

RESCOOP 20-20-20

Best practices Report II



RESCOOP 20-20-20



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1. Introduction

This is the second part of the Best Practices Report of the REScoop 20-20-20 project. [The first part was published in April 2013.](#)

The objective for the Best Practices report was to analyse 30 REScoops on the basis of the following 5 criteria:

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

While researching the REScoops the partners in the project concluded that these criteria were indeed the most important but that the REScoops also can teach us valuable lessons on other crucial criteria. It was therefore agreed to split the Best Practice Study in two parts. We documented the best practices addressing the original five criteria by studying 15 REScoops in depth in our first report and after that studied a further 15 REScoops aiming to define best practices related to 5 new criteria:

6. Production, distribution and sale of heat
7. Energy saving
8. REStechonology and the integration in the local environment
9. Cooperation between REScoops
10. Community engagement of REScoops.

When doing this we found that the first report focused mainly on the internal organisation of REScoops. Our first report gave advice and ideas on how to structure a REScoop and how to most effectively include stakeholders in its development. Our second report provides in the first two points examples of how others have been able to leverage the specific unique selling points of their REScoop for instance for the sale of heat and to stimulate energy saving. The last three points teach us how some REScoops become more than just an organisation that works in isolation on an energy project, they became part of a REScoop movement, of a larger community.

With these two reports the REScoop 20-20-20 project hopes to provide inspiration, ideas and motivation to new and existing REScoops. In line with the Cooperative Principles, we hope that these reports encourage readers to share experience, successes and failures. That way we can learn from each other, and together improve and broaden our REScoops' activities, to maximize our impact on the energy transition.

As some readers may only read this second report, we repeat some parts of the introduction of the first report.

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, we talk 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 is accessible through the project website. By doing so, existing and new REScoops are able to connect with each other and exchange knowledge. The database, which continues to grow every day, facilitates this 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 tool-box) 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).

1.1. 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, the research for this report also provided a base for the further research in the REScoop project. This further research focused on specific best practice elements and created, amongst other things, standard business and financing models for starting REScoops. Thirdly, the two reports aim to confirm the importance and effectiveness of REScoops to accelerate RES acceptance and installation.

All REScoops presented are pioneers in the energy transition and each has its own story. Typical for REScoops is that they operate with a small group of core volunteers, who are often doing their REScoop tasks next to other activities. These pioneers are therefore very busy, while they also tend to operate more in a problem solving than analytical mode. What is also typical for pioneers, is that they consider a problem solved, a problem forgotten. Extracting best practices in these circumstances has been tougher than we had envisaged. However, an experienced REScoop operator has written the report and we are confident that we captured the essence – which was also confirmed by the feedback we had on our draft versions. The inventory of more than 700 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

We analysed many REScoops together with our partners, as they can provide the local input that is key to understand best practices within specific countries. The REScoops interviewed are not necessarily the 'best' REScoops: they were selected because they scored well on 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 noting that some partners are actively involved in some of the best practice examples. While one could worry about that causing a research bias if this were an academic study, for the best practice report that we produced this has been beneficial. The REScoop partners are experienced and well known REScoops that have already discovered the value for society and themselves of sharing their knowledge.

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 project has created a community of “cooperative RES Mentors”; a pan-European network of people able to help starting RES-projects in various European countries. Mentors are pioneers in the Renewable Energy Sources cooperatives (REScoop) movement. They have been involved and are responsible for the development of a REScoop project. The goal of this group of mentors is to create a knowledge infrastructure on a European level, a network that starting and existing REScoops can turn to with their questions about the development of their REScoop. It creates a way for REScoop pioneers to connect with each other and share ideas and examples from other countries in different situations. For starting REScoops getting in contact with these kind of pioneers was very beneficial. Som Energia, a Spanish REScoop that started for years ago and was interviewed for the first report stated: ‘SomEnergia is a key example of how smart use of experience from other REScoops can not only reduce the REScoop development cost, but also speed up getting from idea to operation as our contact with Ecopower allowed us to avoid many otherwise costly, time consuming and motivation destroying mistakes for our project’

The REScoop 20-20-20 project brings mentors together for training sessions in four national workshops (the Netherlands, Italy, Spain and France). These mentors form a community of experts that can support groups of citizens to execute RES-projects. The two best practice reports will be part of the training tools mentors can use in their work. Mentors will also learn from each other, thereby broadening their knowledge beyond personal experience. In addition, the report will be continuously extended on the basis of discussion with and between the mentors. Like all REScoops, the REScoop 20-20-20 project aims to create a living community that keeps developing.

1.2.d How to read this report

The REScoops reviewed were selected on the basis of above mentioned best practice criteria. In several cases, REScoops have also been selected based on other criteria. REScoops and their projects are described in more detail in the fifteen annexes to 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.

Practitioners who used the first best practice report and who reviewed this second report, confirm that citizens working with or starting a REScoop project can learn valuable lessons from the 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, the first report has proven to be a living report, offering links to practitioners and mentors that had responsibility in these projects. Mentors have been contacted to get more information or clarifications. As such also this second report will help both existing and emerging REScoops. In several case studies you will see references to the importance of experience and scale to effectively negotiate with suppliers of hardware, software en services. The REScoop project’s information exchange has allowed small players to benefit of accumulated knowledge of the REScoop partners.

2. Best practice principles: Production and sale of heat

In this best practice we focus on the production, distribution and sale of heat by REScoops. Heat is an important part in the energy mix. The production of heat is possible in many different ways and on very different scales. The three REScoops that have been analysed used biomass (woodchips), solar thermal or 'waste' heat from large electrical power plants. Some cover whole villages, another only heats a community owned pool. The examples show that heat supply can form the basis to set up a REScoop, but can also encourage existing REScoops to supply heat as well, using local resources.

Principle 1: The REScoop model is the ideal model to sell heat.

In many cases district heating companies hold a monopoly position. Consumers are locked in by an expensive connection to the district heating system and therefore can only buy their heat supply from that one party. This often leads to conflicts as consumers fear being abused. When developing or building a new district heating one needs to get the trust of the heat consumers. The REScoop model solves this issue - members are consumers and producers so they control the company, the interests are aligned. In fact not always all profits are given back to members as dividends or in the form of lower energy cost, some cooperatives also democratically decide to use part of their profits and their scale to help their members in energy saving, or they invest in new systems to generate renewable energy, e.g solar thermal.

Principle 2: Combine technologies to optimize the system

In two of the REScoops researched it was demonstrated that they chose to diversify their technology. This optimized their system. At a time when both the energy prices and the government policies and subsidies can be unpredictable over the long life projects, it is good not to have all your eggs in one basket. Here we also see a crucial difference with a consumer owned, as opposed to a producer owned cooperative. A town heating cooperative owned by wood chip producers will not be inclined to use other proven renewable heat sources such as solar thermal, even when it would be cheaper and more environmentally friendly than burning wood.

Principle 3: Find local sources

When starting a heating project one needs to consider the availability of resources. It is important to research whether there is a sustainable resource that is available at the times when you need it. When using wood, one has to be aware of the very long foresting cycle governing the planting and harvesting of trees, these are not annual crops. Solar heat of course is especially available when space heating demands are at their lowest, while large scale storage solutions are still being researched. On the other hand, once a community heating network is in place it probably makes economic sense to supply members on hot days with solar heated hot water.

A crucial secondary benefit to the local communities proved to be that these REScoops create local new economic activities. Where they first got their oil or gas from abroad via pipelines or tankers, now jobs are created locally in the local supply chain of fuel, the installation and the maintenance of the installations.

A tertiary benefit is that owning and running the local energy supply also fosters the community spirit. In some cases a swimming pool that would have been closed has developed into a thriving local club, not just providing economic benefits but also involving many volunteers. This sort of projects can prove crucial to save rural communities dealing with a decline in residents.

3. Best practice principles: Energy saving

To succeed in the energy transition is only possible by reducing energy consumption, by using it more rationally. The REScoop model provides the scale to run relevant energy saving projects, such as by investing in insulation of houses and public buildings. A secondary benefit is that it has been proven that households that become members of REScoops 'automatically' reduce their energy usage, as they become more aware of the importance of energy.

Principle 4: REScoop model works for energy saving.

Although still not very widely spread the REScoop model provides enormous potential for energy saving targets in the EU. As we can see in case study of the Energy Saving Co-operative (p. 23) the REScoop model can be a key tool to build trust between the providers of insulation technology and the end consumer. Investing in insulation is often considered a radical change for consumers, so they are hesitant to do it by themselves. Only the hard core, truly motivated take up the effort to do good research in the possibilities and the trustworthiness of the system suppliers. For insulation system suppliers that makes the cost of selling very high, as each job involves extensive and costly sales efforts. A co-operative model involving both sides, the consumer and system suppliers can solve this. The local REScoop has the critical mass to acquire the necessary expertise, while scale also makes it for system suppliers worth investing time and effort to provide a competitive offer. This gets even better when local authorities get involved, by facilitating the administrative hassle (permits, subsidies) as well as by providing very visible pilot projects in public buildings such as offices, schools, sport installations, retirement homes. Especially the combination local authority and schools is great, as pester power, children educating their parents, is proven effective. In the uncertain regulatory climate of the UK, sadly our best practice example did not manage to survive – not invalidating the value of the concept but once again underlining how constantly changing government policies kill many good projects.

Principle 5: REScoops can target energy saving there where it is needed.

REScoops are in principle not-for profit organisations. This makes it easier for them to target energy savings there where it is most needed. Social housing and other low-income housing tends to be badly isolated - offering an enormous energy saving potential. However, these families do not have the means to invest in energy saving measures, and they distrust monopolistic suppliers of energy. REScoops offer a way to break that conundrum.

Principle 6: Demand side energy savings by members has been proven to be a side effect of joining a REScoops.

While REScoops can still do a lot more to help their members reduce energy usage, it has been proven that the mere fact of joining a REScoop leads to reduced energy usage. Energy becomes a theme in the household and a conscious user causes less wastage. In the case of the residents of the Island of Eigg (p 27) it was a necessity to participate in a program for energy saving and take measures to rationalize energy use. The residents of the Island unanimously decided to cap their demand. In other cases we see that the energy usage of members of REScoops is also declining, in Ecopower cvba, a Belgium cooperative with more than 50.000 members/consumers, for instance on average by 30%.

