

RESCOOP 20-20-20

Best practices Report I



RESCOOP 20-20-20



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1. Introduction

1.1. About REScoop 20-20-20

The acronym REScoop stands for “Renewable Energy Sources Cooperative”. It refers to any group of citizens that cooperate in the field of renewable energy, which includes developing new production, selling renewable energy or providing energy related services. Given the presence of this type of initiatives throughout Europe and their potential impact, they are no longer marginal but we can start talking about a movement.

The REScoop 20-20-20 project intends to support all groups, who respect the principles set out in the charter of our project, which you can find on our [website](#).

The REScoop 20-20-20 project was launched in 2012 and is sponsored by the Intelligent Energy Europe programme of the European Commission. The goal of the REScoop 20-20-20 project is to accelerate RES energy production capacity, leveraged by the cooperative model with local citizen involvement.

One of the tasks included in the project is to make a top line inventory of all REScoops in Europe. These REScoops are encouraged to provide a more comprehensive profile, which will be openly accessible through the project website. By doing so existing and new REScoops will be able to connect with each other and exchange knowledge. The database, which continues to grow every day, also facilitates information exchange and demonstrates the social, political and economic power of the REScoop movement in Europe.

In addition to the inventory of REScoops in Europe and the best practice reports, the project carried out specific and in-depth research on business models, community engagement and investment schemes. This research will result in manuals (a toolbox) to help citizens with these critical aspects of creating and managing REScoops.

The twelve partners of the REScoop 20-20-20 project are ALLenergy (United Kingdom), Avanzi (Italy), Cooperatives Europe (EU), Ecopower (Belgium), Elabora/Confcooperative (Italy), Enercoop (France) Energy4all (United Kingdom), EMES European Research Network (EU), EWS (Germany), Middelgrunden (Denmark), ODE-NL (The Netherlands), and REScoop.be (Belgium).

1.2 About the report

The purpose of this report is threefold. To begin with it describes fifteen best practice examples across Europe, providing valuable insights in these best practices for new and existing REScoops. Secondly, it constitutes a base for further research in the REScoop project. This research will focus on best practices and create, amongst other things, standard business and financing models for starting REScoops. Thirdly, the report aims to confirm the importance and effectiveness of REScoops in order to accelerate RES acceptance and installation.

All REScoops presented are pioneers in energy transition and each has its own story. In-depth interviews with all REScoops would provide a more detailed picture. Unfortunately this was not feasible in the limited scope of this project. While this report cannot cover all the details and ideas of all REScoop projects, practitioners are confident that we have captured the essence. The inventory of more than 500 REScoops throughout Europe as well as the database with their profiles on the website of REScoop.eu can be used for future analysis.

1.2.a Best practices selection

In preparation of the work plan for the REScoop 20-20-20 project, the project partners identified several selection criteria for REScoops or REScoop projects for further analysis. These criteria were:

1. Length of time of the authorisation process
2. Involvement of stakeholders and alignment of their interest with the mission of the REScoop
3. Technical and economic sustainability of the REScoop
4. Financing schemes and participation of citizens as shareholders
5. Grid connection and sale of energy

We analysed many REScoops together with our partners, as the local input is key to understanding best practices within specific countries. The REScoops interviewed are not necessarily the 'best' REScoops: they were selected because they fulfilled at least one of the criteria mentioned above. Case studies highlight a specific aspect within a REScoop that we believe to be of extra value to other existing or new REScoops.

1.2.b Research method

Our conclusions are based on interviews with the project leaders of the selected best practice examples. Interviews were conducted on the phone or face to face and lasted about one hour each. Conclusions were substantiated further with examples from secondary literature on REScoops. All twelve partners contributed to finding the REScoops that fit the criteria. It is worth noticing that some partners are actively involved in some of the best case examples which does not constitute a scientific bias since the REScoop 20-20-20 project is an initiative of some experienced and well known REScoops.

1.2.c Mentor group and national workshops

For this report we interviewed fifteen project leaders responsible for selected best practice REScoops who were also to become active in the REScoop 20-20-20 project. The aim is to create a community of "cooperative RES Mentors"; a pan-European network of people able to help starting RES-projects in various European countries.

The REScoop 20-20-20 project will bring mentors together for training sessions in four national workshops (the Netherlands, Italy, Spain and France). The aim is to forge a community of experts that can support groups of citizens to execute RES-projects

This report will be one of the training tools for mentors to use in the National workshops and beyond. Mentors will also learn from each other, thereby broadening their knowledge beyond personal experience. In addition, the report will be rewritten and improved on the basis of discussion with and between the mentors. Like all REScoops, the REScoop 20-20-20 aims to create a living community that keeps developing.

1.2.d How to read this report

The REScoops included here were selected on the basis of above mentioned best practice criteria. In several cases, REScoops have also been selected based on other criteria. A description of the chosen best practice examples is found in the remainder of the report. REScoops and their projects are described in more detail in the fifteen annexes of this report. While some annexes focus on a specific project, others concentrate on the REScoop as a whole. A bullet-pointed summary of the best practise example can be found at the end of each annex. These bullet-points are further expanded throughout the report, both in the context of secondary literature and with reference to the annexes.

A learning tool that only provides success stories offers only half of the picture at best, especially in the challenging environment of setting up a RES initiative. During the interviews the project leaders were asked about any other technical or non-technical barriers they encountered and how they were overcome. Specifically the non-technical barriers are also mentioned as bullet points under the annexes and are examined in the report below.

Practitioners who reviewed this report believe that citizens working with or starting a REScoop project can learn valuable lessons from the best practice examples presented. Additionally, the annexes provide further insights for those who want to know more about a specific REScoop or REScoop project. Most importantly, however, this is a living report, with links to practitioners and mentors that had responsibility in these projects. Mentors can be contacted to get more information or clarifications. As such this report functions as a start-up tool to form a new community to help both existing and emerging REScoops.

2. Best practice principles: Organization

Most REScoops have developed in an organic way. People start a project and the organisation follows. There tends to be no set logical orders or manuals used outlining what to do and when to do it. It seems that in all projects most common mistakes were repeated, many solutions were re-invented, and many long and arduous discussions were held on subjects that in hindsight prove to be a distraction. With the projects we interviewed, i.e. the ones that survived the formation process and became successful, we can identify several important common aspects, detailed below.

Principle 1: Clear and unambiguous ethical principles

Almost all REScoops in Europe follow the seven cooperative principles, some even re-inventing them. The principles, established (or rather reaffirmed) in 1995 by the International Co-operative Alliance (ICA) are as follows:

1. Voluntary, Open Membership: Open to all without gender, social, racial, political, or religious discrimination.
2. Democratic Member Control: One member, one vote.
3. Member Economic Participation: Members contribute equally to the capital of the cooperative and control it in a democratic way. The economic benefits of a cooperative operation are returned to the members, reinvested in the coop, or used to provide member services.
4. Autonomy and Independence: Cooperatives are autonomous self-help organizations controlled by their members.
5. Education, Training and Information: Cooperatives provide education and training for members so they can contribute effectively to the development of their cooperatives. They inform the general public about the nature and benefits of cooperation.
6. Cooperation among Cooperatives: Cooperatives serve their members most effectively and strengthen the cooperative movement by working together through local, regional, national and international structures.
7. Concern for the Community: While focusing on member needs, cooperatives work for the sustainable development of their communities through policies accepted by their members.

Principle 2: Start small to create fast successes with minimal complexity

In many countries cooperatives can be started with only two people. A cooperative is often born out of a specific need. Its goal is to provide for the needs of its members. This can be two members or 43,000. All of the REScoops interviewed started with "a happy and dedicated few." Many of the REScoops interviewed started with a group of 40 members with a strong core of five to six active volunteers.

By starting small you can quickly create projects that with their success create media attention and goodwill in the community. For example, the REScoop Combraille Durables initially wanted to set up a wind park but soon realised the project was too big for them to handle. They therefore started with a small photovoltaic project, which they repeated in towns in the area. This way the initial small PV REScoop grew into a large organisation, which now has the scale to work on their original plan for wind turbines in their region.

Principle 3: Use the social and organizational strength of your members as stakeholders

As your membership base grows, your membership becomes more diverse, while active members also become more experienced. All members are stakeholders in the REScoop, which makes them potential volunteers for the organisation. As the chairman of Ecopower stated: "In a sense we have 43,000 volunteers in the organisation. All are promoting renewable energy on family days such as birthdays or any other social meetings where high energy prices is so often a topic of discussion."

The skills and free time that your members put in the organisation are key assets of REScoops. Even though they do not appear on the balance sheet, all agree that these are a REScoop largest, most important asset. Successful REScoops use the fact that most members also have skills, experience and a network in other fields.

It is important for a REScoop to leverage the social power of its members. For example Som Energia became a REScoop with more than 6,000 members in two years. They have three full-time employees but for the largest part the organisation runs on volunteers.

Principle 4: Transparency

Including members and fostering their social power is of utmost importance: it is crucial that they can trust, know and understand the organisation, its goals and methods. This can be achieved in different ways. Transparency is key, and for that simplicity. This is important to remember when growing from a small REScoop base into a large company. For example, a REScoop with many different legal entities or involvement in different companies is less transparent and less attractiveness to new members. To improve transparency several REScoops have a continuous communication program to inform their members about their organisation, not only its status or plans, but also about its organisational structure, its underlying values and its implications (see principle 5 of the International Cooperative Association).

Principle 5: Open and democratic membership

In order to grow and make use of the social power of members, the principle of open and democratic membership is crucial. The democratic aspect of REScoops creates the responsibility of shared but real ownership for renewable energy production by demonstrating to members that they can actively participate in the organisation.

Principle 6: Willingness to learn from other REScoops

Most successful REScoops are willing to share knowledge. Their business models are usually not based on growth, they are not trying to capitalize on their experience or protective of their ideas. REScoops exist for the needs of their members. The sixth cooperative principle is cooperation between cooperatives. In addition, successful REScoops are often as transparent as possible. These organizational aspects of REScoops contribute to their willingness to share knowledge. In practice, however, the small group of volunteers who fought a hard and long battle to realize their REScoop may not always have the right channels or means to effectively share their knowledge. It is important to be aware of the fact that volunteers who became experts often need help to become effective teachers.

Nevertheless, most of the REScoops interviewed were very happy that they could borrow ideas from other REScoops. Som Energia in Spain, for example, copied the organizational model and business cases of Ecopower in Belgium. Combraille Durabelle started several projects that were similar to projects of other REScoops in France and Belgium. Baywind Co-op even set up a separate company (Energy4All) to share and spread their knowledge and business models.

Principle 7: Develop the REScoop with innovative projects

Another way of growing the organisation is to participate in innovation projects. A REScoop has an important asset: its member base, which also constitutes its demand side. For most innovation projects it costs time and effort to reach customers. A REScoop is a natural partner in such projects.

Still, the logic of a REScoop is serving its members, not reaching the profit or R&D objectives of other companies. It is important to negotiate clearly how the REScoop and its members will benefit. Also, innovation tends to come with strings attached. There may be attractive looking subsidies, but also cumbersome new requirements. Also, with new technology there is an increased risk of budget overspending and even of expensive project or partner failure.

A way to reduce the risks from innovation projects is to negotiate that the REScoop (board) members are included in the learning process and project team. This way the REScoop builds up knowledge about the energy market and organisational skills.

Innovative projects are a very good way to generate media attention for a REScoop, which helps increasing community support and subsequent membership growth, which means a bigger pool of social power to tap into. It also reduces adversaries in the community.

Annexes for further reading:

- Som Energia page 39
- Combraille Durabelle page 34
- Lochem Energie page 36
- E-Werk Prad page 63
- Cooperativa Elettrica Gignod page 55

3. Best practice principles: Financial organisation

Like the organisational structure of REScoops, their financing structures differ very much between and even within countries. Some REScoops sell shares to members, others work do not with equity but with membership on the basis of a (small) annual fee while offering their members the option to participate in loans to the cooperative. Some use the capital paid in as equity or loans by members to get leverage at a bank. Other REScoops finance their projects without external (bank) financing and run exclusively on money provided by members, subsidies and retained earnings. Finally, some REScoops set up specific companies for specific projects as joint ventures with other partners (landowner, energy company, technology suppliers, and local authorities). An in-depth analysis of the various different financing schemes of REScoops will be available on the REScoop 20-20-20 website by the end of the project.

Principle 1: Use REScoops' low organisational cost and resilience

One strength of the REScoop model results from the fact that they start small and tend to have a low cost base for project development. Usually no external money is needed in order to start a REScoop, while other developers spend large amounts of money on feasibility studies, project plans and initial negotiations with stakeholders. This makes REScoops very flexible and resilient. Without initial need for investments, REScoops tend to be in less danger of financial problems in case an authorisation process is halted or the completion of a project takes longer than foreseen, which is almost always the case. Most REScoops start off by doing all the work with volunteers and only start paying professional collaborators when there is a project to invest in. Some of the better REScoop projects generate revenues in an early phase with some 'simple' but profitable activities, such as selling third party produced green electricity to members. This allows paying for professional support for the 'real' and more complex original REScoop project.

Sometimes the founders themselves finance the very early phases out of their own pockets. As the project moves forward more money is needed. For example Som Energia started with €5,000 that was provided by the founders. Later they asked each member to contribute €100 to the capital base of the REScoop.

Principle 2: Foresee technical and financial plans and control

As investing is about trust, it is therefore key for the whole REScoop sector that all REScoop projects are both technically sound and financially viable. It is important to pro-actively communicate progress and changes to your members. Throughout the life of a project, cost implications and impact of inevitable changes and adaptations on the financial model must be assessed and the project must be formally reviewed both at critical moments (large investment decisions, large purchases, 'final design', with changes in regulations/subsidies that affect the project materially), and at regular intervals. Any share or loan offer to members must be preceded by a diligence study that provides transparent information on technical, legal and financial details. Cheating for the good cause can do incredible damage, well beyond the project involved.

Principle 3: Contain risks via insurance and service contracts

In many cases REScoops depend on technical installations like wind turbines, biogas installations or watermills. REScoops normally cannot afford to employ experts for the maintenance of their equipment. Technical problems, indeed even external forces (lightning, flooding, storm) can therefore lead to financial problems. To minimize nasty surprises and the downtime REScoops therefore need, apart from usual insurance cover, a good service contract that guarantees up-time for production. Service companies track the performance of an installation. To stay within the manufacturer's guarantees, they follow a scheduled preventative maintenance plan, implementing also possible updates recommended by the manufacturer.

Finally they will carry out any necessary repairs. A typical "up-time guarantee" clause in a maintenance contract guarantees, for example, that 97% of the time a wind turbine is operational it will be produce electricity. If the percentage is lower, the REScoop receives compensation, which creates financial stability. The REScoop needs less 'dead' reserves and can invest that money to develop new projects instead.

Principle 4: REScoops need transparency in finances

It is important members understand both the organisational and financial structure of the REScoop, which can be a challenge when membership is growing considerably. All future members also become co-owners of the REScoop. They are entitled to know where the money is going and where it is coming from. To provide this transparency REScoops post their yearly reports on their websites. It is important to keep the financial structure as simple as possible.

