the value of properties

WEAKNESSES

Potentially low willingness to pay for the offered services

Need to ensure economic sustainability to the structure without taxpayers' money

THREATS

Complex procedures and bureaucracy

High up-front costs for home renovation

Potential lack of financial instruments targeting energy poverty

Innovate Project

Business models and examples



Business model	Roles & responsibilities	Practical example of what the one-stop-shop offers to homeowners
Facilitation model	<ul style="list-style-type: none"> ▪ Raise awareness on energy renovation benefits ▪ Provide general information on optimal renovation works ▪ First advice at the 'orientation stage' 	It advises on how to renovate your house and can provide you with the list of suppliers.
Coordination model	<ul style="list-style-type: none"> ▪ Coordinate existing market actors (suppliers) ▪ Make sure all one-stop-shop services are offered to homeowners ▪ No responsibility for the result of renovation works (only overlooking the whole process) ▪ No responsibility for the overall customer journey (just the first part) 	It advises on how to renovate your house and will push suppliers to comply with their promises. Suppliers remain responsible for the final result
All-inclusive model	<ul style="list-style-type: none"> ▪ Offer a full renovation package to homeowners ▪ Bear responsibility for the result of renovation works ▪ Bear responsibility for the overall customer journey 	The one-stop-shop is a contractor that sells you the whole service package and is your main contact point in case something goes wrong with suppliers.
ESCO-type model	<ul style="list-style-type: none"> ▪ Offer a full renovation package with guaranteed energy savings to homeowners ▪ Bear responsibility for the result of renovation works ▪ Bear responsibility for the overall customer journey 	The one-stop-shop sells you the renovation package and guarantees the energy savings for the contract duration. The one-stop-shop is paid through energy savings achieved.

Oficina de l'Energia – Valencia

Physical office, open to public, offering information and consultation on opportunities, incentives, etc. for energy savings and energy efficiency

Also works as an aggregation point for the citizens that want to be part of the energy transition agenda



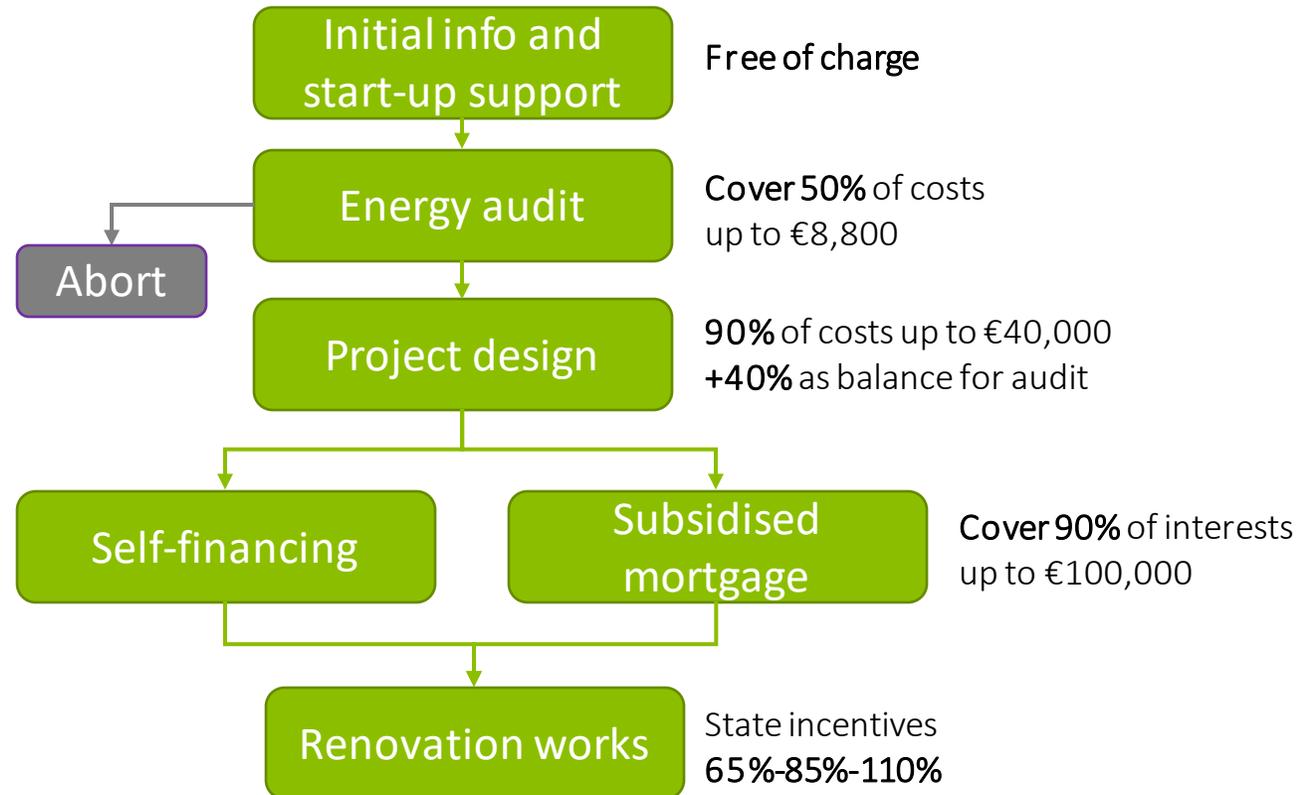
- **RIGHT TO ENERGY:** Support to households that are not able to pay the bills (energy bonus)
- **RENEWABLE ENERGY:** Informative and consultation support on how to install PV plants
- **ENERGY EFFICIENCY:** Informative and consultation about how to save energy and money
- **ENERGY COMMUNITIES:** Information about energy community and support to set-up energy communities
- **ENERGY TRANSITION:** Information about how to contribute to a just and sustainable transition
- **ENERGY BILLS:** Assessment of energy bills and information to optimize the cost of supply



Infoenergia – Province of Trento



Physical office, open to public, and online platform with updated information on opportunities, incentives, etc. for energy efficiency and sustainable mobility



Special initiative for multi-apartment buildings

- 2 or more apartments
- Built before 1992
- Energy savings >30%

WoonWijzerWinkel – Heerlen



- Physical shop, located in Heerlen and serving the 7 Municipalities in the Parkstad Limburg Region
- Run by a private company (franchise of a parent company in Rotterdam)
- Targets single-family houses
- Users pay a fee for the services provided by the OSS
- Additional revenues come from installers who pay a provision for leads
- Directly sells goods, thanks to special deals with manufacturers
- Offer guarantee on services and renovation works

Engagement process	✓
Energy renovation and financial plan	✓
Coordination of the renovation process	✗
Long-term and affordable financing	✗
Guaranteed results & post-work monitoring	✓



SMART CITY Litoměřice



- Public service provided by the Municipality, free of charge (using resources from the city's Energy Savings Fund)
- Provides a first energy evaluation (quick scan) and informs homeowners about potential improvements
- The Municipality develops case studies and organises events to showcase the pilot deep renovation project
- The Municipality organises workshops and individual meetings with homeowners and provides communication materials
- Targets single-family houses and condominiums

Engagement process	✓
Energy renovation and financial plan	✓
Coordination of the renovation process	✓
Long-term and affordable financing	✗
Guaranteed results & post-work monitoring	✗

Conclusion and analysis

Legal Complexity



Set-up Complexity



Management Complexity



Replicability



**Effectiveness towards
energy poverty**



Scalability





www.socialenergyplayers.eu





We are
the catalyst
for social
innovation
in the energy
market