4. Best practice principles: REStechonology and the integration in the local environment

Numerous RES technologies are applied by REScoops all over Europe. Where RES technologies enable the transition towards a carbon free future, not every RES technology is suitable for each situation. In some occasions, the application of a RES technology might be beneficial both in social and economical terms but harmful to the environment. In contrast to non-local or for-profit actors, REScoops choose to integrate the environmental impact of the applied RES technology in their decision-making process.

Principle 7: The pro- and cons of environmental regulations for REScoops

In every country in the European Union there are extensive regulations to protect the environment, many commercial organisations complain that these complicate investing in renewable energy. The REScoops interviewed did not consider these regulations as obstacles, since they want to be responsible towards the environment. REScoops are often local organisations with citizens that live in the region. It is in their best interest to comply with these regulations. REScoops see these rules and the agencies that enforce them more as a partner than as an opponent. These institutions tend to employ a lot of experts on the subject that can help a new REScoop make sure the REStechonology is used in an environmental friendly way.

Still, in some case, the Environmental Agencies can cause frustrations and delays for REScoops and their projects as they are often large and bureaucratic governmental institutions.

Principle 8: Include experts and create a learning environment

Environmental protection is a broad subject to deal with and therefore expertise can be fragmented and hard to acquire. A REScoop can function as a platform to bring these experts together. This way it can create a learning environment that can improve the integration of REStechonology in the local environment. A good example is the REScoop Lucèole (p. 30) who included ornithologists in their platform to research the influence of a windpark on the red kite population in the area. By involving experts, you are making sure that as a REScoop you do not harm your own environment; furthermore it creates a setting of cooperation instead of opposition.

5. Best practice principles: Cooperation between REScoops

In several countries where there are already many REScoops, also cooperation among these cooperatives has been institutionalized. Often this is organised in associations or so called second level REScoops, offering services to their members. In this report we researched three organisations that facilitate cooperation. Sometimes the cooperation started as a single REScoop and replicated itself in different areas slowly creating a network of REScoops. Other times REScoops came together to work together and share knowledge and services. The cooperation between REScoops knows many benefits, making them more efficient and stronger in their lobby while the sharing of knowledge speeds up the development of starting REScoops.

Principle 9: Do not compete but cooperate

REScoops in most cases do not compete with each other. One reason for this is that they serve their members or communities. Their business model is not based on growth. In other words, they have not as a goal to conquer the market. This business model creates an incentive to cooperate with other REScoops, to share expertise and to improve or to become more efficient and thus serve your members better.

In many European countries we see the same movement. REScoops coming together, finding a model to work together. Deciding what can be done locally and what services or activities are better to share. The Italian REScoops looked into different sectors where there are many cooperatives and found a working model in the Raiffeissen bank model. This model gives autonomy to local REScoops but pools key administrative services in one central cooperative to become more efficient.

Principle 10: Cooperation creates innovative new business

When REScoops work together they do this to either solve a common problem or address a common demand. It is not uncommon for REScoops to set up together a cooperative business that provides services to their core businesses. For example in Denmark the district heating cooperatives created a cooperative IT company to carry out IT services for their members. Some members created a specialized engineering consultancy cooperative, as they considered the cost of existing consultancies too high. In Italy, REScoops came together to start their own financial company. REScoops pool their capital in this company in order to help small REScoops make large investments.

Principle 11: Represent all members and serve their needs

When working together as REScoops in an organisation it is important to make sure all members are represented as the interests of a small Rescoop in a rural area may not be the same as that of a large REScoop in an urban area. The Danish District Heating association has therefore representatives of different types and sizes of district heating companies in their board. By starting working groups on various practical subjects, REScoops exchange experience and expertise. In addition these working groups often develop into informal networks, bringing REScoops together also in areas beyond the limited remit of the specific working group.

Principle 12: Share knowledge bottom-up and top-down

Knowledge and expertise is not developed only on a national level and then trickles down to the local REScoops. Local REScoops have to deal with different local situations and barriers. By creating a structure where local REScoops can meet they share their local solutions with the others. When these solutions turn out to be of broader interest, the national REScoop organisation can organise training and workshops in order to spread this expertise among its members. This speeds up the development of local REScoops since they do not have to solve all problems and overcome all barriers just on the basis of their own ingenuity and stamina.

6. Best practice principles: Community engagement of REScoops

REScoops are groups of citizens working together on renewable energy. This model inherently has the connection to the community built in. As a result we see that the activities of REScoops are not only designed to avert the pressing issues related to climate change. Several REScoop are established primarily to alleviate problems concerning a decreasing standard of living or to strengthen community interaction. For these REScoops the production, sale or saving of energy is more a tool for sustainable development of their (local) community than a goal in itself.

This aspect distinguishes REScoops from other companies developing RESproduction. The development of a RESproject is for a REScoop not necessarily only about profit or renewable energy. It is a development that comes out of the community aiming at the direct benefit of the community. For REScoops it is important to know this distinction and use it as a unique selling point. Below three examples show how to leverage this community engagement.

Principle 13: Involve and strengthen the local economy

Not only is with a REScoop the production of energy decentralised, all supporting business are also decentralised. Services like project development, construction of projects, and the sale of energy will not be done anymore by far away giant companies with mammoth power plants, but by small local businesses. REScoops can play a vital role in developing decentralised services and so help create a revival of the local economy - REScoops can set up new supply chains in the local community. This happened especially in the REScoops that changed their fuel for the production of heat from internationally acquired fossil fuel like oil or gas to a local resource like woodchips.

Principle 14: Connect other sectors of the community

An important lesson we learned from the best practices analysed in the criteria of community engagement is that these REScoops do not see their REScoop as a tool to produce, sell or save renewable energy, but also as a tool for sustainable development of their community. They see the production of energy as a way to produce a cash flow that can be (partly) used to help make other sectors of their community more sustainable. Therefore it makes sense to make a direct connection to these sectors, for example by making local schools or local elderly homes more sustainable, by educating children on energy saving or by reinvesting parts of the profit in new community companies that can create more sustainable businesses. Such a REScoop clearly stands out in the energy market from most other companies that are 'only' trying to develop renewable energy. This unique selling point makes such a REScoop a more interesting partner for local government that wants to, or has the task to, develop RESEnergy.

Principle 15: Education of the community

Principle five of the international cooperative principles is education, training and information. Many REScoops considered it important to make the community aware of their goals and the reasons why they wanted to produce or save energy. The REScoop Courant d'Air for example placed solar panels on the local schools and connected educational projects to these activities, teaching children about solar energy. They also brought them on a trip to wind turbines to teach them about wind energy.

7. Summary of Best practice principles

Best practice principles: Production and sale of heat

Principle 1	The REScoop model is the ideal model to sell heat
Principle 2	Combine technologies to optimize the system
Principle 3	Find local sources

Best practice principles: Energy saving

Principle 4	REScoop model works for energy saving
Principle 5	REScoops can target energy saving there where it is needed
Principle 6	Demand side energy savings by members has been proven to be a side effect of joining a REScoops

Best practice principles: REStechonology and the integration in the local environment

Principle 7	The pro- and cons of environmental regulations for REScoops
Principle 8	Include experts and create a learning environment

Best practice principles: Cooperation between REScoops

Principle 9	Do not compete but cooperate
Principle 10	Cooperation creates innovative new business
Principle 11	Represent all members and serve their needs
Principle 12	Share knowledge bottom-up and top-down

Best practice principles: Community engagement of REScoops

Principle 13	Involve and strengthen the local economy
Principle 14	Connect other sectors of the community
Principle 15	Education of the community

Best Practices: Production and the sale of heat

Avedøre Fjernvarme a.m.b.a.



Summary

Avedøre Fjernvarme is a district heating cooperative that is owned and controlled by the consumers. It has a district heating system based on wood and straw. The cooperative added a new project with thermal solar heating and photovoltaic placed on balconies of the building. This way the REScoop created a smaller combined heat power (CHP) system that contributed to the larger heating system the cooperation owned. The REScoop model was key in making this project work since the solar systems were not in competition with the district heating system but contributed to a better and more efficient system.

About the REScoop

Avedøre Fjernvarme is a district heating cooperative in the small town of Avedøre. It was established in 1984 and has 6 members. These members are democratically organized housing estates where the tenants are the members of the housing estate. The district heating cooperation is based on Danish legislation where consumers have decisive influence on the day-to-day-running of the cooperative.

The district heating cooperative buys its heat from a power plant which is owned by Dong Energy. This is a combined heat and power plant and one of the most efficient of its kind in the world. It uses all different kind of fuels like natural gas, coal and oil but also biomass like wood pellets and straw. There are two installations producing 900 MW of heat a year and 810 MW of electricity.

About the project

The project was started by the housing estate Store Hus and Avedøre Fjernvarme with the goal to demonstrate an innovative project at the 2009 UN summit in Copenhagen. The idea was to create an integrated system using most of the surface of the building as possible. They would place solar thermal on top of the building combined with exploiting solar energy (PV) from the glazed balconies. The project was going to be the first solar thermal system on Denmark's biggest single- standing building on the roof 45 m. high.

With eyes of the world on Copenhagen for the UN summit, the cooperative wanted to demonstrate the potential of integrating renewables in district heating in housing areas – cities – using the 5th façade of a building – the roof.

REScoop - Avedøre Fjernvarme a.m.b.a.

Official year of establishment	1984
Members	6 - (housing estates with tenants'/ members' democracy)
Project name	The solar house
Country	Denmark
Renewable Energy Source(s)	Solar Thermal
Best practice criteria	Production and the sale of heat
Mentor	Steen Jørgensen

In addition it brought renewables closer to the tenants and residents in housing areas and really makes them part in renewable projects on a local scale.

In a short time, the REScoop managed to get all stakeholders involved. The cooperative members decided unanimously to go ahead with the project. The housing estate and the tenants also decided positively on the project. And the municipality, which had to give planning consent based on public hearings, managed to approve the project within 5 months.

The REScoop created the right conditions for all stakeholders to participate. Store Hus is a typical Danish social housing estate with low income residents. A small rent increase could have stopped the project. The UN summit helped create awareness and enthusiasm so the housing estate and the municipality were willing to cooperate. According to Steen Jorgenson: "The solar thermal project in the housing estate Store Hus has changed the image of the estate. Before it was known as the 'Big House' – now it is converted into the 'Solar House'.

The Avedøre Fjernvarme financed the solar thermal installation on top of the building. This installation complements the district heating system. To place this installation they paid for renting the roof for 25 years from the housing estate under the condition that the rent was earmarked for the PV installation. The housing estate financed the large PV installation on the South façade of the building at the same time as the solar thermal installation was installed.