Principle 5: Provide for flexibility – pay variable dividends

The resilience of REScoops is often based on ownership by members. Members decide on dividends on shares and on interest payments on loans. Such financial decisions are best kept variable in order to maintain REScoops' flexibility to cut payments to members during difficult times. When the energy prices are low or it is a bad production year, it is possible that the returns on investment are lower than expected. Fixed interest payments and dividends at high levels can lead to financial problems. Members must be aware that dividends and interest payments are not fixed and what the implications are. Newspapers love to make a big story of a poor old widow going bankrupt because someone convinced her to invest her pension savings in a REScoop. Such scandals damage the whole movement.

Principle 6: Explore the opportunities in the crisis

Interview evidence suggested that many REScoops are flourishing in the crisis. There are good reasons to believe that citizens have grown suspicious of traditional channels for their savings and investments (banks and insurance companies) because of the crisis. Putting their money in an organisation that they control and where they can see where the money is going becomes increasingly attractive. If REScoops want to tap into these emotions they must communicate clearly about their plans and offer transparent insight in expected financial results as well as the risks involved. Better to promise less and deliver more than the other way round! An old Dutch saying goes that trust goes on a horse and comes back on foot – it is easier to lose trust than to regain it. Transparency is key, experience confirmed by academic research shows that citizens understand and accept negative outcomes if they were properly informed of the risks. This is a so-called 'fair process'.

Principle 7: Tap into other motives for investment

Return on investments is often not the only reason, indeed not even the main reason why people participate in REScoops. During the development phase of a project it may turn out that a REScoop is less profitable than initially expected, or not profitable at all. By communicating such changing risks and their consequences openly it is possible that the members of a REScoop still decide to go on with the project. There are even examples where they continued with even more dedication, they clearly felt provoked!

EWS received over two million German Mark in donations to buy the local grid when the grid company asked a price twice as high as the original estimate. The members of the REScoop Meerwind agreed to build a windturbine even when there was a risk it would not be profitable, as their first motive was to produce renewable energy. Keeping the motives clear in the minds of the members strengthens their perseverance, even when their project might not make economical sense. It is the motives that make REScoops more flexible than companies that work purely for profits.

Projects can be valuable to a REScoop and its members for other than purely economic reasons. For example small hydro projects, especially when restoring historical watermills, have high communicative value to attract shareholders in a community. Of course such projects must be compensated by more profitable projects or activities, such as selling third party green electricity to members, in order to stay financially healthy as an organisation.

Annexes for further reading:

- Som Energia page 39
- Ecopower page 24
- Meerwind page 43
- Cooperativa Elettrica Gignod page 55

4. Best practice principles: Relations with stakeholders

A RES project always involves multiple stakeholders. They can be members, other citizens, local authorities, nature groups, etc. What stakeholders to include differs between RES projects and local contexts. Here lies an important task for REScoops. REScoop members know the community and understand the local situation. This is an important asset and gives REScoops an advantage over external companies. This chapter discusses how these benefits were used to their full potential by REScoops featured as best practice examples.

Principle 1: Consider members as stakeholders

The strength of the REScoop model is that any member can participate. This has several benefits in the process of including stakeholders. Most citizens have a profession or are attached to other organisations. As a REScoop you can tap into this knowledge or ask your members to connect with organisations in order to working together.

Members from the local community understand the cultural values of the community. This helps them selecting and approaching potential stakeholders. This knowledge is also important for communication with stakeholders. For example, delicate issues in the community can be avoided, a historical connection can be used. Torrs Hydro, for example, placed a small replica of an old industrial watermill near new mills, which created goodwill and understanding in the local community.

Principle 2: Know your assets

Before communicating to other stakeholders about a project REScoops should first know what their assets are. Founders know about a REScoop's objectives, why the project is important and what the reasons are for starting it in a particular community. This might be less clear for communities. In order to communicate assets effectively, a clear vision of what they are is essential.

Principle 3: Know the concerns of the stakeholder

In order to communicate to other stakeholders, it will be necessary to be clear on who the different stakeholders are and what their interests or concerns might be. Local members can help in this process. Communication about the project should then be developed with these different interests and concerns in mind.

Principle 4: Get support of your local authorities

Local authorities are key stakeholders. Getting their support creates a feeling of trust in the local community. This requires pointing out assets and a general agreement of a cooperative's tasks in the community and in the project.

Good collaboration with local authorities speeds up the development process. A REScoop can offer its services to the local government. For example, one of the employees of Ecopower is a local citizen of the city where Ecopower built their first wind turbines. He offered to be available to the city and the citizens for information and advice on energy issues.

In the case of Lochem Energie there is another form of collaboration with local and regional authorities. The authorities include the local REScoop in research projects or energy projects. Normally they would outsource these projects. By including the local REScoop the knowledge remains in the community to be used by the REScoop for the benefit of the community.

Principle 5: Contact other REScoops for ideas and learn from their experience

As a start-up REScoop or a REScoop starting a new project it is not necessary to reinvent the wheel. As mentioned, most REScoops adhere to the sixth cooperative principle and are willing to share their knowledge. Several REScoops interviewed copied business models and ideas for projects of other REScoops throughout Europe. You can read through the 15 annexes in the back of this report to look at examples or browse the map on the REScoop.eu website.

5. Best practice principles: Grid connection and sale of energy

Grid connection and the sale of energy is a difficult subject for a best practice manual covering the whole of Europe. There are many differences in the European energy market concerning regulations and market structure, often for historical reasons. For example, in the Netherlands eight grid companies controlled by public shareholders own the market. In Germany there are almost 900 small grid companies, some owned by local REScoops. It is beyond of the scope of this report to deal with all these differences. Therefore only some general observations are stated below.

Principle 1: Different business models are possible

REScoops can have different business models. A REScoop can choose to focus exclusively on production of RESEnergy or on the sale of RESEnergy bought from third party RESEnergy producers. It could also focus its activities on energy saving projects. Combinations are also possible, and many REScoops start in one area and expand into others. A combination of business models often strengthens the organisation, as it provides different streams of income. If for any reasons the project development is delayed or interrupted, as happened in Spain when subsidies were cancelled, the REScoop still has another business line. EWS and Ecopower, the two largest REScoops interviewed, both have combined business models. Som Energia, a new REScoop, copied this combined business model.

Principle 2: Use the energy produced

Many REScoops that produce energy feel strongly about it, they see that as 'their' energy and want to use it themselves. In large RESprojects this is usually physically impossible, but sometimes it can be handled in an administrative way.

The preference of co-operative members to consume self-produced electricity has triggered some interesting technical, commercial and social innovations. Different models are used to sell the energy produced. A REScoop can out-source the complete administration to other energy companies, including metering and invoicing. Alternatively, they can trade their own energy themselves. Some REScoops meet their desire to be self-supplying by meeting the regulators requirements to set up and run a supplier network.

In several cases, one of which is described in the annexes, the REScoops deliver free energy to their members, who helped financing the installation. Instead of giving the members dividends on that investment the REScoop supplies them with free energy.

Principle 3: Decide how energy is sold

Most REScoops not only want to produce but also sell and use energy in an ecological way. This affects the way they sell energy. Traditional energy companies have a growth model that focuses on maximizing profits and selling more and more energy. REScoops sell energy but also want to support energy savings.

In the current market the real cost price of energy is often hard to understand due to a confusing offer of many different types of contracts with different price structures. In the liberalised energy market in the UK 1400 different tariffs are available to users. As a consequence, consumers find it hard to understand their energy bill and are not able to compare suppliers. As a result, switching suppliers is very limited, it is in fact at an all-time low.

Another detrimental effect of the traditional energy supplier business model focussing on growth is that such companies want their customers to use more energy, rather than to reduce consumption.

There are rebates for high-energy consumers, effectively offering rewards for waste! There may be some window dressing or lip service to ecological projects, e.g. such as selling LED lamps to customers, while at the same time selling the 'comfort of air conditioning', or 'electrical bathroom floor heating' to their customer base.

Two REScoops interviewed, Ecopower and Die Elektrizitätswerke Schönau (EWS), have a different perspective and also different business models. Both have set fixed tariffs. The first advantage transparency, coop members can easily understand their energy bill. Secondly, it encourages everybody to save energy. Ecopower for instance has one single simple tariff. No diversification between day and night, no lower prices for bigger customers. Their customer's bill mentions one single all inclusive price per kWh: transport and distribution costs, taxes, VAT, and other charges are all included. This means that when an Ecopower customer buys a new fridge he or she can immediately see if it is worth taking the more expensive but more energy efficient model.

EWS went even further. To change the traditional model they had to buy the grid. This was a struggle that took them seven years, but their business model has become the basis for the current German Renewable Energy Act. They actually have chosen to sell at a high kWh price, as that encourages their members to save energy or produce their own.

Principle 4: Plan for the grid connection

A REScoop should approach the operator of the local electricity network early on in the development process. It is important to understand whether there is sufficient capacity in the electricity network to allow feeding in the proposed energy generation, and what the connection might cost. The network operator should be asked for an initial budget estimate. As the project progresses a full network connection offer should be requested. In some countries the community will need to pay a deposit in order to secure the connection. How a community can finance this must be considered early on.

Principle 5: Use smart grids

The preference of REScoop members to use their own produced energy make REScoops a natural partner in smart-grid projects. The smart grid technology is still a niche market and we see that several REScoops are innovating with this technology. EWS is doing a pilot and the Italian REScoop E-Werk-Prad has installed a smart-grid.

REScoops control the demand side of the electricity market due to their membership. This makes them an interesting partner for companies developing smart grids. However, as is mentioned in the chapter on stakeholders, it is important to remember that a REScoop exists for the benefit of the members, not for the profits or R&D of other companies. Knowing the value of the assets of the REScoop and knowing what members need is important for the negotiation of such a pilot project. In fact, in order to design and run a good smart grid it is very important to know what the different stakeholders expect from it.

Annexes for further reading

- | | |
|---------------|---------|
| ▪ Som Energia | page 39 |
| ▪ EWS | page 60 |
| ▪ Ecopower | page 24 |
| ▪ Eendragt | page 57 |
| ▪ E-werk Prad | page 63 |

6. Report on non-technical barriers

There are numerous non-technical barriers for REScoops, often related to local or national issues. There are many different barriers in the RES energy field that do not only affect REScoops. It is out of the scope of this report to deal with all these barriers¹. For general barriers see Ecorys report on non-cost barriers. ¹For financial barriers see the report made on financial schemes by the REScoop 20-20-20 project. Only some general non-technical barriers for REScoops are mentioned here.

6.1. Bureaucracy and regulations

The main non-technical barriers are bureaucracy and regulations concerning RES projects. Especially for start-up REScoops bureaucracy is an uphill battle. Next to building an organisation the members also have to deal with slow or unclear government bureaucracy. Traditional energy companies know their way around the energy market and have a clear advantage in this field. Dealing with bureaucracy is something completely different for a company with their own legal department than for a REScoop with five board members.

6.2. Changing regulations and support systems

Changing policy on renewable support systems is a barrier for the whole RES market. However, they press more heavily on small organisations. In an interview with a treasurer he claimed that he had to research the fourth support system for wind turbines since the beginning of the application. In countries like Germany and Denmark, where the support system is straightforward and consistent, REScoops flourish.

6.3. Disconnection with large traditional companies

We have mentioned the opportunity of working together with energy companies, either in innovation projects or in general RESprojects. This can be a difficult partnership. REScoops who work in small groups can organise themselves quickly while organisation in large energy or grid companies takes longer. On the other hand, REScoops often work on a voluntary basis, where members have different amounts of time to spend on the project.

6.4. Negative ideas and misinformation on renewable energy

Many REScoops struggle with a lot of misperception of wind turbines as a result of anti-wind campaigners and negative media reports. Effective communication and sending out the right information is the only way to battle this barrier. Different REScoops took politicians and citizens to existing wind parks. Dealing with misinformation costs a lot of time and energy.

¹ Ecorys, 2008: "Assessment of non-cost barriers to renewable energy growth in EU Member States."
http://ec.europa.eu/energy/renewables/studies/doc/renewables/2010_non_cost_barriers.pdf

7. Report on opportunities

The fifteen interviews with pioneers in the energy market demonstrated that REScoops can offer several opportunities to the renewable energy market. It is important to work to improve and fully exploit these opportunities. It demonstrates the importance to grow the REScoop movement and to consider REScoops as serious partners in the European energy transition.

7.1. REScoops create community involvement in RESEnergy and therefore accelerate projects

REScoops have the potential to increase social acceptance of RESEnergy. Members of the REScoop 'sell' the benefits of RESEnergy' in informal local networks, as in a chat with neighbours, on birthday parties, via school projects, etc etc. Often these volunteers are already active as volunteers in other fields in the community where they live. A REScoop is not a big company that sends strangers to a village to build an installation and who then disappears thereafter. A REScoop consists of local people who live locally. It is therefore in their own interest to have a project that fits in locally. For many RES projects obtaining planning permission is a bottleneck, as neighbours resist projects from which they fear disadvantages, without seeing any advantage. By involving locals in a REScoop, giving them a stake and a say in the project, projects can not only be implemented faster, but also better. Instead of imposing a wind farm on people, wind turbines of REScoops are integrated in the community.

The fact that REScoops, following cooperative principles, are open organisations where any member of the community can participate, NIMBY effects are reduced. Research on NIMBY resistance indicated that it is driven by a feeling of injustice: the local community feels they had no say in the matter.²The democratic and open character of the REScoop model gives people a say in the development process as well as a stake in the economic benefits.

REScoop members work hard to avoid any negative effects of wind turbines. The REScoop de Eendragt had many technical issues with their first turbine (1989). It was their first wind turbine and they could not afford bad publicity about wind energy in their community. They worked hard with technical engineers to reduce sound levels and improve efficiency.

7.2. Stimulating alternative business models

We have seen several examples of REScoops changing the Energy production business model. The model large energy companies is based on growth and profit. The more production, the more profit. Several REScoops have adapted their business models to better fit the needs of their members. By asking a relatively high but straight forward price per kilowatt-hour while charging low fixed cost, these REScoops encourage savings. This can help speeding up energy transition by changing the energy market from a production driven market owned by international power giants using economies of scale and fossil or nuclear power, to a demand driven market with local companies, with small scale, decentralized renewable production of consumer/owners that become energy aware 'prosumers'.

7.3. Strengthening the community

Energy has become a growing household cost across Europe, a problem due to increasing energy prices and financial crisis-driven reduced family incomes. This is especially a problem in rural or remote regions, which are typically suited for REScoop initiatives. By setting up REScoops, community members realize a limited extra income. Probably even more important is that they realize significant savings on energy costs as they get involved in the production and usage of their own energy.

² See articles of dr. M.P. Wolsink: <http://www.uva.nl/over-de-uva/organisatie/medewerkers/content/w/o/m.p.wolsink/m.p.wolsink.html>

A third effect is the generation of further economic activity in those areas. Local REScoops often use local businesses to help them setting up and running their REScoop. A local primary school therefore not only benefits from renting out its roof to a REScoop to install PV panels, but the solar panel business may allow the local electrician to hire a new employee, he may inscribe new children in the school, will become a customer of the local shops, will help save local services as the library, post office etc.

7.4. Growth and resilience of the REScoop movement

The REScoop movement organises its own growth. It is not a large centralised large-scale project that can either spectacularly succeed or fail. If one REScoop fails, others need not be affected. Indeed, other REScoops can learn from mistakes made.

The low cost, volunteer based organisation makes them resilient enough to survive even unfavourable regulations or support systems. Their open and democratic structure creates an open-source learning model that should strengthen the movement over time, creating an internet-like growth model.

Considering the benefits of REScoops it would be good if government policy would stimulate this movement. When there is good collaboration between government and citizens groups, REScoops tend to flourish. Sadly, large electricity companies have formidable lobbying power and are viciously defending their entrenched interests. To accelerate REScoop development, the collaboration with all levels of government must be improved. Especially local government should be given the insight to appreciate the importance of REScoops, as well as the tools to initiate and stimulate local REScoops.

7.5. Excellent, low cost demand driven innovation that could be better sold

In several cases we found that enthusiastic and technically competent individuals started innovative REScoop projects. These were often driven by a specific wish of their members. Their end products meet the expectations of their users. The combination of a specific need of members and technically competent volunteer experts, makes REScoops pockets of low-cost but high value innovation. This potential could be further exploited if a good network of knowledge-sharing is established between existing and new REScoops, universities and other players in the broader energy market. This requires an extra effort of a different, more communication-oriented type of volunteer. Especially the more technical volunteers tend to see 'problem solved' as 'problem forgotten', their energy is immediately directed to attacking the next pressing problem on the list, not to communicating or sharing successes.

7.6. Local REScoops are the ideal platform to align interests of the stakeholders

RESprojects deal with many stakeholders. An open and democratic organisation like a REScoop is the ideal platform to bring these stakeholders together. It is not just that the (board) members tend to know which are the most important persons to include to make a project a success, whose support is required and whose resistance would be fatal. The members also know best what the other locals find important, they know the local history, culture, problems and values. Sometimes members are even involved with other stakeholders as employees or member. Finally, with the credibility they have locally, they can help bust the NIMBY myths and make the community members discover the facts.

7.7. Large Companies are discovering the value of REScoops

REScoops bring a new phenomenon to the energy market, the “prosumer”, a consumer, responsible not only for their consumption of energy but also assuming the responsibility for producing part of it. REScoops and their prosumer members need access to other services provided by players on the energy market like administration, balancing of energy, invoicing, smart-grids etc. These services are opportunities for companies to work together with REScoops. Several energy giants have already admitted that setting up RESproduction sites without local involvement is far more complicated and expensive. To meet their RESenergy production targets, they may enter into partnerships with REScoops, as the many Danish examples showcase.

For REScoops it is important to know about their value to traditional market parties, especially where the small scale character of the REScoop is a major disadvantage versus energy giants. Sharing experiences between REScoops is especially important in this area. In the case of Middelgrunden and Energy4All we can see how several parties, a traditional developer, a national co-operative, a local cooperative and the traditional energy companies are able to create win-win situations.

8. Report on risks

We have seen the resilience of the REScoop movement and it is hard to think it will ever disappear. None the less there are several risks that REScoops struggle with and that can cause REScoops to halt in their development or to even stop their activities.

8.1. Bureaucracy

Bureaucracy and regulation make it hard to enter the energy market. Both interviews and different secondary reports, refer to bureaucracy as one of the biggest hurdles in the development of RESprojects. This is not only the case for REScoops. However, because of the small organisational size of start-up REScoops bureaucracy and regulations press more heavily on REScoops than on big companies.

Some of these regulations are in place to protect the consumer. The government has taken on the task of protecting its citizens against private companies which culminates in many cases where REScoops are the citizens who are now being protected against themselves.

8.2. Underestimation of citizens and REScoops

Some of the interviewed REScoops recognized that there is still an overestimation of the capacities of companies compared to that of citizens. This influences policies and political attention. As we have seen, there is an enormous innovative, social and economic power within these REScoops. Their strength is also the main problem. They are not centralised and thus their power is not clearly visible. A re-evaluation of the potential of citizens is needed to recognize that small groups of citizens who come together to address their own needs are economically just as important as large, centralised for-profit companies.

An important reason for this underestimation is the fact that social power, the free time and skills of volunteers, is not recognized as capital of an organisation. The social capital does not show in the financial books, but it is certainly there.

8.3. Differences in countries

There are many differences between countries in the European energy market. This makes it hard for European REScoops to work together. The strength of REScoops is that they do not have a model based on competition but on collaboration. The more differences there are, the harder it is for citizens working on RES-energy to work together in a European context.

8.4. Changing regulations and policies

REScoops who are only involved in RESEnergy are more vulnerable to negative changes in policies. Large energy companies with a larger production energy generated from fossil resources are less vulnerable to changing policies on RESEnergy. REScoops often focuss exclusively on RESproduction, hence they are most vulnerable to failing or changing support schemes. We see that REScoops flourish in countries with a stable renewable energy policy. Moreover, in those countries they are responsible for more than half of the renewable energy production.³

³ David Bucham, 2012, The Energiewende- Germany's gamble: <http://www.oxfordenergy.org/wpcms/wp-content/uploads/2012/07/SP-26.pdf> p.11

8.5. Windrush

We have seen that the REScoop model is important in creating support for and social acceptance of renewable energy. On the other hand several REScoops interviewed see a development in the energy market that excludes citizens. Several of the REScoops call this the 'windrush.' Private developers who claim land and push through authorization processes without due communication and participation contribute to NIMBYism and a generally negative perception of wind turbines.

8.6. Further research

These conclusions are derived from examining 15 successful REScoops. The scope of this project did not allow empirical research and therefore we recommend empirical research to be done in the future. The conclusions in this report point us to the potential of REScoops as serious partners in energy transition. Take for example the potential of the low-cost, demand driven innovation. REScoops can be great starting points of renewable energy technology innovation, if organised to their potential. Considering the growing list of REScoops in Europe this can be an enormous breeding-ground for innovation. Further research is needed to fully understand and optimize this potential.

Another example is the relationship between local authorities and REScoops. There are some best practices where both parties benefitted. However, these are cases that stand on their own. There are no general mechanisms or tools for local governments to organise this kind of collaboration. Research on the mechanism, regulations and tools for local governments in the support and collaboration of REScoops is needed. This way we can create a fast development in REScoops for more renewable energy and for the benefit of communities.

9. Summary of Best practice principles

Best practice principles: Organisation

Principle 1	Clear and unambiguous ethical principles
Principle 2	Start small to create fast successes with minimal complexity
Principle 3	Use the social and organizational strength of your members as stakeholders
Principle 4	Transparency
Principle 5	Open and democratic membership
Principle 6	Willingness to learn from other REScoops
Principle 7	Develop the REScoop with innovative projects

Best practice principles: Financial organisation

Principle 1	Use REScoops' low organisational cost and resilience
Principle 2	Foresee technical and financial plans and control
Principle 3	Contain risks via insurance and service contracts
Principle 4	REScoops need transparency in finances
Principle 5	Provide for flexibility – pay variable dividends
Principle 6	Explore the opportunities in the crisis
Principle 7	Tap into other motives for investment

Best practice principles: Relations with stakeholders

Principle 1	Consider members as stakeholders
Principle 2	Know your assets
Principle 3	Know the concerns of the stakeholder
Principle 4	Get support of your local authorities
Principle 5	Contact other REScoops for ideas and learn from their experience

Best practice principles: Grid connection and sale of energy

Principle 1	Different business models are possible
Principle 2	Use the energy produced
Principle 3	Decide how energy is sold
Principle 4	Plan for the grid connection
Principle 5	Use smart grids

10. Annexes: 15 best practices per criterion

These annexes are descriptions of Best Practices of REScoops. They can be used as a tool for new REScoops and REScoop development. All best practices have mentors who share their knowledge of REScoop projects. During four national workshops this group of mentors will share their knowledge amongst each other and with new local REScoops. Locations and dates of the national workshops can be found on our website. As a starting REScoop you can also organize your own meeting with one of these mentors, as long as you invite other new REScoops.

These annexes are divided by best practice criteria. We have interviewed three different REScoops per criteria.

Criterion 1: Speed in the authorisation process

- Ecopower: mentor Jim Williame page 24
- Middelgrunden: mentor Erik Christiansen page 27
- Vents d'Houyet: Bernard Delville page 29

Criterion 2: Involvement of stakeholders and alignment of their interest

- Kilbraur Co-op: mentor Paul Phare page 31
- Combrailles Durables: mentor Isabelle Gardères page 34
- Lochem Energie: mentor Tonnie Tekelenburg page 36

Criterion 3: Technical and economic sustainability of the project

- Som Energia: mentor Gijsbert Huijink page 39
- Meerwind: mentor Gerard Jansen page 43
- L'association Éoliennes en Pays de Vilaine: mentor Michel Leclercq / Pierre Jourdain page 46

Criterion 4: Financing schemes and participation of citizens as shareholders

- Torrs Hydro Coop: mentor Esther Jones page 49
- Energy4All: mentor Paul Phare page 52
- Cooperative Electrica Gignod: mentor Daniele Domanin page 55

Criterion 5: Grid connection and sale of energy

- De Eendragt: mentor Rien Haasnoot page 57
- Schonau EWS: mentor Sebastian Sladeck page 60
- E-Werk-Prad (BZ): George Wunderer page 63

Speed in the authorisation process

Ecopower



Summary

Ecopower realised one of their first wind turbine projects in a record time of 22 months. The project concerned three wind turbines of which two were actually realised in only 10 months. Throughout the project there was no local opposition. This is why the project is considered a best practice in the speed of authorisation process. The project demonstrates many elements of how to best execute a REScoop project. Ecopower's close collaboration with the local authorities combined with its carefully planned and executed process of open communication aiming to involve a maximum number of local citizens are success factors that contributed to speeding up the authorisation process.

About the REScoop

Ecopower is one of the largest REScoops in Europe. Ecopower uses various renewable energy sources. They started producing hydro-power from restored and modernized historical watermills, run several solar projects with schools and their members, and now own seven wind parks. Membership grew from 47 members in 1999 with the initial hydro project to 43.000 members in 2012. The growth of this REScoop had two strong impulses. The first was the realisation of three wind turbines in the city of Eeklo, the second the 2003 decision of Ecopower's general assembly to become an energy supplier in the Flanders region.

About the project

The project started with one of the city Aldermen, who felt that energy costs of the municipal football stadium were too high. After evaluating several alternatives the city decided that wind energy would be one of the best options to reduce costs. In 1999 the city of Eeklo therefore launched a public tender to build two wind turbines on land owned by the city. Ecopower later secured a third location on a nearby private site.

The municipal authorities of Eeklo had studied similar projects and were introduced to the cooperative approach. In 1998 the REScoop Energie 2030 had installed a 500 kW Enercon wind turbine in Sankt-Vith. Also, they had visited Denmark, while the University of Brussels was developing a wind plan for Flanders. This University also suggested using a cooperative approach. However, the city kept the initiative of the project. A wind energy plan was developed for the city and the surrounding communities, specifying where wind turbines would be feasible. Citizens were involved in the development of the plan. Visits to projects at the other side of the Dutch

REScoop - ecopower cvba

Official year of establishment	1991
Members	43000
Project name	Eeklo windpark
Country	Belgium
Renewable Energy Source(s)	Wind
Best practice	Speed in the authorisation process for this project
Mentor	Jim Williame

border in Zeeland and to a turbine in Middelkerke on the Belgian coast were organised to allow citizens to assess the impact of the turbines. Gradually a public tender took shape. One of the selection criteria was the possibility of citizen participation.

An independent committee judged the applications for the tender. Ecopower, at the time still a small hydropower REScoop with 47 members, won because of their cooperative approach. "The city probably did not expect one of the applicants to offer the 100% participation possibility Ecopower came up with." The first wind turbines were built 10 months later, extraordinarily fast considering that the average time in Belgium is about 36 months. "There were no negative reactions to the public inquiries, while the city awarded the planning and environmental permissions without delay."



Collaboration between REScoop and city of Eeklo

A great asset in the project was also the positive approach of the city Alderman and the city council of the town of Eeklo. The close collaboration between the city and Ecopower as the wind developer, and the open communication ensured that citizens felt they had a real say in the project. There were no nasty surprises or disappointments. As a result, one third of the new Ecopower members were inhabitants of the city. According to Jim Willaeme: "Whenever projects are really supported by local authorities the chance of success is a lot higher."

The perfect communication plan

The nearest housing area close to the windmill sites is approximately 250 m away. One house is even closer, just at the other side of the channel from the second E66 turbine. Ecopower and the city of Eeklo spent a lot of time communicating with citizens from Eeklo. In this project the procedure was developed to have local members of Ecopower help in the authorization process.

"At that time, as a developer, Ecopower was very much present on and around the site. Ecopower people visited the neighbours individually, talked to people in the streets while preparing the project, set up contact days and appeared regularly in the local press and on local radio."

The REScoop model was quite new to Belgium. That aspect was clearly supported by local newspapers and radio stations. Ecopower organised several information sessions, not just about the project itself, but also in order to explain the cooperative model to the citizens of Eeklo.

Discussions in such sessions centered more around ways to participate than conflict or resistance. Ecopower is convinced that the careful preparation of the project by the municipality and the intense contacts between Ecopower and the people living close to the turbines and with the citizens of Eeklo in general created that very positive attitude towards the project.

Ecopower did not leave the city after the wind turbines were installed. In the offer for the public tender Ecopower had also offered a number of extra services to the city, which have led to fruitful collaboration over the years. Ecopower sponsored a nature information centre, set up solar installations, and installed a co-generation plant using plant oil to supply heat to two of the city's buildings. To cover a larger part of one of the building's heating requirements, Ecopower introduced a heat recovery system on the ventilation system of the building. One of the engineers of Ecopower is a local citizen who became a cooperative member when the first project was constructed. Now, while part time employed by Ecopower, he also works as a local advisor on energy issues to the city of Eeklo.

The project in Eeklo expanded the activities at Ecopower and made it possible to grow as a REScoop. It has created the possibility to engage people in the development of new projects, first in small hydro, later in wind power, solar PV and the plant oil cogeneration plant.

Best practices

- Good collaboration with city in which the project is placed.
- Focus on communication.
- 100% participation as a clear asset of the REScoop model.

Non-technical barriers

The usual non-technical barriers slowing down projects were avoided with close cooperation with the municipal authorities and the intense efforts to prevent rather than fight citizen protests.



Summary

In 2009 Hvidovre Wind Cooperative together with the utility company DONG Energy built three 150 meter high wind off-shore turbines close to the Danish coast. The turbines serve as test models for off-shore wind parks. For testing reasons the wind turbines are placed 15 m away from the coast and can be seen from the whole region of Hvidovre. Remarkably enough there was very little opposition against these turbines. On the contrary, the citizens of Hvidovre and the suburban area of Copenhagen raised the required capital in a period of 5 months. The turbines were placed within 18 months. A professionally managed process with good communication, the involvement of local stakeholders and the REScoop participation model makes Hvidovre Wind Cooperative a best practice in the speed of the authorisation process.

About the REScoop

The idea to start the project came from Middelgrunden Offshore Windfarm cooperative. DONG Energy had plans to test more efficient off-shore wind turbines. Middelgrunden approached some of the district's heating companies in Hvidovre to start a new REScoop and to participate in the project. In cooperation with the Danish utility DONG Energy, Hvidovre Wind Cooperative planned and implemented three wind turbines. The citizens of Hvidovre would own one of the three turbines.