Consumers as members

In Denmark district heating companies are obliged by law to be consumer controlled not-for profit companies. This was a safeguard that was built in with the compulsory connection to the heating systems for consumers. As a result almost all district heating companies are owned by the consumers. Some are directly owned by the consumers, others like Avedøre Fjernvarme are owned by organizations that are democratically organized.

This model creates an interesting dynamic. Members are obliged to connect to the heating infrastructure. This gives a constant income for the companies. However, this kind of monopoly also brings responsibilities that are solved by the cooperative model. First off all, the companies are not allowed to make a profit. All profits are directly returned either into the cooperative or to the members in the form of reduced prices.

Considering the company is owned by its members it creates accountability and makes the company open and transparent.

A solar project like this is hard to accomplish when the consumers are not members who will benefit from the project. The fact that both organizations were cooperatives helped. "The status as a cooperative makes it easier to establish a project like the solar thermal and PV installation. People trust each other." When you develop projects like these you need to have support of the tenants. First of all because they have a democratic say in the housing estate, second you are working on their homes.

This social acceptance is hard if they need to endure the disruption by the works while a large energy company is making a profit. What generates trust and acceptance is the fully transparent way the cooperative is structured. Any profits will be returned to the consumers by lowering the energy bills for the district heating.

Best practices

- Involve all stakeholders and understand their interest in the project.
- The cooperative structure is essential in the involvement and social acceptance of projects.



Summary

Heubach is a village of 700 inhabitants and 130 households located in the state of Hessen (in the central part of Germany). Here a community owned biomass heat and power generator (gasifier) supplies 70 houses with heat and feeds bio-electricity into the electricity grid. The combination of heat and bio-electricity production provides an interesting and profitable business case.

About the REScoop

Bioenergy village (Bioenergiedorf) Heubach is one of nearly 70 bio-energy villages in Germany. The first Bioenergiedorf in Jühnde, which began as a large-scale experiment with the University of Göttingen, sparked a proliferation of renewable energy villages. This development has, as some say, a great potential to revive rural economies and “Germany’s rural spirit”.

This project started as an initiative of twelve citizens and the municipality of Heubach in 2008. They shared a vision of a fossil fuel independent Heubach and were inspired by the experiences of other bio-energy villages. In 2013 (five years after the plans were first launched) the installation was taken into production.

The installation is community-owned and exploited by Bioenergiedorf-Heubach e.G., a co-operative with 86 members which was established in 2009. The members, who are also the customers and consumers of the delivered heat, include a local kindergarten, town hall, apartment buildings, the museum/synagogue, church, restaurant and café. No other heat suppliers are active in the village, 50% of heat users are connected

About the project

The bio-energy is generated in a ‘double hearted system’, consisting firstly of a wood pallet fueled gasifier (Blockheizkraftwerk: 50kW electrical and 115kW thermal). This system is based on innovative wood gasification technology which is to be tried and tested in practice in Heubach. The heat feeds into a 3,5 kilometer long heating network providing the base load of the local heating system. The second ‘heart’ of the system consists of three separate boilers fueled by wood chips (Holzhackschnitzel Kessel) that cater for the remainder of the heat demand in the winter. Wood pellets, chips and wood from pruning are used as fuel.

The bio-electricity generated by the gasifier is fed into the electricity grid. A 20 year guaranteed price based on the feed-in tariff is received, ensuring a secure and fixed cash flow. The combined income generated by the sale of heat and electricity under the feed-in tariff conditions makes an attractive business case. The investment of €1,6 million is expected to pay back in thirteen years.

REScoop - Bioenergiedorf Heubach eingetragene Genossenschaft

Official year of establishment	2008
Members	85
Project name	Bioenergiedorf Heubach
Country	Germany, state of Hessen
Renewable Energy Source(s)	Biomass
Best practice criteria	Production and the sale of heat
Mentor	Herbert Krack

The initiators were initially concerned whether they would be able to attract finance and members. However, they managed to actively engage sufficient citizens. They organized village meetings, discussed with the villagers and communicated their plans through the municipal channels.

The project is pre-financed with equity from member shares as well as with loans. The loans are from the regional bank, the Wirtschafts- und Infrastrukturbank Hessen, and the Kreditanstalt für Wiederaufbau (Reconstruction Credit Institute) of the KfW Bank, a German government-owned development bank. They provided a credit facility of € 390.000. The co-operative was also supported by the European Union and the government of Hessen (HessenEnergie) with nearly €210.000 in subsidies (€ 145.750 for the wood gasifier and € 63.000 for the Biomass fuel heating installation).

In December 2013, five years after the first idea and the successive many “plans in the head and on a lot of paper” the project finally became reality. In 2014 the system will be in full operation.

Best practice

- The combination of heat production and generation of bio-electricity supported by the German feed-in-tariff provides a sound business case.
- Bio-energy is seen to have great potential for revitalization of German rural communities.
- Innovative biomass gasification technology



Summary

The biomass project at the Mid Argyll Community swimming pool demonstrates that renewable energy does not have to be a core activity for an organization to change from fossil fuel to renewable fuel like biomass. The swimming pool, run by a community enterprise, did not have the knowledge nor the capacity to make the transition. With the help of other local organizations and companies the transition was made. They now run their own biomass boiler, fuelled with local woodchips from the Argyll area, saving the community heating costs, and creating local employment.

About the REScoop

Mid Argyll Community Enterprises is not a REScoop where renewable energy is its core business. Its main activity is to run the community owned swimming pool. The enterprise was established in 1996 when the community funded the building of the pool. The board of the pool is elected by the community and consist of volunteer community members. The pool has six paid employees. In 2003 the pool replaced its oil fired boiler plant with a wood chip biomass boiler of 200kW.

The biomass project was developed with the help of Argyll, Lomond and the Islands Energy Agency (ALIenergy). ALIenergy was established in 2000, as a not for profit organisation with charitable status, by a combination of funding from Argyll and Bute Council and the European Union. It was formed as one of a number of regional energy agencies in a pan-European network.

About the project

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REScoop - Mid Argyll Community Enterprises Ltd (MACEL)

Official year of establishment	1996 (Biomass heating installed 2003)
Members	Community owned pool
Project name	MACpool heating
Country	Scotland
Renewable Energy Source(s)	Biomass (woodchips)
Best practice criteria	Production and sale of heat
Mentor	Bob McIlwraith

Torren Energy acted as an energy service company (ESCO), which specialized in the installation of VETO biomass boilers that were manufactured in Finland. Torren Energy was supposed to design, finance, build, operate and maintain the biomass heating systems. MACpool would have a contract with Torren Energy to purchase heat at an agreed tariff and would not be required to provide any capital outlay, nor would they be exposed to financial risk. The biomass boilers would remain in the ownership of Torren Energy.

The proposal to install biomass heating at MAC Pool was part of a larger project to install biomass heating in three separate community buildings in the West Highlands of Scotland. It was called the Woodwarm Project. The proposals were to convert these premises to sustainable renewable energy using wood-fuel boilers, to improve energy efficiency and to improve the services provided.



Success does not come easy

For MACpool it was an easy decision to participate in the project. MACpool was offered the opportunity to substantially reduce its energy costs, to use local processed timber as a fuel, leading to reduced operating costs allowing to offer better services in its leisure centre to the community in Mid Argyll. All of this was being offered without contributing to the capital expenditure of the project. It was perceived as “all gain and no pain.”

Torren Energy would remain owner of the installation during its lifetime. It would also supply the woodchips coming from Broadford on the Isle of Skye, 151 miles away, while seeking a more local supply. However, soon after the commissioning of the biomass system, major difficulties emerged. In November 2003 Torren Energy collapsed as a business and there was no-one available to operate the boiler or to supply wood-fuel. MAC Pool was forced to revert back to using the original expensive, oversized and inefficient oil boiler. There were three critical issues that needed to be resolved before the project could restart and become a success.

Finding a new owner

The first issue to be resolved was ownership of the installation. The MACpool had no interest in owning it as they were worried about the risk of taking on what was then a new and unfamiliar technology. ALLenergy stepped in and bought the whole installation for the nominal sum of £500. ALLenergy would operate and maintain the boiler on behalf of the pool and would use the installation to demonstrate the simplicity and economic benefit of wood-fuel heating. In 2010 the ownership of the boiler was transferred from ALLenergy to MAC Pool at no cost.

Choosing a new suppliers

The West Highlands, and particularly Argyll and Bute have substantial areas of commercial forestry which can supply the necessary feedstock for wood-fuel processing. The woods are sustainably managed, new trees replace the ones that are harvested. “Biomass from local forests was the only suitable answer to provide cleaner, greener, sustainable renewable energy, at lower cost, that would not be compromised by foreign wars and international incidents,” according to Bob McIlwraith the ALLenergy’s Biomass Development Officer and board member of the MACpool.

The woodchips are made from the waste products of the forest industry and thus create a new asset for the local economy. For the project partners it was important to find a wood-fuel supplier as close as possible to Lochgilphead, the town where the pool is located.

Steven Watson, the manager at ALLenergy approached the Auchencorvie Sawmill, a small, family run sawmill at 50 miles from Lochgilphead. This company was able to supply suitable woodchips from slab-wood arising from the sawmilling process. Up to that moment this slab-wood had no commercial value and was burned on site, now there was an opportunity to convert this waste material into a source of renewable energy. Auchencorvie Sawmill still supply wood fuel to MACpool and has expanded selling wood chips to other biomass district heating systems in the area.

Local technical operation and maintenance

The last important issue that needed to be resolved was the technical operation of the installation.

Given that the boiler was now owned by ALLenergy, it was considered appropriate that the biomass system was operated and maintained by ALLenergy's Biomass Development Officer, Bob McIlwraith. Bob not only did so until he retired from the Energy Agency in 2010, but from then on has taken care of the boiler in his role as a director on the board of MACpool.

So it worked out very well, 10 years after the installation of the biomass heating system, MACpool has full ownership of the biomass system, sources its wood fuel nearby, manages its own maintenance costs and realizes substantial annual savings on its heating costs. "The MACpool board of directors are proud of their biomass system which has been instrumental in the installation of biomass installations in much larger leisure centres in Campbeltown and Oban."