The REScoop is organised according to Danish law. This means that there is a one person/ one vote policy, members have influence on every detail and make the decisions according to the statutes. The shares given out were divided by the amount of energy produced in shares of 1000 kWh. 2,248 members participated and bought 10.700 shares.

About the project

The project was not a standard wind project in Denmark. It was a test case in two ways: technical and social. As mentioned above, they are two big offshore turbines close to the coast. The consortium wanted to proof the technical possibilities, but also show the Danish Energy Agency that local citizens would support a very visible project in a suburban area of Copenhagen.

REScoop - Hvidovre Wind Cooperative

Official year of establishment	2009
Members	2248
Project name	Hvidovre Offshore Wind
Country	Denmark
Renewable Energy Source(s)	Wind
Best practice	Speed in the authorisation process
Mentor	Erik Christiansen

The plan was to build three 3.6 MW standard Siemens Power wind turbines. For this off shore type DONG Energy would replace the standard blades with a 107 m diameter with new 120m diameter blades. It would have a production of 10.7 GWh per turbine. Two turbines would be owned by Dong Energy and one by the cooperative.

The whole Hvidovre region would be able to see the turbines since the project was built so close to the shore. To make this authorisation process a success the public had to accept and support this project. Middelgrunden Off Shore Wind Co-op and other NGO's set out to start an innovative process where citizens would be included in an open procedure.

The project is a success, both in a technical and a social way. The authorisation process only took 18 months. The citizens showed their eagerness and willingness to cooperate by raising sufficient capital within 5 months. 20% of the capital were raised by members living in the municipality where the turbines were placed. During the first year the wind turbines produced more than expected, even with the stops in production during tests. The production was 12,5 GWh.

The authorization process is more than the application

The project was a success due to the professionally managed implementation process and a comprehensive communication strategy. First of all, every milestone of the authorisation process was communicated.

Many of the local politicians worried about the noise of the wind turbines, so Middelgrunden Off-Shore Wind co-op took these politicians on a boat tour to one of their wind parks at sea. This convinced the local politicians that noise would not cause a problem.

The REScoop organised an open debate in the local newspaper and help public meetings throughout the region to answer questions of local citizens. This took away a lot of concerns. In their communication they focussed on the model of Middelgrunden, a REScoop with a good financial and organisational track record. It demonstrated to politicians and the public that it was possible and that it was not all an experiment. Also schools are included in the project for their science education.

In realising this project various national and local stakeholders were involved. In terms of national support, obtaining the approval for the project went very well due to the supportive and cooperative attitude of the Danish Energy Agency. Besides national parties such as DONG Energy and the Danish Energy Agency, local stakeholders were involved as well and played a vital role. To begin with, the mayor and members of the city council advocated the project, which provided the necessary political support.

Best practice

- Participation of citizens as shareholders.
- Communication about every milestone of the project.
- Professional management of the implementation process.



Summary

The REScoop Vents d’Houyet built two wind turbines with almost no resistance. The wind turbines were built in 24 months from application to construction. The best practice of this REScoop was that they included children in the process. The shares for one turbine were offered to children, which created a lot of support in the region. This REScoop demonstrates that the social aspects are just as important for the speed in the authorization process as technical aspects.

About the REScoop

The association Vents d’Houyet started in 2001 when the results of a 30 m wind measuring mast on a plot in Mesnil-Eglise turned out positive. The year before two initiators had collected money to set up the mast. The positive results of the test led to the creation of Vents d’Houyet as a cooperative. However, there were no financial means to do anything substantial. In 2002 the Walloon Region launched a € 750.000 call for European fund for Regional Development projects. The Vents d’Houyet project proposal was selected, which allowed the cooperative to act.

The cooperative obtained permits for the construction of 2 turbines in Mesnil. One was built by the REScoop Vents d’Houyet in 2004. The permit of the other turbine was transferred to a separate cooperative and was called Eolienne des Enfants or “The Children’s wind turbine.”

REScoop - Vents d’Houyet ASBL

Official year of establishment	2001 as Vents d’Houyet, transformed into Allons en Vent in 2005
Members	935 cooperative members, 95% of them children
Project name	Eolienne des Enfants (Children’s windturbine)
Country	Belgium
Renewable Energy Source(s)	Wind
Best practice	Speed in the authorisation process for this project
Mentor	Bernard Delville

About the project

When Bernard Deville started the association Vents d’Houyet one of its main goals was to promote wind energy to citizens. One way to do this was to teach children about wind energy with fun projects through a Wind Academy, “Académie du vent”. Bernard and the other initiators of Vents d’Houyet came up with the idea to give the children of the Mesnil-Eglise region their own cooperative.

In 2005 they set up the cooperative Allons-en-Vent, to be a cooperative for children and to build the second wind turbine near Mesnil. Due to a lack of funds the cooperative was dormant at first. In order to speed up the project, Vents d’Houyet bought the shares of the cooperative to pre-finance the construction of the turbine, thus creating the necessary revenues for the cooperative to survive on its own. Also a contract was made with Vents d’Houyet for the operation and maintenance of the turbine. When it was clear that the turbine would be installed, a call for cooperative funding was launched. Public activities were set up where people were invited to make their children or grand-children members of the cooperative.

In 2011-2012 a new group of administrators took over and Vents d'Houyet left the cooperative. Now the wind turbine is 100% owned by the cooperative of which 95% of the members are children.

Authorization process

From application to construction it took 24 months to build the wind turbines. The children's cooperative got a lot of sympathy in the region. "There was hardly any resistance. The only formal complaint was from the closest neighbour who was worried the turbine would have an adverse effect on his cows. He sent a letter to the municipality. The people that expressed their doubts could be convinced by giving them more information." The project got so much sympathy that the regional planning office slightly moved the borders of a Natura 2000 exclusion zone under development to allow the project to be built.

The first promoters were the children themselves. Vents d'Houyet had a "castle" at the foot of the measuring mast where the "Académie du vent" taught school classes from the surrounding villages about wind energy. In 1999 there had been a solar eclipse. They were told that it was expected that the world would have become very cold, weren't it for Bernard Delville who had shot an arrow to the moon to make it leave just in time. In 2003 most children remembered this story and Bernard Delville very well. "It turned the children into mayor defenders of the project making their parents buy shares. Most of them got 2 or 3 shares."

This project demonstrates that a best practice in the authorization project for RES-projects is to include or stress the social aspects of the project. Authorization projects are too often considered a purely technical and procedural matter. However, the way people perceive of the installation, in this case a wind turbine, is just as important. Many academic studies demonstrate that ownership and influence in the development process can change how people perceive of wind turbines and help to prevent NIMBY-ism. This project takes the idea of ownership and perception of the wind turbine almost literally by including children in the process. As Delville states: "We are doing it for their future, why not let them own their own wind turbine." As a result people perceive differently of the wind turbine as when it would have been built by an anonymous energy company or project developer.

New opposition

Between 2007 and 2010, two hundred wind turbines have been installed in Wallonia. In 2011 forty-five turbines were set up, but in 2012 only sixteen turbines came on line. There has been a "wind rush" in Wallonia, with project developers claiming land and pushing the authorization process through without any regards to local sensitivities in the development process. According to Deville, "the wind rush of the past few years has created resistance against wind energy and by now the precedents for complaints are used very effectively by the 5% opponents in society."

Best practice

- Including social aspects during the authorization process.
- Good collaboration with local authorities.

Non-technical barriers

- New opposition against wind turbines.

Involvement of stakeholders and alignment of their interest

Kilbraur Wind Energy Co-op Ltd (KWECC)



Summary

The Kilbraur wind farm is located in the Kilbraur area of Strath Brora, Sutherland which is 6.25 miles NW of the town of Golspie in the North of Scotland. The land at the wind farm is primarily owned by the Sutherland Estate and is currently grazed by sheep and deer. Following detailed monitoring of the wind resource, consideration of technical issues, environmental effects and the distance from local communities, Kilbraur was recognised as an ideal location for a wind farm. This project started by the wind developer Falck Renewables who approached Energy4All to explore the idea of offering partial ownership of their wind farms to the local community.

About the REScoop

Kilbraur Wind Energy Co-op is a local REScoop set up by Energy4All for the sole purpose of facilitating an ownership stake in the Kilbraur wind farm that was developed by Falck Renewables Ltd. The aim of the co-op was to raise as much capital as it could from the local community through a community share offer and invest these funds in the wind farm to create a sustainable financial return for its members and retain the income generated by the project in the local area.

A share of wind Farm profits are distributed to the co-operative in proportion to the £1.1m stake held which has a projected average annual return of 10% per annum for the life of the project. There is also a guaranteed 6.5% per annum minimum return to the co-op and member's capital investment is paid back after 20 years. This is underwritten by Falck and provides a good level of security to non-sophisticated investors.

The Co-operative structure gives every member an equal say in KWECC affairs and the members may decide to support local environmental projects. However the most important reason for supporting KWECC is the satisfaction of knowing that everyone in the area had the chance to purchase a stake in an ethical local business, while demonstrating a commitment to protecting the environment for future generations. (Tom Robinson, former director of KWECC)

REScoop - Kilbraur Wind Energy Co-op Ltd (KWECC)

Official year of establishment	2008
Members	528
Project name	Kilbraur Wind Farm
Country	United Kingdom
Renewable Energy Source(s)	Wind
Best practice	Involvement of stakeholders and alignment of their interest.
Mentor	Paul Phare, former Director of KWECC

Background Kilbraur Wind Energy Co-op

Energy4All is a not for profit social enterprise that exists to promote community ownership of renewable energy in the UK. It operates on limited resources and cannot afford to develop projects through the planning process.

Its board considered that the best way of bringing about its objective was to seek opportunities to set up renewable energy projects with landowners or developers who could fund the planning process and were willing to share the development and operation of renewable energy projects with the local community.

Falck Renewables Ltd, an Italian Family owned business that develops commercial wind farms, approached Energy4All at the beginning of 2003 to explore the idea of offering partial ownership of their wind farms to communities living close to their developments in the north of Scotland. This led to the signing of the Falck Framework Agreement in July 2003 covering a range of projects. The first project launched by Energy4All under the terms of this agreement was at Boyndie near Banff in Aberdeenshire. This co-operative was successfully launched in summer 2006, raising its target share capital within the 3 month launch period and attracting over 700 members, predominantly from the local community.

Local REScoops as a platform for aligning the interest of local stakeholders



In Kilbraur the local co-operative functions as a platform to align the interest of different stakeholders in the project. For Falck and Energy4All the local co-operative is a great asset because it helps to educate and raise awareness of wind turbines and renewable energy. However, this was not achieved easily, because of a lot of misconception on wind turbines and the bad publicity created by opponents of the Kilbraur wind farm.

With local stakeholders such as Scottish Natural Heritage the developer undertook a variety of initiatives as part of the Conservation Management Plan for the site. The plan undertook initiatives like the direct support of the security and reproduction of indigenous species of birds, wildlife and plants. It helped to identify and protect Kilbraur's ancient historic sites and monuments. Native trees were also planned to further mitigate the effect of CO₂ emissions and climate change.

In addition, the agreement with Falck included a small fund to be controlled by the local co-operative. In 2010 the board of Kilbraur Co-op offered three local schools each £1000 towards a specific project that would enhance the school environment and meet criteria relating to sustainable development.

As said these accomplishments did not come easily. Generally the local community are unhappy about developers profiting from these large scale wind farms and taking the profits out of the locality. However KWEC was a way of allowing people in the local community to benefit from the project in the same way as the developer. With the REScoop benefits stay within the locality. The bad publicity was overcome by holding on and explaining the co-operative principles.

Once the co-operative had been created and after operating for nearly a year, Falck Renewables made an application for an extension to the Kilbraur site. Members of the co-operative supported this application by writing to the planning authorities and endorsing the extension, which the authority had no issues in granting. "This is evidence that once a wind farm is established with a fully supportive co-op membership, they are more inclined to actively engage with renewable energy in a more positive way" (Paul Phare, former Director of KWEC)

Best practices

- Good communication.
- Know the concerns of the stakeholders.
- Communicate often and in different forms.
- Aim your communication to increase the sense of involvement and ownership of the project by the different stakeholder groups.

Non-technical barriers

- Negative publicity on wind turbines.



Summary

In the region of Combrailles in the heart of France a group of citizens wondered why they let private developers extract value out of their community. They knew they could set up renewable energy projects themselves and set up a REScoop in their community. The REScoop demonstrates two strengths of the REScoop model. Every member is a stakeholder and a possible added strength to the organisation. You can start small, but through the involvement of your members as stakeholders a REScoop can grow. In addition, their projects were not projects they thought of themselves. They borrowed the ideas from other REScoops throughout Europe.

About the REScoop

Combrailles Dubrailles is a REScoop of 170 members. They started off as an association to promote renewable energy. The start-up of the association was a reaction to industrial projects carried by private foreign developers on the community's lands in the mountains of the North of the Natural Park of the Auvergne Volcanoes (Parc des Volcans d'Auvergne). The association decided to build the windpark themselves.

"During a public meeting of the local community in December 2008, we wondered why we would let the private developers export the added value of their project instead of promoting renewable energy sources ourselves by setting up a village cooperative; the president of our village community, M. JM Mouchard then replied: "go on, do it!"

The REScoop started with a small project. They put solar PV on the roof of a local school. Soon they used their knowledge again and did it in a neighboring village and are continuing to put solar PV on roofs in different villages in the area.

About the project

The REScoop started off with large ideas. They wanted to develop a windpark themselves. Soon they found out that "wind projects would be too difficult to put in place, so we started with solar PV on the roof of the local school." Soon they repeated the project in a different village nearby. Now they have the confidence to start the wind project, but they continue to do small PV projects in the meantime.

The roof of the local school is owned by the municipality. The local municipality was very positive about the co-operative and was very helpful in the PV projects. This helped the REScoop to get local support for the projects and to get people involved.

REScoop - Combrailles Durables

Official year of establishment	2008 as an association and September 2010 as a cooperative (SCIC)
Members	170
Project name	Combrailles PV
Country	France
Renewable Energy Source(s)	PV (installed and a project of installing more) + wind (still in process)
Best practice	Involvement of stakeholders and alignment of their interest
Mentor	Isabelle Gardères

Start small, learn and grow.

The strengths of the REScoop model is that it is not necessary to start on big renewable energy projects. It can grow organically. You built up social and financial power by doing small projects like the PV projects on schools in France. Also it gives the board the opportunity to build up experience.

“If you tell people “come, we need you” they flee! But if instead you tell them “For €50 you can become owner and therefore producer of energy from the equivalent an A4 sheet of paper in PV cells” they invest €50,- and follow the rest of the adventure as spectators. Little by little from the spectator ranks, a few come and give a hand (for example they bake a cake for the General Assembly, they spend an afternoon helping to dig a grounding for an electrical equipment, they use their contacts to accelerate the connection to the electrical grid (ERDF), they talk about the project to their friends and family, etc.). From the beginning of the project we benefited from the marketing of the “happy few”, the project was good and being a part of it was a privilege.”

Now the REScoop has grown in a short time. Here again, they made use of the REScoop model. The fact that other REScoops are often willing to share their knowledge. When asked who initiated the project they answered: “Not us, we created the concept, but we ‘stole’ all the ideas from other projects: From “Energie Partagée du Maine et Loire”, created as a SCIC for a “one shot” pv project on the rooftop of the local council buildings; from the Poitou Charentes region that wrote and set up online the convention for using its buildings for a pv installation from the Belgian cooperative “émission zéro” and the children’s windmill, from Enercoop for the SCIC legal statutes. Many of these new projects are still in development but with the support of other REScoops they are confident they will succeed.

At the moment Combraille Durable has an organization that is run by volunteers. For the work related to the PV production almost nothing needs to be done except 1 to 2 billing per year and security check of the installations that are taken care of by the volunteers in their spare time. Most of the volunteers who are in charge of the security checks are retired and they organize themselves to take turns to do the security checks.

For the PV projects in progress it really depends on the project and on the volunteers available per week. For instance, tasks that need to be done by volunteers are finding a lumberjack to take care of cutting the trees around the installations and to give a hand on the installation site for a day.

For the other projects, especially the wind project they are trying to put in place, they have a volunteer in charge of checking the wind measuring mast and recovering the data measures and another volunteer compiles the data and sends everything to a third volunteer who’s a physics lecturer at the university of Clermont-Ferrand who studies the data with his students.

Best practices

- Foster social power. Use the social and organizational strength of your members as stakeholders.
- Get support of your local municipal, it gathers trust with the local community.
- Contact other REScoops for ideas and learn from their experience.

Non-technical barriers

- Bureaucratic barriers.
- Not sufficient time because the organization runs on volunteers.



Summary

LochemEnergie is a relatively young REScoop. It often takes several years before you start producing energy as a REScoop. LochemEnergie decided not only to focus on the future when they start to produce their own energy. They found different stakeholders to start innovation projects. The best practice of this REScoop is that in a short time they involved government agencies and big grid companies to start new projects in their community. This way the REScoop could built up their knowledge and organisation in the time between start-up and production of energy.

About the REScoop

LochemEnergie is a REScoop that was initiated in consultation with the local government. The local government’s new policy focussed on the production of renewable energy. The local government found a business partner to set up a large solar power project. The Alderman felt that the citizens needed to be included in the partnership. Soon local citizens came up with the idea to set up a local REScoop as a partner in the project. This completed the three pillars for a good community project. All three pillars, business, citizens and government being equal partners and took their role in the project.

The idea of a local REScoop was enthusiastically received by the local government. A local conference was organised and the REScoop was launched. 600 people signed up in the first two months to become potential members as soon as the REScoop was founded.

Then the actual work started. The goal of the REScoop was to produce renewable energy in the region. The road from founding the REScoop to actually producing their own energy can sometimes be a long road. To start LochemEnergie organised themselves as a consumer cooperative to buy renewable energy and selling it to their members and also collectively bought solar panels with their members. In addition, they started several innovative projects in the region.

About the projects

Next to their core tasks, buying and selling renewable energy and buying solar panels collectively with their members, the REScoop started some innovative projects in order to develop their knowledge about the production of renewable energy. Also, the new projects were a good way to generate attention through the media and to receive additional funding for institutional support: internal organisation, marketing and communication; and later for professionalization of the cooperation.

REScoop - Coöperatie LochemEnergie U.A.

Official year of establishment	2011
Members	330
Project name	Innovation projects PV and wind
Country	The Netherlands
Renewable Energy Source(s)	Sun, wind, hydro
Best practice	involvement of stakeholders and alignment of their interest
Mentor	Jim Williame

One project was the creation of a new development process for wind energy. A partnership between different cities in the region was working on a new policy for wind development in the region. They were looking for a participatory approach to attract citizens in the process. The partnership involved the REScoop in the project.

The REScoop hired three external consultants. Not to create and execute the development process for the REScoop, but to share their knowledge and facilitate self-learning. The rest of the project team were volunteers of the REScoop. In the end, the project only cost a third of what it would cost if external consultancy companies would have created the wind process. "Then you would only have had the report. The execution of the plan would have to be done by these external consultancies as well." In this project the REScoop members developed the knowledge about wind projects by citizens and more importantly they learned to execute the development process themselves. The regional government became very interested in this new model for innovation. They saw that this way the money and the knowledge remained in the community.

A second project was the development of a smart grid. In the Netherlands, the grid is owned by large companies that act autonomous but are owned by the government. It is not possible for citizens to develop and own their own grid. The REScoop knew the national government had started a call for pilot smart-grid projects. The REScoop would place 110 solar panels on the roof of the municipal building. The members would rent the solar panels from the REScoop for a price that is related to the cost of the energy production. The grid company would research and develop a smart grid that organises the balancing of energy on a local level.



The alignment of interest did not come naturally. The grid-company wanted to do a traditional research project. That means, they would do the project, once they would have developed the knowledge within their own organisation. The Dutch government paid for the project. This money was for the development of the smart grid. LochemEnergie also made an investment and consequently they had asked the REScoop to sign up for three more energy innovation projects with a total investment budget of 700.000 euro obtained from the provincial government. This was not a gift but a revolving sustainability fund, meaning the REScoop shall pay back the investment to the government.

The REScoop asked that the knowledge was shared and that the production of energy would remain in the community. The grid company agreed after some negotiations that a part of that money would be a considerable part of the investment for the solar panels. This way the business case for the REScoop would be financially sustainable even when the project was finished after three years.

"This was a hard negotiation." According to Tonnie Tekelenburg, boardmember of LochemEnergie. The REScoop knew the grid company needed the local co-operative. "They knew that they would never have found 250 participants for the project on their own if those participants did not directly see the benefits." The development of knowledge and the fact that the solar panels would become the property of the REScoop was a clear reason for REScoop members to participate. "This way we established an alignment of interest, we needed the Dutch government to make the pilot project financially sustainable, we were able to learn from the grid company and become the owner of the production installation." The other partners needed us to reach the members of the REScoop.

Relationship with the local and regional government

From the beginning there was a clear separation between the local government and the REScoop. The alderman clearly stated that this was a citizens cooperative and that the local government would have no influence in its organisation or its policy.

This had two consequences. The REScoop had the freedom to handle without any restrictions from the government. On the other hand, even though the local government was pleased with the REScoop because they could contribute to the renewable energy policy of the local government, the local government would not substantially nor long-term fund or subsidize the start-up of the REScoop.

However, the government had a clear interest in the fact that the new REScoop was started. They saw them as helpful in reaching their goals on renewable energy policy. There was a small budget to start new projects. Mostly external consultants would have been hired to do these projects. For example most local governments have done a technical study to research the potential of renewable energy production in the community. Now these studies are put out, but the REScoops are partners in the project. They do not get paid, but help in the research. This way they develop their knowledge and strengthen their organisation.

Best practices

- Develop knowledge within organisation by innovation projects.
- Stay autonomous as a REScoop.
- Know what you have to offer as a REScoop.

Non-technical barriers

- Slow innovation at large companies.

Alignment of interest

Starting energy innovation projects as a REScoop can work out as a win-win-win situation if every party knows to recognize each others interest. The local government has an interest because a well organised local REScoop helps to reach their renewable energy goals.

In addition, it is in the interest of local governments that the knowledge that is developed in a project in the community remains in the community. This can spark new local entrepreneurship and business. REScoops can help companies that benefit from the innovation to create support among their members. However the support can only be created if the REScoop and therefore the members clearly benefit from the project.

Technical and economic sustainability of the project

Som Energia Societat Cooperativa Catalana Limitada



Summary

Som Energia is a young initiative that became a financially stable and strong co-operative with more than 6000 members in only two year. Therefore this provides best practice learning in the area of financial sustainability. With a low-cost start-up and a financing model that is based on direct investments by their members, despite the current financial crisis they had the ability to flourish. Som Energia can therefore be considered as a good example for starting REScoops.

About the REScoop

Som Energia is Spain's first renewable energy cooperative. They sell electricity to its members, competing with the 'big' energy companies. Som Energia produces their own renewable energy with relatively small scale projects, set up close to where their members live. They started as a small initiative focused around people at the University of Girona but soon spread towards Barcelona and the rest of Catalonia. Now almost 40% of their members live in other parts of Spain. Thirty local support groups have sprung up, holding regular town meetings to explain the business model to other interested citizens.

Their production/consumption model was based on an already well developed and successfully functioning REScoops in northern European countries such as Belgium (Ecopower) and Germany (EWS, Greenpeace Energy).

The Som Energia cooperative is 100% owner of three limited companies. All projects are developed within these companies. Everybody invests within the cooperative, the cooperative, based on general criteria agreed on by the General Assembly, selects the projects and makes the investments. All members share in the results.

A first project (100 kW solar panels on an industrial building) was bought last year and has been producing for almost one year now. Eight more solar projects are in various stages of development totalling around 700kW. A 500kW biogas project is under construction and will start production in the summer of 2013. Investment in this project totals 2,200,000 Euros. "This will be the first cooperatively owned biogas project in Spain. Total investments this year will amount to around 3.5 million Euros by Summer 2013. Som Energia will produce electricity equivalent to the usage of about 1400 average customers.

Financial sustainability is achieved, even in a crisis

To become a member, you require a deposit of 100 Euros in the cooperative's social capital. After 26 months of official activity, Som Energia now has more than 6,100 members – meaning a total of 610,000 Euros in social capital. This continues to grow as every month around 800 new members sign up.

Som Energia Societat Cooperativa Catalana Limitada

Official year of establishment	2010
Members	6114
Project name	Som Energia
Renewable Energy Source(s)	Solar, hydro, biogas (summer 2013), wind (2014)
Best practice	Technical and financial sustainability
Mentor	Gijsbert Huijink

As a non-profit cooperative Som Energia started selling its members green energy bought from third party sources in October 2011. A government supervised system of certificates of origin guarantees it is indeed renewable energy. As around 35% of electricity produced in Spain is from renewable sources, and the demand for green electricity is still in its infancy, there is currently an oversupply of these certificates. Selling green electricity therefore does not carry an extra cost.

“If this was all we were doing, it wouldn’t amount to much of a change. It would just separate ‘green’ electricity consumption from ‘grey’.” Most of the big electricity companies also offer this. What makes Som Energia different is their goal to produce 100% of our members’ consumption via new renewable production projects, owned by the cooperative and financed by its members. “We just activated the possibility for our members to invest.” The first results are very encouraging, at the date of the interview (Feb 13, 2013) around 700 members had invested in total 2,800,000 Euro, an average of 4000 Euro per investor.

Keeping development cost low

In some countries the Co-operative’s activity would have been subsidized by the government, lottery funds or other private foundations. In Spain, this kind of money is, especially in the current climate of crisis and austerity budgets, not available. Up to now Som Energia has received no subsidies at all. This has not reduced the determination: “The current crisis has only made us more determined to succeed, to be efficient and earn our own bread.”

Som Energia’s low development costs are possible because most of their processes are web based. “Currently, all we have are six computers, a database somewhere in ‘The Cloud’ and lots of enthusiastic unpaid, volunteer members, active as salespeople or project ambassadors which help us grow every day.” Som Energia does not have a formal media budget, spends no money on advertising. They have a 90 m2, functional office in Girona Technological Park. They avoid sending mail, such as paper invoices or paper membership certificates to their members. They do not have company cars, and pay only regular salaries (no fancy bonuses) to its three full-time and four part-time employees. The first year the organization was run by volunteers alone. Most volunteers contributed on a part time basis, but they also had a few full-time volunteers, since they were unemployed. Som Energia actively uses Facebook and Twitter (both run by volunteers), social media have proven effective, both as a communication tool to the growing group of members as well as a low cost (in terms of media and effort) and low threshold (for citizens looking for information) medium to reach new members.

Som Energia shows the importance of the REScoop 20-20-20 project

The success of Som Energia shows the value of the RES cooperative network and the Intelligent Energy Europe REScoop 20-20-20 project. The contacts in the project meetings followed up by exchanges with especially Belgian REScoop Ecopower have been important for the success of this project. No time was wasted on re-inventing wheels, many ideas and concepts could be directly applied and the project avoided several costly mistakes. Getting advice, especially having an informal and personal contact that allows you to just pick up the phone to ask a question, is of great value. Especially, of course in the difficult circumstances of entering, as a small player with a new concept, a market dominated by established energy giants.

The power of volunteers can be more than local and can include specialist knowledge

Even the expansion of Som Energia throughout Spain was managed on a low budget. Volunteers from throughout the country help grow the REScoop. Som Energia started in Girona, but was open to members from the whole of Spain, the founders were uncertain if the concept would appeal outside their direct communities. However, it turned out that almost from the start, people from around the country got involved. Currently 10% of the members are from Girona, 51% are from the rest of Catalunya (mainly greater Barcelona) and the remainder is from the rest of Spain.

Spontaneously local support groups have sprung up. These are groups of volunteers who actively promote the cooperative in their community by organizing town meetings, participation in (environmental) fairs, communication with local newspapers, etc. They also organize educational meetings for members by members on issues concerning energy.

And finally, even the Som Energia technical development is run by volunteers. Som Energia has working groups where the technical details of wind, solar or biogas are being studied and also where plans are made for future activities in the electricity market.

A REScoop can flourish in the crisis, probably as this is also a crisis of trust



Normal bank finance is very hard to secure in Spain. One would believe that nobody is willing to finance any project anymore. This did not hinder Som Energia. Their financing model is based on direct investments by members. As the organization has been able, with the help from REScoop 20-20-20 partners avoid major disasters and quickly deliver promising results, at least the members had the confidence to provide the required financing. As a result it is one of the few Spanish RES energy projects that is not affected by the crisis. It may well be that in this crisis, at least in part caused by banking funded fraudulent and corruption tainted real estate excesses, Spanish citizens are now more open to this type of citizen managed and trusted alternatives.

The financial stability of the Som Energia REScoop and the continued interest of new participants led to other project developers offering Som Energia their projects, often in an advanced state of development, as these developers could not get financing from banks. This saves Som Energia on these projects two to three years of development time.

Flexibility was key in a changing environment

As in many EU countries the government in Spain proves to be an unreliable partner that changes the rules of the game while the game is already being played. At the beginning of 2012, the Spanish government froze all feed in tariffs to new renewable energy production projects. This means that if Som Energia had only had the business line of setting up new RES production projects, like many other REScoops, all its projects would have been paralyzed.

Non-technical barriers experienced

For starting a REScoop, the main hurdle are the complicated energy laws and administrative requirements that a company in this sector has to meet before it can produce or sell energy via the public network.

It took SOM Energia nine months to get a permit to operate in the Spanish system. The financial cost was not very high, but the process was time consuming and frustrating. Repeatedly very complicated, often (partly) the same, technical/commercial legal documents had to be prepared and handed into various ministries and organizations, with strict procedures that seem devoid of human logic. This frustrating process is clearly a big barrier to entry for new and small players.

The Spanish energy system is open to players with a minimum purchase quantity 100 kWh in the daily market and 1000 kWh in the future market. These quantities are of course problematic for smaller players as when you do not attain that minimum you have to enter 'zero' as the purchasing forecast for that hour of the day. All consumption of clients during that 'zero' period is afterwards billed at a punitive 'deviation' cost price. Another problem is that you only know after roughly 9 months how much the kWh that you bought will finally cost you.

Fortunately, Som Energia had the broader social goal of transforming the energy system which had already led to a successful line of business that was not affected: selling renewable electricity to members. Also Som Energia was able to take over projects that already had agreed feed in tariffs but could not secure bank financing. Finally, it has the possibility to invest in energy saving and heat production projects, which do not require state subsidies. Another recent retro-active measure specifically affecting renewable energy is the new 7% production tax on energy. Producers of fossil and nuclear based electricity can transfer this tax to the market, but for renewables the net feed in tariff is fixed.