Best practices

- Create a local supply of fuel that is an asset to the local economy.
- Work with partners who can take on the technical and financial aspects of the project

Non-technical barriers

- Dependence on external companies can lead to unforeseen barriers in the project

Best practices: Energy Savings

Brixton Energy Co-op



Summary

Repowering London is a not-for-profit organisation that specialises in facilitating the co-production of community-owned renewable energy projects in London. It helps to set up projects and local co-operatives for inner-city community-owned solar power stations. These projects are financed by citizens. Part of the profits of the solar projects are returned in a Community Energy Efficiency Fund (CEEF). The fund is used to improve the energy efficiency of the housing stock in London. The co-operative members together with the community develop the energy saving initiatives in the area. Brixton Energy Solar 1, Solar 2 and Solar 3 demonstrate a best practice in energy savings with their broader social approach. They target their projects where it is most needed; in social housing where energy poverty is a real issue.

About the REScoop

Brixton Energy Solar 1 was the first co-op in the United Kingdom to own an inner-city power station on social housing. The Repowering London organisation sets up a new Brixton Energy Co-op for every new power station. Currently, three co-ops have been established, Brixton Energy Solar (BES) 1, 2 and 3. The share offer of BES 3 was launched in June 2013. These share offers were developed in close conjunction with the Repowering London team, organized as a co-operative themselves.

Brixton Energy is a not for profit co-operative based in South London. For every new project a new share offer is opened to raise sufficient funds. This is open to all British citizens, prioritizing local residents in case of oversubscription. The community share offers last five weeks.

The expected return on investment is about 3-5%. The financial benefits are not the most important argues the Director of Brixton Energy Solar 2 and 3, Agamemnon Otero: "It is not necessarily about the return on investment, it is more important that Brixton Energy works to create more well-being in the community."

The solar projects serve as the means to build a resilient community. Every new project and new REScoop is a "new journey" where new community members are involved in its development. The REScoop raises awareness about energy efficiency and wants to tackle fuel poverty. In addition they provide training and employment for the local people.

REScoop - Brixton Energy Co-op

Official year of establishment	2011
Members	170
Project name	Repowering London
Country	United Kingdom
Renewable Energy Source(s)	Solar/ Energy Savings
Best practice criteria	Energy savings
Mentor	Agamemnon Otero
Website	brixtonenergy.co.uk www.repowering.org.uk

About the project

Repowering London focuses on community engagement in community-owned renewable energy. An important aspect of the project is the focus on energy savings. According to Otero this very important aspect of the energy transition is even more important in social housing because of the anticipated fuel poverty.

The electricity of the power stations is sold to the grid and partly used on site for communal use at the housing estates. The UK Feed-in Tariff is the principal source of income. This scheme requires electricity suppliers to pay a Generation Tariff of approximately £0,13 per kWh for all the electricity that is generated over a guaranteed period of 20 years. In addition, any surplus that is exported to the grid is eligible for an Export tariff of £0,045 - £0,051 per kWh. Energy used on site is sold under a separate power purchase agreement (PPA) to the estate at discounted prices. From every project 20% of the total net profits are set aside for the Community Energy Efficiency Fund (CEEF), which is set up to support energy saving projects and promote energy efficiency. The goal is to make this fund a self-sufficient platform that can exist without government subsidies.



The money from the CEEF is used for promotion and installation of relatively low cost energy efficiency measures. The community members and the co-op members decide about the projects to be funded. This includes individual home audits, energy survey, advice sessions and community events. Community members help their neighbors to implement simple changes. This starts with getting a better insight in the own home performance (with an audit), and simple cost saving opportunities such as switching to another cheaper supplier (best prices), draught proofing, and changing the lighting.

Broader approach

The project is not only about renewable energy production or saving of kilowatt-hours. It is also about improving the resilience of a local community. Repowering wants to create resilience by educating and training young people in the community. Every solar project also offers internships to students, ranging from IT specialist to legal students and offers work placements on its renewable energy installation. The aim is to get members of the community involved to learn the trade.

Energy saving where it is really needed

Brixton Energy's main focus is on social housing. "Many have tried to help this area and found it difficult!" says Agamemnon Otero. Social housing tends to be very energy inefficient, yet "few are successfully solving this problem. Conventional energy companies have no interest to address people in social housing about energy saving. There is no incentive."

"The energy companies are making large profits on selling to the most vulnerable consumers. In quite a few cases tenants do not have a bank account, and therefore pay their energy bill with top-up (pay-as-you-go) systems. These can be up to 30% more expensive than average energy prices. Furthermore they also consume another 30% more because social housing tend to have bad insulation and these consumers use old and inefficient electrical appliances. As a result energy poverty is a serious problem and Brixton Energy is helping to alleviate it."

Best practices

- Broad approach to energy saving
- Community-led approach to enable local people to invest in renewable energy generation and raise funds for energy efficiency initiatives.
- Provides a co-operative financing scheme based on community funding, benefiting from the Feed-in-Tariff scheme providing financial and social returns
- Set up a fund for energy saving projects
- Target groups that need it the most. Addressing the social issue of energy or fuel poverty.

Non-technical barriers

Politically the UK is suffering from a restructuring of the energy market. There is inertia on decision making. Clarity on governments support for community energy would raise investment as well strengthen local government support, which would allow faster RES deployment across the UK.



Summary

The Energy Saving Co-op was a great example on how to organize energy saving projects. The members of the co-op were the consumers, community groups and companies that supply RES systems, every member had equal votes in the co-op. The Energy Saving Co-op engaged all stakeholders within one organization and closed the chain between suppliers and consumers of energy saving measures. The co-operative has proven to be the ideal organizational model to convince people to invest in improving the energy performance of their own housing. However, the change of government policies, specifically the unfair bias of the 'Green Deal' to the large industry players, led to the project failing in 2014.

About the REScoop

The Energy Saving Co-operative was founded by Ewan Jones and Bob Burlton with the help of Midlands co-operative society, one of the largest independent co-operatively owned retailers in the UK. Ewan Jones has a background in business strategy and believed that a co-operative would provide the solution to the energy market for saving energy. "There is a clear need for organizations that focus on energy saving, not on selling more energy". The initial idea was to create a trustworthy link between the consumers and the companies offering energy saving products. "It was an idea I had been working on for a while. We do not build fast enough. To reach the climate targets we need to build or convert around a million low energy houses a year. This can only be done with a professional organization that people can trust."

REScoop - Energy Saving Co-operative Limited

Official year of establishment	2011 (stopped 2014, see below)
Members	200
Country	United Kingdom
Renewable Energy Source(s)	Energy Saving
Best practice	Energy Saving
Mentor	Ewan Jones
Website	www.energysaving.coop

The REScoop was a multi-stakeholder cooperative, this meant it was a hybrid organization representing all actors of the energy saving trade chain. "We connect homeowners, communities and local businesses that have energy saving opportunities, with whole-building energy saving expertise and sources of fair finance". Three classes of user-members are represented: 1. Individual building owners or tenants who want to save energy, 2. Co-operatives and community groups who want to use the services for their members and 3. the suppliers and tradespeople offering the energy saving services.

Providers of finance form a fourth class of membership.

The philosophy behind the REScoop was to create a business that is tied to a region and democratically owned. Their purpose was to provide local people the power - i.e. the means to save energy.

Bob Burlton, the co-founder, stated that “our vision is that the largest part of the energy savings will be through co-operative and community solutions. We need to realize that there is an enormous potential for REScoops in this new industry in the coming years.”

How it worked

Energy Saving Co-op was owned and run by and for its members. Members could participate financially by investing in shares. Profits were to be distributed to members via dividend. At least 20% of the profit would be reserved for reinvestment into the cooperative or go to social and charitable projects. The REScoop would generate profits from offering energy saving advice and retrofitting houses. Instead of home owners or building owners shopping at different suppliers, choosing different techniques and contracting different companies, they could use the energy saving co-op as a one-stop shop.

Communities or individual consumers who wanted to invest in energy saving measures contacted the Energy Saving Co-op. The Energy Saving Co-op selected local partners, suppliers that can provide quality energy saving services, or staff of the co-op provided energy saving advice. The co-op took responsibility for the installation quality and service delivery, guiding the energy saving project from its first energy advice visit through to installation and delivery of the services. These services involved a variety of technologies, mostly simple and well established, such as Led lighting, double glazing, loft and cavity wall insulation and various types of heat production, more efficient boiler systems, ground source heat pumps, or renewable heat production, including solar hot water systems and photovoltaic panels.



Co-operative organization and community groups as members

The Energy Saving co-op model can be considered a best practice example in the way it mobilizes the membership of existing co-operative organizations and community groups. The Energy Saving coop partnered with groups that had already established themselves and whose members were committed to environmental issues. So these groups were natural partners to work with. These communities had access to a large membership base and have a trust-worthy reputation.

The REScoop was active in the Midlands, Oxfordshire, Birmingham and South Staffordshire. It aimed to expand its activities to build a scalable national co-operative business, combining the best of 'Big' with the best of 'Local'.

Fair finance

Energy Savings Co-op also sourced the finance for its members, from ethical, co-operative and mutual finance providers only. It helped its members to access available grants (ECO grants), provided advice about investment, personal loans or mortgage finance opportunities and about national (Green Deal) finance opportunities through the electricity bill.

With trust comes responsibility

The co-op model brings a solution for the energy market. The REScoop model is based on trust. Renovating the house one lives in, is a drastic measure. This threshold is hard to overcome in the energy saving market. With a one stop shop that is owned by the consumers themselves this threshold could be lowered.

It was the responsibility of the Energy Saving Co-op to make sure that their members trusted the organization. This is why they selected their partners but also conducted quality control and impact measurements.

Best practices

- Mobilizing existing the membership of communities and cooperatives for energy saving projects
- Offering fair finance services
- Connecting local stakeholders, homeowners, communities and local businesses, to energy saving projects. “One-stop shop for retrofitting”

Non-technical barriers and closure of the REScoop

Even though the project eventually crashed, it is still considered a best practice in energy saving by REScoops. The cause of the failure was in non-technical barriers. The main reason the initiators gave for the closure was “the government’s retreat from its aspiration to be ‘the greenest government ever’” and the fact that the Green Deal programme did not work for small start-up business, as it was designed for the large “Big Six” utilities.

We decided to keep this best practice in the report as it demonstrates that we must also learn from failure. We are aware that even the best sounding REScoop project, which proves to address a clear and well defined need, may not always come to fruition. Especially because of government policy changes, but sometimes also for other unforeseen reasons.