Best practices demonstrated by the Som Energia Rescoop:

- Low cost start up.
- Quick project development.
- Transparency in finances.
- Volunteer involvement.

Non-technical barriers encountered

- Energy laws and administrative requirements.
- Retro active changes of rules and tariffs.

Photograph by Louis Visseren



Summary

Near a little village Weteringbrug, just next to Amsterdam Airport the REScoop Meerwind has two wind turbines in operation. One of these will be replaced, another is planned for 2014. The REScoop has around 1000 members. 250 members provided the loans for the new projects. The REScoop has raised 1.2 million euros, which is sufficient equity capital to ensure a loan from the bank. The total investment is estimated at 5 million euros.

The project of the two new turbines did not come easy. The REScoop had to deal with a long authorization process, unexpected costs and uncertainties about government subsidies. The subsidy was necessary to ensure one of the wind turbines would be profitable. The low development cost, the fact that the members cared more about the renewable energy production than their return on investment and the resilience of REScoop's board members made the project into a success.

About the REScoop

Meerwind was established in 1989 in Hoofddorp. The 24 year old cooperative built its first wind turbine, the Mermaid in 1993. Hoofddorp is built on reclaimed land, which the Dutch call "polder". Three years later they placed their second wind turbine called the 'Polderjongen'. Almost 20 years later this wind turbine is being replaced by a more efficient one: 'the New Polderjongen. An additional wind turbine is planned at another nearby location.

Members contribute a yearly fee of a minimum of five euro's. In addition members can provide loans to the REScoop when new capital is needed to fund a project. The loan is fixed for a period of 15 years, after which it can be retrieved yearly, irrespective of the amount. The REScoop's division of power is based on the one-man one-vote principle. The wind turbines are owned by the cooperation, meaning ownership is shared by the members. "We have organised it this way, because it is the most transparent and we believe that this way the members feel more involved."

REScoop - Coöperatieve Vereniging "Meerwind"

Official year of establishment	1989
Members	1006
Project name	Nieuwe Polderjongen
Country	Netherlands
Renewable Energy Source(s)	Wind energy
Best practice	Financial and economic sustainability of the project
Mentor	Gerard Jansen

About the project



Early 2013 Meerwind has started to build their new wind turbines (both Enercon E70). The first replaces the 20 year old Micon M700 that produced energy for about 120 households. The realisation process of the project of the two new wind turbines has a long history. The initial idea for a new project came up in 1998. It has taken the REScoop over 15 years to actually start building one of the planned wind turbines. The first applications took so long, that in 2007 the wind turbine that was originally planned and licensed by the authorities was not produced anymore. The REScoop reconsidered the project and decided to apply for a building permit for a small wind farm of five wind turbines instead.

The permit application was carried by a legal entity (a "VOF"), a collaboration of the REScoop and a number of farmers. In 2009 the local authorities approved the application. However, at that time the nearby airport objected claiming that the new turbines would create additional costs for the airport. The local authorities requested the REScoops to assume the risks of potential future legal claims against the government. This risk was considered too big for the REScoop, so it was decided to drop the plans for a small wind farm and apply for permission to build only one wind turbine, on the location of the first turbine, de Polderjongen.

The legal entity (VOF) was dissolved, the REScoop sold its claims on the other parts of the five wind turbines and the received permission to build this single. In 2011, the REScoop called on its members to invest in this new turbine. Within a short time span, the members provided the capital, an investment of 650,000 Euros which was sufficient to secure the required bank loan for the new turbine.

However, the REScoop could still not start building the turbine. At this time, objections were made by a landowner who had also wanted a wind turbine on his land. The landowner had taken his case to the highest court that decided that the application procedure needed to be reviewed. To find a solution the REScoop started negotiating with the landowner, who eventually agreed that he would drop the case if the REScoop would build a second wind turbine on his land. In 2012, the members of the REScoop agreed to this solution in a General Assembly. Instead of one turbine, the REScoop would build two turbines. Again the board sent out a request to the members asking them to participate and provide loans for the second turbine. Nearly 250 members responded and another 600,000 Euros on loans was secured. The total amount of 1,250,000 Euros was sufficient to secure the 30% equity capital requirement for a bank loan.

In 2012, the project finally started. It was developed by members of the REScoop. Most of the hours spend on the project were unpaid hours which made it possible to keep going for such a long time. "If we would have had to pay the hours that the board members put in the development of the farm, we would either have stopped the project, apply for higher government subsidies and risk not getting them, or the project would have been less profitable which would risk not getting a bank loan".

The project encountered several other unexpected hurdles. One important issue concerned the grid connection. The grid company had provided a quote for one wind turbine. This wind turbine would have been connected to a substation 400 meters from the turbine. When a second wind turbine was added to the project a new quote added another 400,000 Euros. The grid company decided that the two turbines had to be connected to an electricity substation at five kilometres distance, and that the REScoop was obliged to carry the costs of the maintenance of the cable.

Another obstacle was encountered as well. The duration of the procedure had made it difficult to keep landowners to their commitment for use of their land for the wind turbine. 15 years is a long time for farmers who expect an additional income from rent on their land. Some had found ways to dissolve their contracts and changed to other project developers.

Other motives for investment

In 2013, at the General Assembly meeting, the REScoop questioned their members. They were interested in their motives for investing in the cooperative projects. Only a few responded that the return on investment was their main incentive. Others indicated that they were more concerned about the production of renewable energy.

The first turbine of the new project was profitable. However, the profitability of the second turbine was uncertain. All development costs, including the additional costs of the connection to the grid, had been accounted to the business case of the first wind turbine. This had made it possible to obtain higher government subsidies for this turbine.

However, the subsidy application for the second turbine was submitted a lot later and its approval was uncertain. "We then asked the members if we should continue with the second wind turbine, even though it was not sure if it would make a profit."

However, without subsidy the second wind turbine would lose money. "Other wind developers would not have started to build the wind turbine." When the investment paradigm is to make a return on investment, projects will not be built unless it makes a profit. In the REScoop model other motives are also important. Therefore the members of this REScoop decided that return on their investment was less important than the production of renewable energy.

Best practices:

- Other motives for investment.
- Local connections with politics.
- Resilience and low cost development

Non-technical barriers:

- Contracts with landowners.
- Contracts with long term manage expectations.

Taking the hurdles

A REScoop with a connection to the community is more flexible to deal with these hurdles. The board members of the REScoop live in the community and know people in the local government. This way they had access to information on procedures. It also gives the opportunity to work together with the local government to find new possibilities when they encountered a new hurdle.

The low cost development of the wind turbine gives the REScoop the opportunity to continue a process of 15 year. Also the other motives for investment gives the REScoop the flexibility to agree with lower returns on investment.



Summary

L'association Éoliennes en Pays de Vilaine (EPV) is a REScoop that has been working on a wind energy project for more than 10 years. In 2013 they will establish their first wind project. As a REScoop with no production of their own they needed to find a way to cover the first phase of the authorisation process for the wind turbines. In France this phase is very intensive and difficult due to very strict regulations and the amount of bureaucracy. In order to do this effectively the REScoop has set up a professional company with the involvement of different local stakeholders. By setting up a professional company the REScoop secures the technical and economic sustainability of the wind project. The lessons of EPV are very useful for starting REScoops having trouble getting through this first phase. It demonstrates that a high level of professionalism and entrepreneurship is needed.

About the REScoop

Eoliennes en Pays de Vilaine was created in 2003. The association was created with the idea that wind power is a natural, inexhaustible and decentralized resource which exploitation should profit the local communities. The idea came from a couple of market gardeners at Ste Anne-sur-Vilaine (in the French region of Brittany and in the Department of Ile-et-Vilaine) and a sculptor from Sainte Marie who wished to set up a wind project. Very quickly a group of people were formed around them to plan the project and its objectives. These objectives were to have a community-owned renewable energy source, to think about a sustainable and citizen-owned development of wind power, to use part of the profits to promote energy saving and to share knowledge and experience.

About the project

It took ten years for the project to become tangible. The steps the REScoop had to reach were the classical technical and administrative steps that any wind project has to achieve, but there were also specific steps linked to the fact that the project was based on citizen financing and collective learning. EPV started off looking for projects in the area of Vilaine. The first projects that were identified were put off because of landscape (Ste Anne sur Vilaine, April 2004) and aeronautical restrictions (Saint-Marie, April 2005). The association did not give up and started feasibility studies over the Pays de Redon area (June 2005).

REScoop - L'association Eoliennes en Pays de Vilaine (EPV)

Official year of establishment	2002
Members	89
Country	France
Renewable Energy Source(s)	Wind
Best practice	Technical and economic sustainability of the project
Mentor	Michel Leclercq / Pierre Jourdain

After having identified several zones, EPV with the support of many voluntary workers, started the development of two citizen wind projects in two areas (Sévérac-Guenrouët in the Department of Loire-Atlantique in the region of Pays de la Loire - next to Brittany - and Béganne in the Department of Morbihan in the region of Brittany).

In 2006 the wind project came at a stage where it could not be done by only volunteers. The association first worked with a project developer as a partner. Then after abandoning two installation sites in 2004 and 2005, the project developer moved on and gave up on the project. The association decided to hire an employee and created a company Site à Watts (SARL - limited liability company) to keep the project from going to other private developers. With the support of many voluntary workers, Site à Watts obtained two construction permits in 2009 and 2011, allowing the creation of Bégawatts a separate company that will be responsible for the exploitation of the new wind park.

Setting up a company



The REScoop EPV brought several stakeholders together to set up the company Site à Watts. First there were the founding members. EPV, twentyfive founding members, three local investors clubs (CIGALES in French) and a semi public company from the Department of Loire-Atlantique (Société d'Economie Mixte in French) invested in the capital of this company. The company functions now as a project developer that only develops citizens owned wind parks in France.

As mentioned the development of a wind park in France is difficult due to many regulations and bureaucracy. This makes the first phase of wind projects a precarious undertaking. The total costs for development of a wind project is around 250,000 Euros per project, not taking into account the time spent by the voluntary workers. To get the venture capital together for setting up the company that would undertake this development EPV included several stakeholders. The twentyfive founding members invested 400,000 Euros. Other stakeholders were so called CIGALES. CIGALES are investor clubs which invest only locally and in ethical and solidarity-based projects, these clubs represent more than 700 people.

Another stakeholder is Energie Partagée Investissement which is a national citizen investment fund that is authorized by the public financial authority to conduct public offerings. Also important is a group of local entrepreneurs in the sector of social and solidarity-based economics.

All the studies and applications were done by Site à Watts with the help of volunteers. The different studies (wind, noise, impact studies, architectural plans, legal statutes, economic expertise) were validated by specialized firms. However, the founding members kept the coordination and the management under their own control. Today it is Site à Watts Développement that takes in charge the technical, legal and financial follow-up of the project.

EPV wanted to mobilize as many small actors who will be implicated and empowered in the management of their needs for electricity. To keep a role for the public and private local actors involved they used a cooperative governance: one member = one vote inside each body of the organization. The company is structured with different bodies of stakeholders. There are five bodies in the governance of Bégawatt, a body of founders that holds 35% of the votes, a body of "citizens investment clubs" 30%, a body of Actors of the local investment 12% a body of actors of the social economy 5% and the body of Energie Partagée Investissement holding 18% of the votes.

Opposition and set backs

The REScoop encountered many different difficulties during the wind studies phase. One example were faulty anemometers that forced them to take more pessimists margins for the evaluation of the site. Similarly for the acoustic studies made in 2006, the regulation for the studies changed between 2006 and 2011/2012 when the counter studies were done. This forced them to consider setting up additional restraints to limit the maximum speed of the wind turbines. Both these points will be confirmed or not during the operating of the wind park, after it is built during this summer.

Several twist and turns delayed the starting of the works. For instance, last year a national association against wind power and against feed-in tariffs for wind power brought an action to court. "This action delayed the progress of wind projects including ours." Indeed, for several months the case of EPV did not progress with their banking partners. Until today the REScoop is still waiting for the buying contract signed by EDF.

Overall, the delays were mostly linked to administrative and legal questions outside the project and which impacted the whole sector of wind power that is less supported by the State in France than in other European countries.

The REScoop solved most problems themselves, but they also received a lot of support and help from their stakeholders and network. Michel Leclercq: "There were of course moments of doubts, but we always managed to go on, thanks to the dynamic of the association allowing us to benefit from multiple skills and support of networks. The interest aroused by the project helped us overcome the obstacles. The support was diverse: economical, political but also when necessary moral."

Best practices

- Involving many local stakeholders with same interest in citizen participation and social economy.
- Dividing the risk of development and exploitation into two separate entities.

Non-technical barriers

- Administrative and legal barriers.

Financing schemes and participation of citizens as shareholders

Torr's Hydro New Mills Limited



Summary

Torr's Hydro is a small REScoop that built the first community owned hydro scheme in the United Kingdom. They created a unique financing scheme that enabled them to start such a project in a small community. The money to finance the project comes from throughout the United Kingdom. Nevertheless, Torr's Hydro operates the hydro-electric scheme for the benefit of the community. Torr's Hydro is a best practice because they managed to create that local identity for the project while using a nationwide financing scheme. It shows that a REScoop is not restricted in finding the money needed for a community owned project to their own community.

About the REScoop

Torr's Hydro New Mills Limited was founded in 2007 and is incorporated as an Industrial and Provident Society (IPS). An IPS is 'an organisation that conducts industry, business or trade either as a co-operative or for the benefit of the community'. They are democratically organised on the one person one vote principle irrespective of the amount of shares bought. There are about 230 shareholders. Two third of the members are from New Mills and the close surroundings and invested one third of the equity. One third of the shareholders came from elsewhere in the country investing two third of the equity.

Torr's Hydro was the first community owned hydro scheme in the United Kingdom, which created quite some publicity. The Energy and Climate Change Minister, Greg Barker, called for a watermill renaissance saying: "I'm calling on communities across the UK to harness the power of their rivers and streams to generate electricity and money. The community of New Mills in the Peak District are already doing this."⁴

About the project

Before Torr's Hydro existed, Richard Body (now director) was talking to a company called Water Power Enterprises. The company was looking to build a hydro turbine in the rivers of New Mills. The community decided that they wanted to become owners of the project and see the benefits come back into the community. The company agreed and worked together with the initiators of Torr's Hydro.

REScoop - Torr's Hydro New Mills Limited

Official year of establishment	2007
Members	230
Project name	The screw: community owned hydro scheme
Country	United Kingdom
Renewable Energy Source(s)	Hydro
Best practice	Financing schemes and participation of citizens as shareholders
Mentor	Esther Jones

⁴ See: <https://www.gov.uk/government/news/barker-calls-for-water-mill-renaissance>

The building of the scheme was carried out by Western Renewable Energy (WRE), a company specialised in hydropower. The building was quite an endeavour. The scheme uses a 9m long reverse Archimedes screw turbine weighing 10 tonnes. The placement in the gorge was the main obstacle. The gorge is a historical site near the old Torrs mill with a history of business activity. Therefore, archaeologists had to be involved in the construction. WRE did a month of archaeological excavation before they could start to remove 3 meters of Gritstone bedrock. After building the structure to hold the turbine, including a fish pass, the turbine was lowered from the historical Union Bridge into place.