Summary

The Island of Eigg is not connected to the mainland for its electricity supply. The Island changed its energy system from importing fossil fuel to local renewable production. An important part of this transition meant keeping the demand as low as possible by saving energy in order to meet the limited capacity of the new system. The island community demonstrates that when people take ownership and feel they are part of the system, they are willing to participate in the necessary energy savings.

About the REScoop

A REScoop is a group of citizens working together on renewable energy. The community on the Island of Eigg certainly fits this criterion. The island was bought from the bankrupt owner in 1997 by the newly formed Isle of Eigg Heritage Trust, a partnership between the residents of Eigg, the Highland Council, and the Scottish Wildlife Trust. This was the first big step in community ownership and development of the island.

One of the main challenges in the development of their island was the energy system. The main issue was that the island was not connected to the mainland. Diesel for combustion engines that produced electricity for houses had to be imported and none of the privatized utility companies would assume the cost of offering the 87 inhabitants a grid connection.

As the 12 mile undersea grid connection to the mainland would cost £5 million while a stand-alone renewable energy system only cost £1.6 million, the community decided to go renewable. The Eigg Heritage Trust founded their own local energy company, Eigg Electric Ltd, which set up and runs the new energy system. To start off the company the residents received a grant from the [National Lottery](#) and the [Highlands and Islands Community Energy Company](#).

About the projects

The Islanders started to look at renewable energy provision three years after the purchase of the island. By 2005, the project was ready for implementation and to build the system, they involved Scottish Hydro Contracting, with subcontractors E-Connect Ventures Ltd, Wind and Sun Ltd, Energy Renewed Ltd, G.G. MacKenzie Contractors Ltd and project managers Synergie Scotland Ltd.

In February 2008 the islanders switched on their new renewable energy system, just over 10 years after the residents bought the island and started to think about the project.

REScoop - Eigg Electric Ltd.

Official year of establishment	2000
Members	100
Project name	Green Island
Country	Scotland
Renewable Energy Source(s)	Wind, Sun, Hydro
Best practice criteria	Energy saving
Mentor	Camile Dressler
Website	www.isleofeigg.net/eigg_electric.html

The new renewable energy network consists of hydro power (112kW) plus wind power (24kW) and solar PV (initially 10kW; a further 20kW later added and more planned). For the contractors it was the first time to combine the three in a closed network. It was part of the system that a local island maintenance team was trained to service and maintain the network.

Residents paid towards installation, £100 per kW connection. If their contractual usage limit is exceeded the electricity is cut off and there is a limited (£20) reconnection charge.

Energy saving and storage

The renewable energy system is designed to produce 95% of the average electricity demand. In summer the production shortfall would be more serious than a mere 5%, as there is less wind and not enough rain for the hydro power production, while the population doubles due to tourism. It is therefore necessary for people on the island to use their energy rationally. Eigg Electric Ltd has chosen to focus on limiting the demand side. Resident connections were capped at 5 kW and larger businesses were capped at 10 kW.

According to Island's website: "The residents supported the concept unanimously, from the outset, and in operation, it has been a total success." An interesting aspect of this decision was that the cap was the same for every household, making sure the resources were equally distributed over the population.

When renewable resources are not covering demand, as in summer when the population doubles and there is no rain, an innovative "traffic light" system asks residents to keep their usage to a minimum. A 'green light' means all is normal. A 'red light' alerts people to be extra careful. This system, associated with an email alert has proven to reduce demand by up to 20%, ensuring that there is nearly always enough energy for the real needs. All household and businesses also have a so called OWL meter. This is an energy monitoring and heat control product, which shows the amount of kW being used at that time. This makes everybody aware at any time about their energy use and makes it easier to comply with the 5kW cap and adapt at times of shortage.

At times when renewable resources are very high, when there is lots of sun, wind or rain and when the batteries are full, the excess power is diverted to heaters in the community buildings such as the community hall and church. A pilot project is underway involving trial of electric vehicles, which can also contribute as peak shaving storage batteries.

The success of an energy transition lies in citizens' participation

The Island is a remarkable project and gives us some inspiring lessons. These lessons become very clear in this project. Because of the remoteness of the island the project is stripped from other complexities, like political and economic powers complicating the energy transition. The project thus shows us what in essence is needed for a successful energy transition.

First, it is remarkable because its technological success, it manages to combine wind, solar and hydro power on a balanced grid, using batteries and demand side management. The small community went through an energy transition in less than 10 years, using all available renewable energy sources and successfully implemented the necessary demand side energy management.

Second, and most important, is the participation of its residents. Of course, one could argue that for them the project is a clear improvement of their earlier conditions, when they relied on individual diesel generators that required fossil fuel shipped in from the mainland. However, 10 years ago the residents were unaware whether this would be an improvement, and one could argue that citizens on the European mainland are actually in the same position now but only on a larger scale. In any way, the citizens participated throughout the whole transition. According to John Booth, Eigg Electric's first chairman: *"This has been a technically challenging and unique project, which owes its success, not just to the individual specialist capabilities of residents, of the project manager, of the contractor and all the sub-contractors, but to the way in which all who have been involved with it have co-operated, jointly discussed every aspect of the project and worked as a team throughout."*

Best practices

- Integrated system of sun, wind and hydro combined with storage and interactive demand side energy saving
- Participation of citizens in the process of the transition and the rational energy usage
- Use of energy monitoring devices to improve the energy demand management

Best practices: Environmental integration of REStechology

Lucéole Société Coopérative à responsabilité limitée



Summary

The development of REStechology can sometimes harm the environment. One returning issue in the development of wind energy is the risks for birds. The REScoop Lucéole wanted to make sure their windpark had as little impact on birds as possible. To develop their park they included ornithologists in the process. Their way of doing so can be an example for many other RES-coops concerned with the integration of RES technology in their natural environment.

About the REScoop

Lucéole Société Coopérative à responsabilité limitée (srl) is a REScoop from the Walloon region in the province of Luxembourg in Belgium. Lucéole wants to participate in the energy transition by promoting local renewable energy production and energy efficiency projects. It is actively involved in the development of a wind project near the town of Habay.

In 2009 a group of citizens gathered when external developers had plans to build a wind park in Habay. It was decided that they wanted to get involved in the wind park. They worked out two strategies. First, to work with the municipality, resulting a municipal advisory board on energy and second, to set up an independent working group for the creation of a citizen cooperative.

In October 2010 the municipality sent a letter to the project developer, Electrabel, appointing Lucéole as the municipal citizen contact. "Apparently the council was impressed by the commitment and the competence of the group", remembers board member Pierre Stassart. This open support of the municipality triggered the establishment of the cooperative.

Lucéole now has 70 to 80 members who take part in the annual general assembly. It is managed by nine board members, supported by four internal competence groups of 25 to 30 members to discuss the short and longer term issues like 'technological developments' or 'social inclusion'. The REScoop has two kind of members, the so called 'guarantors' and ordinary members. To ensure that the original "spirit" and the ideas of the cooperative would be guaranteed, the 55 founding members have a veto right on changes to the essence of the cooperative. Not all of the founding members were locals, quite a few members were members of associative networks from all over the province of Luxembourg.

REScoop - Lucéole Société Coopérative à responsabilité limitée

Official year of establishment	2010
Members	328
Project name	Habay windproject
Country	Belgium
Renewable Energy Source(s)	Wind
Best practice criteria	Environmental integration of REStechology
Mentor	Michel Dolmans, Pierre Stassart, Yves Storder
Website	www.luceole.be

About the project

From the beginning of the project the members of Lucéole decided that they did not want to buy a turn-key project but wanted to be equal partner and co-developer. This meant they wanted influence on the destination of the benefits of the windpark as well as on its impact on the local environment. The articles of association specify that Lucéole will participate in the windpark for a minimum of 25%. Lucéole works in partnership with Electrabel, the main developer of the project.

In February 2014 Lucéole filed the application for a single permit for the park Habay. This park is aligned along the E411 highway in Wallonia. The project the permit was filed for was the result of a long process of technical and, in this case very important, environmental studies. The green electricity that will be produced by the windpark is more than 35 GWh / year, covering the consumption of some 10,000 households. In addition Lucéole filed an application in cooperation with a different project developer for six windturbines averaging between 2.5 and 3.3 MW in the neighboring municipality of Fauvillers. Lucéole will become owner of one turbine.

Concern for the environment

In the partnership Lucéole had a clear and specified role in the environmental impact assessment of wind development in Habay. Lucéole would also focus on the potential impact on the quality of life of the residents. These roles and position were formalized in the articles of association.

One crucial environmental issue constraining the wind turbines concerned the bird population in the area. Some ornithologists had expressed reservations about the wind project. Nature and forests administration were specifically concerned about the protected red kite (bird of prey) population in the area. The conservationists in the area struggled with the dilemma of taking measures in the context of climate change and renewables versus bird protection.

A seminar was organized to discuss the co-existence of the red kite and wind turbines. Lucéole brought together the cooperative members, board members, local conservationists, ornithologists and Dutch and German specialists on the subject. The aim was not to question the wind park as such, but to facilitate the discussion of the issue and facilitate a learning process.

The sub-title was: "For an open understanding of a complex problem". By opening different entries to the same project, the seminar organizers wanted to open the minds to different arguments and perspectives. During the seminar the participants were urged to speak out freely. Participants were assured that there would be no judgments and nothing of what was said would leave the room apart from the final report that was to be approved by all of them. The participants welcomed the opportunity to freely exchange ideas with experts. Wind engineers had never heard about birds in their studies and ornithologists discovered the complexity of ecology. Participants were also invited to participate in other activities. A visit was organized to a site near Amel, a village in Walloon near the German border, where the Dutch experts had been studying a local red kite colony.

Lucéole preferred a learning paradigm that would also allow for compensation or alleviation measures that better fitted the local situation than some of the standard measures that were proposed by environmental authorities.

The REScoop wanted to contribute to developing measures that would actually make sense, rather than just have three hectares of compensation area that would have to be kept open. One of the ideas that came up and that will be studied, was to set up feeding boards to keep the birds away from the turbines.

The administration of nature and forests welcomed the engagement of the group in the protection of biodiversity and slightly opened the door for renewables. The private developers, who in most cases try to communicate as little as possible with the citizens, were positively surprised with the workable conclusions of the final report of the seminar. The positive results of the seminar were the basis for the creation of the assessment group for the bird population within the cooperative.

Best practices

- Involve citizens who can be affected by a REStechonology in an early stage of project development
- Formalize the partnership between citizen groups, project developers and municipalities, and specify the roles and responsibilities in the process
- Create and organize an open debate about environmental issues
Include experts that have reservations on the REStechonology development
- Citizens come up with creative solution that fit the local situation.