The system is rated at 63kW and is designed to produce around 240,000 kWh of electricity per year. This is the equivalent of the annual electricity demand of around 50 typical British homes and saves over 150 tonnes of CO₂ emissions compared to conventional electricity generation. The scheme has been producing electricity since September 2008, and to date has generated over 700,000 kWh. The local Co-operative supermarket purchases all the electricity.

Financing scheme

To finance the project Torrs Hydro had calculated they needed £126,000 in shares and £70,000 in grants and £25,000 in loans. They issued a prospectus with minimum investment set at £250 with shares of £1 each. Within two months just under 126,000 came in. The total cost of the project was higher than expected so Torrs Hydro acquired extra grants from the Co-operative Group. The total cost of the scheme was around £330,000.

The success of the project came as a surprise for the board members. They had not suspected to raise the money in such a short time. Esther Jones gives three reasons for the success. "It was all very clear. We had a firm closing date 31st of January 2008, we had a clear target to raise £126,000 and because it was new we had a high profile and local promotion."

Attracting money from outside the community

The money received came from, one third from the community itself, the other two thirds from elsewhere in the country. The small REScoop managed to set up a financing scheme that acquired most of the money they needed from outside the community for a project that benefitted the community of New Mills.

The success of the scheme was a result of a well organised communication plan. Torrs Hydro hired a Public Relations professional that generated a lot of attention. The story was picked up by the national media like the BBC. Several environmental groups like Friends of the Earth helped to spread the share issue around the country. The board organised tours to the site. The board remained very approachable for questions from potential investors. Extensive use of internet and social media was used. All this resulted in receiving the investment needed to build Torrs hydro scheme.

The board was very clear in their communication that the project would generate money for the community. Part of the profits would be re-invested in projects in New Mills. By making this clear the board felt it would discourage members that invested only for quick profit and attract people that would accept that part of the profit was reinvested in the community.

The board estimates that a yearly fund of £3-5000 pounds will be put in the community fund. All members decide on what project is will be spend on. Several ideas have already been put forward by the members, like energy savings and environmental education projects.

Working for the community

Torr's Hydro was registered as an IPS so that the community could own the hydroelectric scheme and operate it for the benefit of the community. To do this, Torr's Hydro has a set of rules that set out the corporate objectives as mentioned on their website and worth repeating here:

- Help regenerate the community and environmental sustainability of the New Mills area;
- Advance education, particularly concerning asset based community development and enterprises with a community or environmental focus
- Provide an opportunity for public-spirited people and organisations to contribute financially to the community, with the expectation of a social dividend, rather than personal financial reward.

Examples of the ways in which the aims are carried out include:

- Developing and operating a grant system out of the revenues from the Scheme
- Developing an educational programme on environmental issues
- Developing new or existing services to the local community that contribute to the local economy.

Best practices

- Have a clear proposal, with set date and a clear target.
- Clearly communicate that it is a project that is created for the benefit of the community.
- Do not be afraid to hire professionals.

Non-technical barriers

- Non mentioned.



Summary

Energy4All is a company owned by eight REScoops in the United Kingdom. The company was set up by Baywind Energy Co-op to secure participation of local citizens in large wind projects in the United Kingdom. Energy4All was created due to daily enquiries received by Baywind Co-operative from people looking to replicate the success of Baywind, the UK’s first community-owned wind farm. Energy4All demonstrates that one REScoop with a good functioning financing scheme can share its knowledge with many and adjust it to local circumstances. This is a good example on how REScoops can create an acceleration in the REScoop movement and the energy transition.

About the REScoop

The history of Energy4All starts in the mid-1990s when an innovative Swedish company came to the UK to establish the sort of community ownership of wind farms that were already common in Sweden. This was the beginning of Baywind Co-op, the UK’s first community wind farm co-operative. Baywind flourished and by 2001 owned and operated the whole project. “It is now by far the oldest co-operatively owned wind farm in the UK, with over 1,300 members and a proud track record of stability and profit.” With the confidence gained from running Baywind, the management team became concerned at the lack of similar initiatives elsewhere. As a result, the Baywind membership enthusiastically supported the creation of Energy4All in 2002, to help other communities achieve the same as Baywind.

REScoop - Energy4All

Official year of establishment	2002
Members	8 Co-ops and Directors of E4A
Project name	Energy4All local financing schemes
Country	United Kingdom
Renewable Energy Source(s)	Wind
Best practice	Financing schemes and participation of citizens as shareholders
Mentor	Anette Heslop

The company has established a strong track record of success. They have created a series of innovative business models to fit local circumstances from the south of England to the Isle of Skye and raised over £17m through a series of public share offers. The eight co-ops have well over, 7000 members and we have many other schemes in development. The different business models range from landowner led as in the case of Westmill Wind Co-op where the Project was initiated by the Site owner Adam Twine, who is an organic farmer with an interest in environmental and community matters. Developer led as in the case of Kilbraur Wind Energy Co-op where Falck approached Energy4All to explore the idea of offering partial ownership of their wind farms to the local community. Social Entrepreneur led as in case of Drumlin Wind Energy Co-op where NRG Solutions approached Energy4All to explore the idea of community ownership of wind turbines at the 5 sites in N Ireland making it the first Wind Co-operative in N Ireland. Energy4All also enjoys the support of the Co-operative movement and in particular the Co-operative Bank, which is the primary source of finance that Energy4All has borrowed to complete the financing of its projects.

Financing schemes and participation of citizen

Energy projects are capital intensive and renewables are no exception. The Pre-planning stage is the most difficult and risky stage for most REScoops mainly achieving planning permission. Raising the finance for this stage is a significant problem, though Energy4All can help identify possible sources and apply for funding depending upon the circumstances of the proposed project. Once risk funding is in place, Energy4All will provide project management services for the whole planning application process, which can be lengthy, complex and expensive. In parallel with the planning application Energy4All will work closely with the local community on a programme of information and engagement to develop understanding of the issues and to encourage support for the project.

In financing a project you need to differentiate between financing of pre-consent and financing the capital cost of building the scheme. One of the problems Energy4All has in establishing co-ops is that community groups tend not to form co-ops to build the scale of projects we need to develop in order to make them financially viable enough to support the development costs. Once planning permission has been secured, the community group or owner has to secure the necessary equity and loan finance. All this needs a lot of expertise that is often not at hand in a small local community, or the starting REScoop does not have the capital to buy this expertise. This is where Energy4All's expertise in running public share offers for community renewables comes in. A prospectus is written under the FSA regulations and a comprehensive publicity campaign is organised with the local community taking the lead. The aim is to secure the maximum possible community engagement while successfully raising the required capital.

Energy4All has an agreement with a family owned wind developer Falck Renewables that it will offer a co-op stake in windfarms that receive planning consent in the UK. The co-op can raise funds locally and invest them in the wind farm up to a pre-determined amount (usually 4% of the capital cost). This buys the co-op a pro-rata share of the profits generated by the wind farm which the members can distribute. Energy4All are also developing wind parks that are fully owned by a co-operative. Energy4All sets up or helps to set up a local REScoop according to the Baywind model. The local REScoop are autonomous, meaning the local members can choose the board. The local REScoop also becomes co-owner of Energy4All. Or as Energy4All say: "become part of the family."

Shares

Energy4All helps local REScoops to acquire the required capital for owning or purchasing a share in the profits of the wind park by promoting shares in the local REScoop with a community share offer. Energy4All also assists in the arrangement of loan finance if required.

- The principal rights that are connected to buying shares are:
 - One member one vote on resolutions of the Members put forward at the AGM, including in relation to the appointment of
- Directors;
- the right to receive a proportionate annual interest payment, subject to available profits;
 - the right to the return of the original investment during the life of the Project, subject to available surplus assets and any new business of Co-op, as determined by the Directors as a Member, eligibility for election to the Board.

Growing the family

All new Co-ops that become co-owner of Energy4All adhere to the principle that existing co-ops support new co-ops to get established. Energy4All is set out to combine the ethics of a not-for-profit social enterprise with best business practice. Energy4All is now in its eleventh year. It was able to grow because of the support of many highly skilled and experienced individuals who have been prepared to give their time and effort as directors and advisors. As a result, the small Energy4All team has been able to make an unexpectedly big impact.

Best practices:

- Share knowledge.
- Organise co-operation between co-operatives.
- Re-use a proven business model and adjust it to local circumstances.

Non-technical barriers:

- Community groups tend not to form co-ops to build the scale of projects we need to develop in order to make them financially viable enough to support the development costs.



Summary

The electric cooperative of Gignod started as a small hydroelectric cooperative but grew to a cooperative that controls the whole chain, from production to distribution and sale of electricity. Even though the REScoop grew the participation of citizens and the financing schemes remained the same. The democratic and economic participation of the members proved to be a sustainable way of organising the REScoop for more than 87 years.

About the REScoop

The electric cooperative of Gignod (CEG, Aosta Italy), active since 1927, carries out production activities, distribution, sale and provision for the municipalities of Saint Christphe, Allein, Gignod, Doues, Valpelline, in addition to the villages of Arpuilles, Entrebin, Excenex and Porossan. In other words, the Cooperative is able to cover the entire chain that begins with the production of electricity up to billing to all its customers. The main production plant is a hydropower plant named "La Clusaz" located in the municipality of Allein.

About the project

Water is diverted from the stream Artanavaz and the stream Menouve and it is conveyed in two pelton turbines in the main plant thanks to a pipeline that lies completely underground. The generated electricity is distributed in part directly on the lines of the cooperative; the excess electricity is sold to Deval by means of a conduit that reaches the Rhins primary cabin. The electricity produced in Central is transported via power lines to 15kw, to secondary cabins where there is the transformation to use a 380/220V. After processing in medium and low voltage energy is distributed through a ramified network of low voltage to all customers. The metering is done by a modern tele-management system, customer management, billing, the design of new lines and their construction, are handled internally to the cooperative through its technical and commercial Office.

The metering is done by a modern tele-management system, customer management, billing, the design of new lines and their construction, are handled internally to the cooperative through its technical and commercial Office.

Reconstruction of the first hydropower plant

The cooperative wants to start a virtuous development process based on existing concessions. In particular the cooperative wants to recover the functionality of the first plant built in 1927. The industrial recovery and safeguarding local traditions made the REScoop decide to initiate the restructuring of hydroelectric power. This needed to be done in a logical and efficiency way. This means that an agreement with the irrigation consortia and with all partners who may collect and/or pass in the watercourse in order to produce more energy.

REScoop - Cooperativa Elettrica Gignod (CEG)

Official year of establishment	1926
Members	3200
Project name	Reconstruction of the old hydro power plant
Country	Italy
Renewable Energy Source(s)	Hydro
Best practice	Financing schemes and participation of citizens as shareholders
Mentor	Daniele Domanin

The local surroundings are ideal. The territory of Valle d'Aosta with its glaciers and snowfields are perfect for hydropower. However the Region legislation that protect waterways grows ever more stringent, in order to avoid their unconditional exploitation. This is understandable but restricts the cooperative. Nonetheless the cooperative itself has already gained a strong sensibility in environmental protection.

Financing the projects



The financing of the plan for the reconstruction of the 1927 hydro plant was a costly endeavour. The financing of the research, including the design cost 500,000 euro. The REScoop paid this by getting a loan at a financial institution. The process to get this was complex and intensive, especially for a small REScoop like CEG. Nonetheless they were able to acquire the funds with extensive guarantees that the REScoop has several asset such as their headquarters, warehouse, the whole distribution of electricity, hundreds of secondary cabins and the central building.

Sustainable organization of the REScoop

In the 87 years the REScoop exist the democratic control of the members and the organization has not changed. With every expansion of the electrical grid and the production, the members always contributed financially by buying shares. However the amount of shares did not influence the voting power, neither the time when you become a member. Like in many co-operatives the REScoop is controlled by a one member one vote principle. These rights are strictly maintained by internal cooperative regulations and are even secured by the Italian civil code. Equal treatment of members is very important. It is therefore that there has never been disagreement on this issue, according to Daniele Domanin. It gives a solid organisational basis that has proven sustainable. There are no discussions and issues concerning dividends or the relation between shares and voting power.

Best practice

- Integrated organizational structure that secures equal treatment
- Keep the organization as simple as possible. No differences in dividends or voting power between members

Non- technical barriers

- Acquiring funds from financial institutions are long and complex process especially for a small REScoop.

Grid connection and sale of energy

Helderse Coöperatieve Windmolen Vereniging "De Eendragt" UA



Summary

REScoop "de Eendragt", a wind co-operative in the Northwest of the Netherlands, developed an innovative 'self-delivery concept' where the produced energy of one of their windmills is delivered to their members at no production costs. The REScoop only pays an energy company for the administration costs. The members pay for the fixed costs such as the energy tax and network transportation costs. To organise this, some metering and administration innovation was needed at the energy and network company.

About the REScoop

The wind energy co-operative De Eendragt is a relative small co-operative with 137 members in the town of Den Helder in the Northwest of the Netherlands. The REScoop was established in 1989. A first small wind turbine, a Lagerwey LW-15/75 near the town was taken into production in 1993. The founders were technical experts, who quickly developed their technical skills with regards to this type of windmill. The wind turbine was replaced with a Vestas-225 kW wind turbine. Member participate by providing loans. Until 2012, the electricity of the turbines was sold to an energy company. The financial proceeds were returned to the co-operative. Since May 2012 the REScoop started an innovative 'self-delivery' arrangement enabling its members to use the electricity from the Vestas wind turbine themselves.

The co-operative also participates in a larger wind farm. The REScoop received 2/7th of the shares of the company that owns the wind farm. This wind farm is financially and technically very stable, in part due to its service contract. This provided the REScoop with the opportunity to initiate the innovative self-delivery project.

About the project

"The idea for the self-delivery concept originally came from our treasurer", Chairman Rien Haasnoot remembers. The co-operative has a solid financial basis due to its participation in a large wind park on a good wind location. The co-operative has been able to provide a 7% interest on the loans of members for several years now. Apart from that, the financial governmental support (the subsidy SDE) had finished and the mortgage of the first wind turbine was paid off at the bank. "The REScoop had complete ownership of the wind turbine". The treasurer of the REScoop decided to do something else with the electricity of their first wind turbine. This solid financial situation gave them the freedom to start an innovative project with this wind turbine.

REScoop - Helderse Coöperatieve Windmolen Vereniging "De Eendragt" UA

Official year of establishment	1989
Members	134
Project name	Self-delivery
Country	The Netherlands
Renewable Energy Source(s)	Wind energy, solar panels with 30 members
Best practice	Grid connection and sale of energy
Mentor	Rien Haasnoot

Chairman Rien Haasnoot: "Because the windmill was now fully owned by the community, there was a strong feeling that the produced electricity was also owned by the members," The board felt they should find a way to deliver the members' energy 'for free' to the members. There were no remaining substantial costs, apart from the service contract, and that could be paid out of the income of the larger wind park. "We could have asked a small price to cover these basic cost, but we did not find it necessary because of our financial stability."

This idea had several consequences. In the prior situation the REScoops had simply sold the energy to an energy company. The proceeds were returned to the cooperative members.

For the new self-delivery situation the co-operative had to find a way to deliver the self-produced energy at the homes of their members. This required them to monitor the amount of energy the members consumed, find a company to do the invoicing and a partner who could legally support them with the "program responsibility", a legal requirement to secure the energy supply of the members in case the wind production was low. They found this partner in an energy and waste management company called HVC which was situated in the nearby town Alkmaar. HVC is fully owned by 48 shareholding municipalities and six water management authorities.

The network company is responsible for the metering. This costs € 0,003/kWh. HVC monitors, registers and accounts for the amount of energy produced and consumed by the members. With no production costs, the REScoops pays for the administration costs. The members only see the transportation costs on their monthly invoice. HVC also takes care of the administration of the legally required VAT and energy taxes and grid transportation costs. The contract with HVC also enables the members to buy electricity in case the members use more electricity than the wind turbine produces. Due to its service contract, and a proper estimation of the members' consumption, this situation has not occurred.

The balance of the production is checked once per month. The consumption of a member is compared to 1/80 part of the production of the wind turbine of that month. If the member did not use all his kWh the month before these are used first. After that the energy company buys kWh on the energy market.

The regional network company was prepared to install smart meters that could register and transmit the energy consumption details of the members to the energy company HVC. The members decided they wanted monthly invoices, which required registration of consumption on a monthly basis. This had to be negotiated with the network company Alliander that installed the smart meters in the houses of the co-operative members. "This was a slow process. The company is large and the communication to the third party who was to install the meters proved to be rather difficult." It took at least a year before the meters were installed. By that time it was technically possible to register the consumption on a monthly basis and send monthly invoices. However, due to national regulative restrictions, Alliander, the metering company was only allowed to read these meters four times a year, unless the members formally agreed to a more frequent registration. The members had to sign a letter providing the metering company the permission to read these smart meters every month.

Low -cost demand driven innovation

The REScoop Eendragt self-delivery case illustrates how co-operatives can be potential sources for business innovation. For example, many large network companies are struggling to get the smart meters installed in people's houses, as consumers are generally not convinced about its added value. This was not an issue for the REScoop. In fact, they actually had to more or less push the network company to install the meters into their homes. The REScoop initiative also provided a starting point for business innovation at the energy company HVC. In the REScoop setting the network company monitors the smart meters from a distance, and communicates this information to the energy company HVC. HVC is responsible for the administration and sends in the invoices. Instead of simply supplying the energy, they have become more of an administration company.

This was a new view on their business model. For HVC this new model was not easy to set up “The energy company had a difficult road to go. The energy company was not recognized by the network company in such a role.” This is partly caused by regulatory ambiguities about the ownership of this type of information and data.

The project was implemented without governmental subsidies, nor external support from consultants. It was carried by the enthusiasm of the members and the collaboration with the two companies, HVC and Alliander. “We did not get paid for the development of the project”, Haasnoot points out. “If we would have billed our hours to the co-operative this project would not have happened.”

Apart from the self-delivery project, the REScoop also facilitated technical innovations. The founders of the REScoop developed a lot of technical skills concerning the wind turbines. In 1998 the wind turbines were not fully developed, and the members were regularly confronted with disturbances and technical difficulties. The wind turbines were often out of operation and the REScoop had difficulties remaining profitable. The members had technical skills and soon became knowledgeable on this type of wind turbine. The interaction between the members and the wind turbine producer resulted in improvements of this type of turbine and helped the producer with the innovation of his product.

Best practice:

- Preference of the co-operative members to consume self-produced electricity triggered technical, commercial and social innovations.
- Technical sustainability can be largely secured by a good service contract.
- Good technical enthusiastic members that live close to the wind turbine help to give the technical service companies direct interaction about any failures.

Non-technical barriers:

- Slow innovation at large energy companies.



Summary

When ElektrizitätsWerke Schonau (EWS) decided to buy the grid in 1991, the energy market was not yet liberalised and financial support systems were absent. By buying the grid, EWS aimed to reorganise it in an ecological manner. In order to transform the grid and the energy production, EWS stimulated citizens to install renewable energy production units by facilitating their connection to the grid and by paying special feed-in tariffs. At the moment the produced energy of citizens is exported to the grid and they are compensated through the EEG. EWS proves that by taking the grid and the sale of energy in your own hands you can change the business model to the needs of your members. It also demonstrates the resilience of REScoops and its strength to make use of social power; the power of volunteers that bring in expertise for free.

About the REScoop

The Chernobyl disasters in 1986 triggered several inhabitants of Schönau to found an organisation named "Parents for a nuclear-free future" (EfaZ). They informed others on how to save energy. Unfortunately, the energy company was not willing to cooperate since their business is to sell energy. Therefore, these active citizens established the Netzkauf GbR in 1991 and made plans to buy the electricity grid themselves. EWS was created in 1994 as 100% daughter of Netzkauf GbR. It took seven long years, but EWS succeeded through buying the electricity grid in 1997. After this first success, EWS expanded and is now also the proud owner of the gas network in Schönau and Wembach. During the following years, grids in eight neighbouring villages were bought as well.

EWS provides electricity for about 137,000 people and gas to around 8,500 people that they buy on the European markets. They currently own various installations that produces about 1% of the energy they provide.

About the project

In 1987 "Parents for a nuclear-free future" started to organize energy saving competitions. "The idea was to show, that we can do without nuclear power by saving it "away"". They asked the grid operator KWR that had the contracts to run the grid since 1974 and up to 1994, for support. KWR was not interested, it was their policy to sell electricity and not to save it. The group recognized, that running the grid of Schönau in an ecological way would be impossible with this grid operator.

REScoop - Netzkauf EWS eG (ElektrizitätsWerke Schonau, EWS)

Official year of establishment	1991 as GbR (a cooperative since 2009)
Members	2000
Project name	EWS Netze
Country	Germany
Renewable Energy Source(s)	Solar, wind, hydro, biomass, co-generation
Best practice	Grid connection and sale of energy
Mentor	Sebastian Sladek

In 1990, four years before the permission contract ended, KWR contacted the town council of Schönau to offer a new permission contract up to 2014. KWR offered 25,000 DM to Schönau, to sign the contract, 100,000 DM on the whole.

The citizen's initiative had to prevent a new contract with the grid company, so they founded the Netzkauf Schönau GbR. to collect money to offer the same as KWR. 282 citizens of Schönau offered 100,000 DM for not signing the contract. But the town council was willing to go on with KWR and decided to sign the contract in July 1991 the citizen's initiative called for a referendum to cancel this decision. The referendum took place 27 October 1991 and they won it with 55%.

The citizen's initiative had bought the time of four years for 100,000 DM. These four years they needed to build up a company that could run the grid. Fortunately, the German media picked up on the activities of these "electricity rebels" in rural Black Forest. After winning the first referendum many energy experts from all over Germany contacted them to offer their help. By 1994 they had worked out all needed documents and now founded the Elektrizitätswerke Schönau GmbH (EWS) and received the permission four days before taking over the grid.



Now opponents in the town called for a second referendum, which took place in March 1996. The four weeks before the voting date there was a very intensive campaign. The local industry warned the inhabitants of Schönau about unaffordable energy costs, the members of the citizen's initiative made home visits to every inhabitant. Schönau was divided in opponents and proponent. On March 10th 1996 more than 80% of all citizens of Schönau went for voting and EWS also won the second referendum with 52.5%.

EWS could now legally run the electricity grid of Schönau. However, they did not own the grid itself. This was still owned by KWR. According to German law, KWR now had to sell the grid to EWS. The price of the grid was estimated around about 4 Million DM. EWS was equipped with this amount of money. KWR asked 8.7 Million DM.

Now EWS had two problems. "We knew it was an excessive prize, but going to court to determine the right price would have taken years, which we could not survive as a group." So they decide to pay the price under reserve that they would go to court. They still needed around about 4.7 Million DM more to buy the grid. This money could not be brought in as shares, because of the economic viability they had to guarantee as a grid operator. The money could only be brought in as donations.

EWS wrote to the 50 biggest marketing agencies of Germany and asked for a gratuitous donation campaign, and 15 of them wanted to do it. The chosen agency created the "Störfall"-campaign for us. Störfall reverse to a technical incident or disturbance that creates a failure or change in the normal operation of a technical system. In relation to nuclear energy a Störfall is sequence of incidents. When a Störfall happens, the nuclear plant needs to shut down for safety reasons. The campaign showed a picture of the members of EWS saying "Ich bin ein Störfall," I am a disturbance.

Due to this campaign they got a lot of support from all over Germany and after 6 weeks the first two million DM was donated. "Now KWR became a little bit frightened, because they knew about the coming court procedure and that their price wasn't realistic." KWR offered the grid for 5,7 million DM and EWS accepted the offer. At July 1st 1997 they took over the electricity grid of Schönau. They still went to court in 1998 and in 2004 the court decided, that the electricity grid of Schönau was worth 3,7 million DM.

A business model that fits demand

EWS demonstrates that by taking matters in your own hands RES-coops can develop new business models that suits the demand of their members and the ideals of their organisation. The pioneers of EWS wanted to focus on saving energy and the production of renewable energy. In the 1990s energy producers were strongly dependent on the grid operators. There was no German Renewable Energy Act (EEG) with its fundamental aspects, the guarantee to bring the energy into the grid and a guaranteed feed-in tariff. Before liberalisation in 1998 grid operators were able to refuse to take the energy into their grid; and if they were willing to take the energy, they could dictate the price. There was no security for that kind of investments.

“So this was one of our major aims: Being the grid operator of Schönau we wanted to give every citizen the ability to produce energy. And we wanted to hedge this kind of investments by paying guaranteed feed-in tariffs. The two main aspects of the EEG (mentioned above) we realized in Schönau in 1998, while the EEG came in 2000.”

Another reason to buy the grid was the arrangement of the tariffs. The more anyone consumed the cheaper was the price. To deal with this problem EWS changed the tariffs for their consumers. There would be no monthly cost, but high prices per kWh. This gave consumers a financial incentive to save energy.

Best practices:

- Create a new business model that fits your member's needs.
- Create public support.
- Make use of the social power of volunteers.
- If institutions do not work with you, rely on the democratic system.

Non-technical barriers:

- Bureaucracy and regulations.

Bureaucracy and regulations

The biggest hurdle EWS had to take was the bureaucracy and regulations. As a local citizens initiatives they did not know all the regulations. Thanks to the help of many volunteers from throughout Germany they persevered.

This was a success at the time, however “the EU and the German government are now moving the other direction. In Germany there are more than 900 grid operators, also very small ones, like EWS. For years EU has been telling Germany to change the energy market, to minimize the number of grid operators. That is why the German regulation agency, the Bundesnetzagentur, expands bureaucracy for grid operators more and more.” Many small grid operators have to give up, because from a financial perspective they are unable to fulfil these requirements. “So bureaucracy is the major enemy of small grid operators, and at the moment this hurdle only becomes bigger, there is no reduction but a build-up of bureaucracy.”



Summary

E-Werk Prad Genossenschaft is a REScoop in the municipal Prato allo Stelvio in Bolzano-Bozen Italy. The electric cooperative was founded in 1926. They started with a hydropower plant and grew out to a cooperative with a diverse energy mix. They produce electricity and heat. Recently they have started an innovative smart grid project to get an even better balance in their energy production and consumption. The fact that most consumers are also members makes it easier for the REScoop to organize the demand side. This gives an extra and improved dimension to the project. It demonstrates REScoops are ideal organizations to manage smart grid projects.

About the REScoop

E-Werk Prad is an old cooperative with a long history. The history demonstrates the resilience of the REScoop model and gives a good insight how REScoops can develop beyond their original production methods to a more diverse production and distribution that fits their member’s needs.

In the years after the First World War Italy, also the town of Prato was in dire economic conditions. There was no money in the municipal to build a power supply and no interest in companies to connect the mountain village to the grid. In 1927 five ‘brave men’ from Prato decided to take the matters in their own hands. They started the cooperative and collected enough money to secure a loan from the Raiffeissen Co-operative bank to build their first hydropower plant.

For many years the REScoop merely survived. Several setbacks like the theft of current because of the lack of electricity meters or the financial instability after World War II nearly brought them to bankruptcy. However the members always managed to bring in enough social capital to continue and sustain the REScoop and its electricity production. The REScoop stabilized and slowly expanded with three more hydro plants. Since the past few years the REScoop production expanded extensively. They added four biogas modules producing electricity and heat. In addition they built two wind turbines and placed photovoltaic on the roofs of their members.

About the project

The E-Werk Prad produces and distribute electricity and heat for around 1,200 members in the rural areas of South Tyrol. The REScoop produces electricity from hydropower, windpower and solar power and biogas the REScoop owns a district heating network

REScoop - E-Werk Prad Genossenschaft

Official year of establishment	1926
Members	1148
Project name	Smart Grid
Country	Italy
Renewable Energy Source(s)	Hydroelectric, biomass, biogas, photovoltaics
Best practice	Grid connection and sale of energy
Mentor	Dr. Georg Wunderer

that transports heat from biogas production. The REScoop has created a nearly perfect energy mix that they are now trying to optimize with a smart grid.

In particular, the REScoop produced 22 million kWh of electricity in 2010. Four hydroelectric power plants (3.6MW) produce 17 million kWh of electricity. With four biogas modules produce electricity the REScoop has 1.5 mw installed power. The biogas plant uses sewage and manure (13 thousand tons from 55 farms) and waste of fruit-farming (1.500 tons) produces about 3 million kWh of primary energy, converted into 0.9 million kWh of electricity and 1.7 million kWh of thermal energy . Two windturbines (1.2 and 1.5 MW) produce 4 million kWh of electricity. 80 photovoltaic power plants (4.9 MW power installed) produce 5.4 million kWh of electricity (about 1,600 kWh per person). Thermal production (14,7 million kWh) refers to two wood-chip boilers, a boiler for pellets, four cogeneration modules (1.4MW, biogas and vegetable oils) two heat pumps (0.4 MW, radiant heat). Electricity consumption in the local area network stood at 11.9 million kWh, of which 85% is attributable to shareholders of the cooperative.

The supply of electricity through third parties from photovoltaic has grown enormously so that the distribution networks of the REScoop are pushed to their limits. Next to the production mentioned above, many of the consumers of the REScoop have started to produce their own electricity themselves. The extra production of solar power creates an imbalance. This means, the energy production and energy consumption occur not always at the same time. The relative increase of photovoltaic power in the mix of electric energy results in relatively large load fluctuations. This increasingly deteriorates power quality.

As a solution to these problems, the REScoop seeks a combination of energy storage and intelligent load management (smart grid). Various forms of energy storage are combined and a control network realized. As energy storage flywheels for short-term load balancing, and a pumped storage power plant, a biogas storage and accumulators of Electric vehicles are designed. The already-existing control network consists of more decentralized system controllers with a central control system. This is done with control algorithms to ensure that peak loads are minimized and avoided. With congestion management the energy flows are optimized throughout the day.

The important part of the smart grid project is that the REScoop includes the demand side in the project. The REScoop already controls the production side but for a more integrated plan they also need to include the consumer side, which are their own members. Here the strength of the REScoop is demonstrated. They often control the whole chain, from production to consumption. This makes them ideal organizations to manage these smart grid projects. Not only do they simply supply energy to their consumers, their consumers are co-owner of the REScoop. This gives them a direct incentive to participate in these kind of projects to optimize the functioning of their REScoop.

Best practice

- Creation of a balanced energy mix.
- Integration of demand side in smart grid project.

Non-technical barriers

- Bureaucracy.