Summary

Whalley Hydro, an energy co-operative based at Whalley, Lancashire, England is developing a 100 kW micro hydro-electricity generating plant beside the River Calder. Considering the potential ecological impact (on fish movements, flood patterns and noise), the co-operative went through an extensive environmental impact assessment procedure to ensure environmental harm is avoided. Rivers in the United Kingdom are protected by the Environment Agency.

To build a hydro plant in a river in the United Kingdom one needs to comply with stringent and comprehensive environmental regulations. Whalley Hydro's way of dealing with these regulation, using the expertise of the government agencies, makes this an example of best practice in the environmental integration of RES technology.

About the REScoop

Whalley Community Hydro Limited is a social enterprise, a co-operative run for the benefit of the local community, in the UK a legal entity called an Industrial and Provident Society for community benefit (IPS Bencom). Profits of the project will be returned to the community by supporting local people and organizations to realize more renewable energy projects. Whalley Hydro's mission is to work locally on the global issue of climate change. It is established by four local volunteers from Whalley, a village near the River Calder in Lancashire.

The initial idea for a hydro-plant emerged from discussions among members of Transition Town Clitheroe in 2010. Clitheroe is a town in the vicinity of the river Calder.

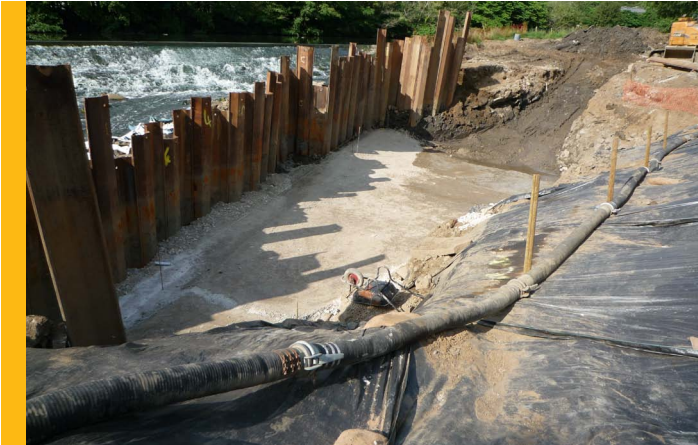
The Transition Town movement, which has active groups nationwide (and abroad), aims to increase local sustainability and community resilience. Four people decided to continue with the idea to produce community owned energy. With the river Calder in the area, the group looked into the options for hydro power to produce electricity. In 2010 Chris Gathercole and three others visited a workshop on hydropower providing them with "very practical information to get started with a hydro scheme."

The group decided to develop and manage the project themselves, confident of their own expertise and abilities to carry this project themselves. One member is a retired mechanical engineer, another member is a retired accountant with experience of many different sized businesses including limited companies. "It is important to have people who have some understanding of the various aspects of bringing a project like this to fruition."

REScoop - Whalley Community Hydro

Official year of establishment	2011
Members	219
Project name	Archimedes Screw
Country	United Kingdom
Renewable Energy Source(s)	Hydro
Best practice	Environmental integration of RES-technology
Mentor	Chris Gathercole
Website	www.whalleyhydro.co.uk

About the project



The group planned a 100kW micro hydroelectric generating plant on the south side of the River Calder at Whalley. The scheme is based on a variable speed Archimedean screw. The Calder is a 'high base flow' river low down the catchment area which provides a dependable supply of water. Whalley Hydro chose to work together with a Dutch company that has experience in building and installing Archimedean screws. Construction of the hydroelectric plant started in the spring of 2014 and will be finished before the end of the summer.

The electricity will be supplied to the national grid. The United Kingdom Feed-in Tariff scheme guarantees an inflation linked tariff of 20.21p per kWh (or 24 euro ct per kWh) for a hydro scheme, guaranteeing the plant's income over a 20 year period. The electricity company is obliged by law to accept the electricity against this tariff. The national feed-in scheme is funded by consumers through a mark-up on their electricity bills.. "We expect the price of electricity in 20 years to have risen enough so that we will continue to have a good income beyond that time when the FiT comes to an end."

219 members purchased shares in the project. Whalley Hydro raised £430,000 from the share offer in the first four months of the offer. The profits of Whalley Hydro will be returned to the community, either by dividends on the shares, or by investing in new renewable energy projects like solar panels and heat pumps.

Environmental integration and regulation

Hydro-project development requires close collaboration with the Environment Agency. To Whalley Hydro it was self-evident that the project would have to comply with all environmental regulations, since the plant would be part of their own local surroundings and environment. "We wanted the same. We are also just as concerned about

our local environment as the people of the Environment Agency and the local council."

Whalley Hydro was also confident that the existing regulation would be sufficient to protect the local environment. One of the first activities Whalley Hydro undertook entailed conducting an Ecological Survey. Although this was required by the Environment Agency, this was also an essential study to Whalley Hydro as they wanted to ensure the project would not disturb the river's ecology. The river Calder used to be highly polluted. However, since European regulations have been put into in place, fish like salmon and trout have returned to the river. The last thing the Whalley Hydro initiators wanted was to reverse that. From the start, the installation of a fish pass or ladder has been part of the plan. Although reversed Archimedes screws are known to be very fish friendly, a fish ladder is required by the Environment Agency which was very strict about the design of the ladder.

The Environment Agency requires an Abstraction Licence to draw water from the river in a bypass to ensure that the flow over the weir and down the fish pass is continued at all times.

Involving stakeholders

To make sure the project was accepted by the local residents, Whalley Hydro actively involved the local community, including the local council, Chamber of Trade members and the local residents living in the vicinity of the hydro scheme. Local support has been overwhelmingly positive. Some concerns were expressed. The planning committee and the local residents were concerned about the view, as the power house will be located in an open field. Therefore Whalley Hydro designed the power house to fit in with the landscape.

Other local residents were concerned about how the hydro plant would affect the risk of flooding. Floods occur once in a while with heavy rainfall and the residents were concerned that the hydro scheme would make this worse. Whalley Hydro was assured by the Environment Agency, who are responsible for flood prevention, that the project would not increase the flood risk. This also convinced the residents.

Whalley is an old village with a conservation area. All construction projects need specific approval by the local council, which is the planning authority. The local council decided on the materials for the powerhouse which would be stone and wood. Whalley Hydro decided to place solar panels on a roof facing away from the village, avoiding reflecting the sun towards the residential area, which could have led to complaints.

The fact that the board members were residents of the area themselves, substantially contributed to gaining local support. It made it easy for them to meet and engage the local residents. Board members contacted the shopkeepers in town to emphasize the tourist benefits of the hydro scheme. One of the board members had been a local councillor himself and therefore knew many people at the local government. In addition, he was familiar with the procedures of the local council.

Bureaucracy

A project with potential ecological impact and environmental regulations meets with specific barriers. One of the main barriers, the developers pointed out, concerns the bureaucracy. The agencies enforcing the regulations are often large and bureaucratic organisations. Even though the expertise of the regulatory authorities proved to be helpful to the project's realisation, this sometimes was also a barrier in the progress of the project. In certain cases the experts of the same organisation held different views on what was the best plan. "Working through the regulations has not been easy. So patience is required."

In early 2013 Whalley Hydro acquired planning permission from the local government and expected to start building that spring. However, getting the lease and access agreement as well as approval for the Abstraction Licence took longer than expected. As construction is only allowed in the summer months on account of river conditions and environmental regulations, this entailed delaying the construction until spring 2014.

Best practices

- Make sure your team has access to sufficient expertise to cover every aspect of the project (technical, financial, legislation)
- Involve the local stakeholders in the project's development
- Benefit from the expertise of the regulatory agencies

Non-technical barriers

- Bureaucracy of large governmental organizations



Summary

In the Danish town of Hillerød one of the first biogasification plant is managed and operated by a local REScoop. The plant runs on woodchips from a local forest. The citizens demanded that the wood was solely from the local forest to avoid any extra CO2 production from the transportation of the woodchips. To sustain this local resource they also demanded that the Danish Forrest Agency that was responsible applied a more sustainable foresting.

About the REScoop

In the Danish town of Hillerød the company BioSynergi Proces ApS developed one of the first biogasification plants. The project was a demonstration project, financially supported by the Danish Energy Agency. After completion of the project the plant was to be run by an autonomous independent company. The company gave citizens in Hillerød the opportunity to be investors and owners of the company that was to run the plant. The marketing of the project was based on advertisements, articles, interviews to newspapers and the Danish Radio, since it is the first time Danish citizens can participate actively in a biogasification project. Within 2½ months in the autumn of 2011, 1,050 shares at a price of 1,000 euro each were sold.

REScoop - Hillerød Biogasification P/S

Official year of establishment	2011
Members	17
Project name	Ullerød District Heating
Country	Denmark
Renewable Energy Source(s)	Biomass (woodchips)
Best practice	Environmental integration of REStechonology
Contact person/ Mentor	Erik Christiansen

The investors organised themselves in the democratically run company called Hillerød Biogasification P/S. The responsibility of the plant operation was transferred to the REScoop Hillerød Biogasification P/S after the completion of the project. The biogasification REScoop will now ensure the long term operation of the demonstration plant, selling the heat to Hillerød Varme A/S (existing district heating system) and the electricity to the public electricity grid.

About the project

The biogasification plant is located in connection to the wastewater purification plant in Hillerød, a town with approx. 50,000 inhabitants, just beside an operating fossil gas based heating plant. Hillerød is located just beside the forest where the wood chips are produced. The transportation is max 5-10 km.

The biogasification plant can produce 300 kW power and 750 kW heat. The plant is powered by an uncomplicated and efficient gasification process that turns wood chips into a combustible gas, which is used as fuel by an engine that generates electricity and heat. Traditional chip- fired plants only produce heat. The biogasification plant is very efficient. Of the energy content of the raw material, wet forest woodchips (100%), 26% is converted into electricity and 58% is converted to heat.

Electricity is supplied to the grid, while heat production is supplied to the existing district heating system, which is owned by the local municipal heating company. District heating is showing its potential in terms of integration of renewable energy systems in existing facilities, as the plant is established in conjunction with and partially replaces the fossil gas based heating plant.

Electricity production is paid for according to the principles of the Danish law on promotion of renewable energy, while heat production is settled after an agreement with the local district heating company. It is agreed that the settlement heat price for the chip-based generation shall be lower than natural gas price.

Environmental issues

The use of biomass is throughout EU considered to be neutral in relation to CO₂-emissions, because the conversion of wood to useful energy only releases the same amount of CO₂ as produced from the natural decomposing of the wood when it would be left in the nature. The released amount of CO₂ also balances the captured amount during the growth of the trees. A bio gasification plant therefore is an interesting way to reduce dependence on fossil fuels. This technology enables the use of untreated, CO₂-neutral wood-chips that are produced from wood that cannot be used otherwise, such as from thinning (too small trees to be marketable otherwise) and pruning.

In the negotiations about buying the woodchips from the local forestry, owned by the Danish state (The Danish Nature Agency), the cooperative demanded that the Nature Agency guarantees the origin of the wood chips from the local forest, but also that the wood chips are based on sustainable forestry. Local sustainable production of wood chips minimizes the CO₂ emissions when it comes to the transportation of wood chips. According to Erik Christiansen, member of the cooperative: "It didn't seem right to have such an innovative sustainable project and then still have unnecessary CO₂ production for the transportation of wood long distance" The Danish Nature Agency first were surprised about these extra demands of woodchip customers, but after some months of negotiations the Danish Nature Agency accepted to guarantee both.

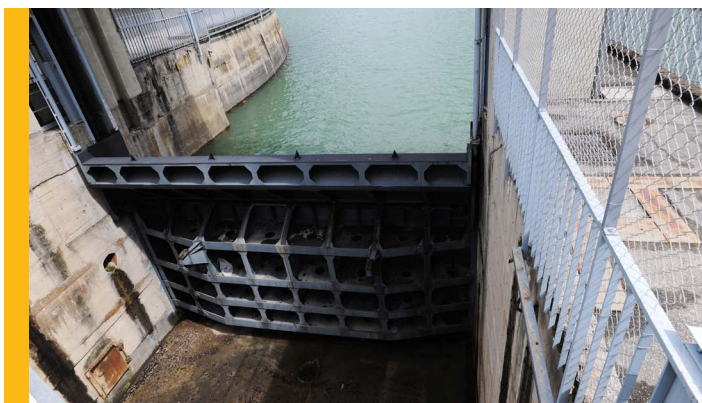
Furthermore the removal of the small trees means that the growing conditions for the remaining trees in the forest are improved, which in turn improves future timber quality. This means that the utilisation of wood-chips for fuel also can be of importance to forestry, since the production of wood-chips results in better care for the forest.

Best practices

- Create local sustainable jobs in the community
- Ensure to fulfill environmental targets as a part of the project, indeed, even go beyond of what is required by the existing environmental regulations.

Best practices: Cooperation between REScoops

Südtiroler Energieverband (SEV)



Summary

Südtiroler Energieverband (SEV) is a best practice when it comes to working together between REScoops. The association started small by offering services to its members but has grown out to a business covering services from invoicing customers to insurances. The associations copied the Raiffeisen model where there is a strong central organisation that offers services to local members.

About the REScoop

In 2011 the Raiffeisen Energieverband and the Biomasse Verband Südtirol joined forces and became The Südtiroler Energieverband (SEV). The Raiffeisen Energieverband was founded in the city of Bolzano in 2006. It was an association of renewable energy producers and distributors in the South Tirol area and governed as a cooperative.

The Biomasse Verband was an association founded in 1999 by six district heating companies. Both associations wanted to provide back office services to their members which were producers of heat and electricity and they decided to join forces.

SEV has 305 members. These members are producers and distributors of heat and electricity. Most of them are private companies, often farmers with a large PV installation. Other members are historical cooperatives. These cooperatives started when in (at that time) the Austrian Hungarian Empire the national grid was built in the early 1900's it was too expensive to connect the small villages in Tirol to the grid. The people in the towns build their own grids complete with electricity production, which they cooperatively owned. This is the reason why there are so many REScoops in South Tirol.

About the project

In 2011 the Raiffeisen Energieverband and the Biomasse Verband Südtirol joined forces and became The Südtiroler Energieverband (SEV). The Raiffeisen Energieverband was founded in the city of Bolzano in 2006. It was an association of renewable energy producers and distributors in the South Tirol area and governed as a cooperative. The Biomasse Verband was an association founded in 1999 by six district heating companies. Both associations wanted to provide back office services to their members which were producers of heat and electricity and they decided to join forces.

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REScoop - Südtiroler Energieverband (SEV)

Official year of establishment	2011
Members	305
Country	Italy
Renewable Energy Source(s)	Biomass, hydro, solar
Best practice criteria	Cooperation among REScoops
Mentor	Rudi Rienzner
Website	www.sev.bz.it

in Tirol to the grid. The people in the towns build their own grids complete with electricity production, which they cooperatively owned. This is the reason why there are so many REScoops in South Tirol.

Copying the Raiffeisen model



After the liberalization of the energy market in 1999 the electricity cooperatives recognized they had to work together to remain competitive in the new open market. "The risk of the liberalization was that small local energy companies had to merge into larger energy corporations and would lose their independence." Rudi Rienzner and George Wunderer initiated the idea of setting up a second level cooperative. Rienzner worked as a president of a local Raiffeisen bank. George Wunderer was the president of E-Werk Prad, a REScoop in the Bolzano region. He started a company to deliver services for his own REScoop and others. Both set out to find a good model to make cooperatives work together. They found the solution in the Raiffeisen model. There were the Raiffeisen banks and other Raiffeisen associations like the apple and wine cooperatives in the region. The local Raiffeisen banks have their own board chosen by their own local members. The central Raiffeisen structure offers services like the back office administrative and invoicing systems.

The Raiffeisen bank supported the idea and helped with the set-up of the Raiffeisen Energieverband. They moved the company that was set up by E-Werk Prad to the Raiffeisen Energieverband and asked other REScoops to join and use their services. 49 REScoops in the area joined the association in the first year and the Energieverband grew out fast to an association with 305 members.

Services to members

In the newly created SEV both associations work together to serve their members as a second level cooperative. They started small by offering the services of invoicing the energy bill to consumers of the local cooperatives. Now the SEV has eleven employees offering a service package that takes over most bureaucratic activities that are a burden for small REScoops like selling and buying of produced energy, invoicing to customers and the metering.

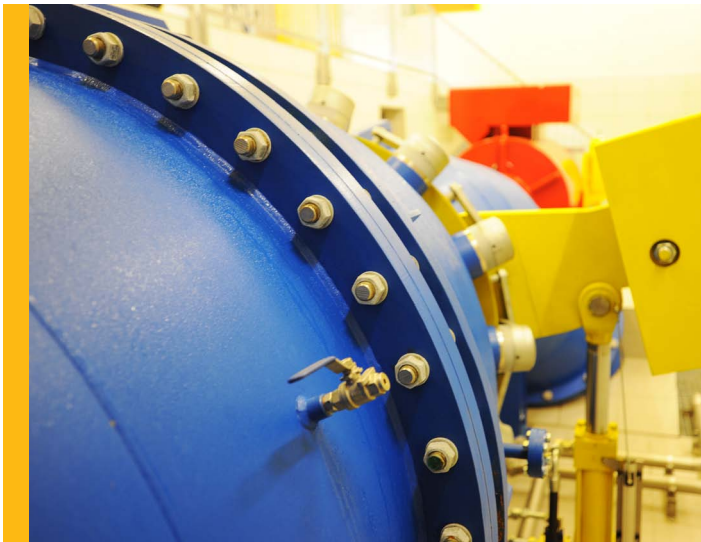
Sharing knowledge and improving members

SEV has several ways to inform its members. They organise conferences on specific topics. At the conferences interested members meet half a day, where the association fills them in on new regulations and legislation. "There are about 300 new regulations and legislations a year to inform our members on" according to Rudi Rienzner.

The association runs its own competence centre. Here members with experience in a certain field train other members in order to improve their REScoop. The association also has permanent working groups that develop their own programs and decide what issues to deal with. In addition the association communicates with its members through newsletters. Members can choose the activities they want to be informed on. "We do this so that our members can improve and the associations stays strong."

Financial cooperation between cooperatives.

In 2012 SEV decided to start a financial company called SEV financial. Due to Italian regulation this could not be a cooperative since it was a financial institution. The REScoops are individually financially strong organisations, however, sometimes large projects are too big for an individual REScoop to handle. The idea started when due to European regulations there was the possibility that the regional government had to give up part of its shares in a large regional energy company. The members of SEV came together to buy the shares of the regional government, with the intention to also become owner of the production to sell to the individual members of the cooperatives.



This way, the company was still regionally owned, only now by its citizens instead of the public authority. At the moment (June 2014) SEV is still in negotiations on the shares.

An added value for the financial cooperation between the REScoops in South Tirol is the possibility to work together to bid for new concessions. River concessions in South Tirol are needed to produce energy with hydro-power. Several concessions will expire and will be put on the market in the next five years. For a single REScoops these concessions are too expensive. SEV financial now prepares the bid for their members to participate in the new call for the concessions.

The company does not hold capital of its members in its organisation. It is only a very small company and its board members are the same board members of SEV. "It is only a vehicle to work together financially." SEV financial only prepares bids for its members. Once a bid is accepted they collect the money from the members participating in the bid.

Best practices

- Keep local what needs to be local en central what needs to be central.
- Copy existing models of other cooperative associations.



Summary

The Danish District Heating sector is in numbers dominated by cooperatives. There are about 350 REScoops in the sector. The district heating companies work together in the Danish district heating association. Danish district heating regulation ensures the absence of a profit motive and thus makes the sector non-commercial. This in turn makes members non-competitors so they can work together, share their knowledge and services and thus constantly improve the service to its customers.

About the REScoop

Dansk Fjernvarme is the Danish District Heating Association. They are the trade organization for district heating companies in Denmark with +405 members. Its members are mostly cooperatives, 40 municipal utilities and 10 private companies. They represent about 99% of all district heating companies in Denmark, supplying more than 1.6 million households with heat.

In Denmark it is very common to start a trade association when companies have the same interest. In the 50's a small number district heating companies started to work together around the town where the association is located now.

Since then the association has grown throughout the years. In the beginning the reason to work together was to share knowledge and to lobby the government on regulations. This goal has not changed but the work has grown more extensive. Now about 50% of the income of Dansk Fjernvarme comes from educational events like courses and conferences.

Governance

Every year there is an Annual General Assembly where the members select the board. There are 15 board members and they meet about 6 times a year. The board exists out of two groups. One group are the technicians, meaning district heating professionals employed by the members in the sector. The other is the governing group, these are the board members of the district heating companies. For the cooperatives this is often a board member of the cooperatives, for the municipalities that own district heating it is often a member of the municipal council.

Within those groups the Dansk Fjernvarme tries to ensure an equal representation of its members. In every group there are representatives of small members, large members, municipal members, private companies and heat transmission companies. The voting rights and membership fees depend on the heat sales.

REScoop - Dansk Fjernvarme

Official year of establishment	1957
Members	405 (350 REScoops)
Country	Denmark
Renewable Energy Source(s)	Heat
Best practice	Cooperation among REScoops
Mentor	Birger Lauersen
Website	www.danskfjernvarme.dk

Sharing knowledge

Dansk Fjernvarme has a lot of different 'know how' groups where members share their knowledge. These groups deal with shared interest of members. For example there are groups that use specific fuels like biomass, woodchip or straw or for technologies like localized CHP, or for members that buy heat from local incinerators. Also there are subgroups with members that use equipment of specific manufacturers. In addition there are groups on other issues like taxation and regulations. The members of these groups are volunteers. A member of the staff of the association acts as a secretary of such groups to report on the working groups. The groups are used for two purposes, to enhance the cooperation between members like sharing best practices the other reason is for input for the association on technical issues or for policy development.

No competition brings strong cooperation

District heating is considered a monopoly business in Denmark. This means they fall under monopoly regulations of the Danish government. This means the companies are always not-for profit companies. As a result a logical ownership structure is cooperative or municipal. The cooperative model is a useful model to give back the benefit to the end user through cheaper energy prices. The dominance of the cooperative model is mostly due to these regulations. Nonetheless many of the cooperatives were set up before the regulations existed. "That is mostly to do with the Danish cultural heritage to organize these kind of local activities in cooperation" according to Birger Lauersen, manager international affairs of the Danish Heating Association. The district heating cooperatives are active in a specific area. Their goal is to serve their members. It is not their goal to expand to other areas or to make more profit. There is no competition between the cooperatives. This situation naturally creates a situation where it is no problem that other companies in the sector improve themselves. The cooperation between cooperatives specifically has that aim, to improve the local cooperatives and thus creating a better sector overall, to the benefit of the individual consumer.

Spin-off cooperative business

By working together different cooperatives concluded they needed the same services. Around 250 members cooperatively own an IT company. When IT became standard the members first bought these IT services separately from different local companies. These companies sometimes went out of business, for instance through bankruptcy, sometimes they surprised the cooperatives by stopping serving certain legacy software. As a result several small district heating cooperatives were confronted with IT problems.

A group of members therefore decided to start their own IT Company. Setting up an IT company was of strategic importance. The cooperatives needed stable and well maintained IT solutions. Losing the service to updates or having to adjust IT systems causes management and billing issues for district heating companies. Therefore they needed an IT company that the members controlled themselves and could trust.

Another spin-off was the start of a cooperatively owned engineering consultancy company. When the district heating companies started, engineering consultancy services were very expensive. Different district heating cooperatives came together and started their own consultancy company, with specific knowledge of the sector and offering lower rates. As a result the other consultancy companies adjusted and lowered their prices.

Best practices

- Make sure every kind of member is represented and their needs are covered.
- Acting as a sector together makes cooperatives stronger in the lobby but also in the development



Summary

Enercoop is the first and largest cooperative renewable energy supplier in France. The REScoop works on a national level and is part of a network of local cooperatives. Enercoop started in 2005 and has supported local cooperatives since 2009. Cooperation between cooperatives on a national level has several practical benefits, like sharing services and knowledge. It also supports the mission of Enercoop to decentralize the energy market and bring RESenergy production closer to citizens.

About the REScoop

Launched in 2005 by French ecological and ethical business organizations, Enercoop is a 100% green energy supplier. Today it is the largest supplier of renewable electricity in France with 12.000 members and 17.000 customers, and around 100 producers of renewable energy. It is a cooperative of seven regional cooperatives operating in various regions across France.

Enercoop is a registered 'Société Cooperative d'Intérêt Collective (SCIC), a French legal form of the cooperative model that allows for a varied membership, including producers, consumers of renewable energy, employees and other stakeholders. Enercoop's mission is to promote renewable energy and efficient energy use.

Enercoop also wants to decentralize the energy production and enable citizens to participate in the energy transition. By supporting the emergence of new local REScoops, Enercoop is creating a nationwide network of cooperatives within which every citizen can invest and participate.

Rooted in the movement of social and solidarity-based economy. Enercoop is committed to creating new ways of organizing business, which is ethical and responsible, ensures financial transparency and redistributes its financial profits into new RES projects. Enercoop considers itself as a 'private enterprise with a public interest', a 'social enterprise' and an alternative to state or publicly and privately owned enterprises. In this sense it is a political project.

About the project

The core philosophy of Enercoop is to decentralize the energy market. In France the nuclear program, that was established in response to the oil crisis in the 1970's, has strongly favoured centralized production, neglecting the opportunities of decentralized

REScoop - Société Cooperative d'Intérêt Collective Enercoop

Official year of establishment	2005
Members	12.000 (and 17.000 customers)
Country	France
Renewable Energy Source(s)	Hydro, solar, wind
Best practice criteria	Cooperation among REScoops
Mentor	Julien Noé (Deputy Director), Stéphanie Lacomblez (Head of Communication and Sales department), Adrien Thébault (Production officer), Guillaume Marcenac (Enercoop Languedoc-Roussillon)
Website	www.enercoop.fr

and renewable production. Enercoop wants to change this system. The liberalization of the energy market in 2004 enabled new actors to enter and change this market. The idea behind the development of regional cooperatives was to bring the production and supply of energy back on a local scale and therefore create an Enercoop in every region in France, or at a more local scale. The cooperative model allows citizens to get involved in the governance and ownership of supply and production. This is important, according to Julien Noé, Deputy Director of Enercoop:

“Enercoop believes that the consumer should be closer to the production. This will enable consumers to get a better understanding of what kind of product he is consuming and how it is produced. People will use energy more rationally when they are involved on a local scale. They also better understand the goal behind developing energy production when they get involved in the decision-making process.”

Enercoop primarily operates as a supplier, meaning it buys energy from renewable energy producers and sells it to its customers. The producers can be members of the cooperative. The production itself is not necessarily cooperatively owned, although Enercoop is increasingly investing in citizen-financed and owned production capacity.

Cooperation between cooperatives: governance

Enercoop started as a national REScoop, but it always aimed to form a nationwide network of regional cooperatives. Since 2009, seven regional cooperatives have been established in various regions across France.

The governance structure and organization of ‘cooperation between this national cooperative and these regional cooperatives’ is still being developed and subject to internal discussions. The cooperatives work together in committees on shared issues of concern. Each regional structure has its own statutes, based on the same model of the first Enercoop, but adapted to the situation and needs of the specific region and enforced by their own general assemblies. All regional cooperatives have a one member-one vote policy.

Enercoop (the national cooperative) is owned by its individual members. In the general assembly, the power is distributed among several bodies as follows:

- the consumers (20% of the votes)
- the producers (20% of the votes)
- the employees (10% of the votes)
- the public partners (10% of the votes)
- the private partners (10% of the votes)
- the founding members (30% of the votes)

Sharing services

One of the key benefits of cooperating through a network of cooperatives is that tools and services, such as a back office, information systems, accountancy services and communication tools can be developed for and shared between the members of the network. A common database was developed, with access rights for each cooperative to its own information (regional clients, members, potential clients, producers, employees).

Sharing and developing knowledge

The REScoops work together on a national level on shared issues, such as energy supply, communication, commercial, lobbying, clients relation service, tools (IT systems, communication tools, etc.). For each of these issues committees were formed. In addition a directors committee was created in which the directors of the cooperatives meet on a regular basis.

The development of the REScoop happens in a mix of top-down (the committees on shared issues) and bottom-up, eg, when local innovations in project development or efficient energy use projects are expanded on a national scale. as a concrete example, one of the regional cooperative started giving specialized training courses to local public authorities or other stakeholders involved in RES development. Currently, three of the seven cooperatives are doing the same.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.

Working together in projects

Julien Noé: "There has been a very positive impact of the cooperation among cooperatives. Several projects would not have been created without cooperation." Renewable energy projects are always specific local projects where it is necessary to involve local stakeholders. However, it is very complicated for a national organization far away from the local site to identify and get in touch with the relevant local actors: "meeting stakeholders such as local energy producers for instance could not have been done if the contacts were not present on a local level".

Best practices

- Create a structure where local cooperatives can share their experience so others can learn
- Use the local presence of the local cooperation in the development of new projects

Non-technical barrier

- France's energy market and government biased focus on centralized production by the energy giants.

Best Practices: Community engagement

Energiegenossenschaft Odenwald eG



Summary

Energiegenossenschaft Odenwald eG is a German renewable energy co-operative (REScoop) located in the state of Hessen in the district Odenwald. It was founded in 2009 and has since significantly invested in solarPV systems on rooftops, several wind projects and is currently expanding its activities to include wind, biomass, renovation and energy contracting. Its key objectives are: improving the local economic dynamics, creating jobs and increasing regional independence. To boost the regional renewable energy sector the cooperative is investing in a 'Haus der Energie' (House of Energy). By creating a local hot spot for energy related enterprises, synergy advantages are expected.

About the REScoop

The idea to establish an energy cooperative first emerged when the Odenwald Kreis (local district administration) wanted to stimulate renewable energy production to strengthen the local economy. The economy of Odenwald is structurally weak. Industry is lacking and with most people working and shopping elsewhere jobs and money is structurally leaking out of the region.

As public governmental institutions cannot invest in energy production themselves, it was decided to create an independent energy co-operative. Local municipalities and the Volksbank of Odenwald were actively involved from the start. The Volksbank lent a number of employees who worked full time for the cooperative.

Compared to other cooperatives, which tend to depend on busy volunteers, this allowed to significantly accelerate the development. By bundling existing energy initiatives Odenwald eG managed to expand and scale up fast, resulting in a well performing organization in a relatively short time. Currently, the cooperative employs 3 fulltime and some part time employees and represents over 2000 members, all citizens living in the district Odenwald and its direct surroundings.

Odenwald first focused on solar projects and has invested into 5 MWp of PV systems on 70 buildings in the district of Odenwald and the surrounding municipalities. The REScoop also co-invested into two windmills, one with another energy cooperative (Starkenburg eG), the other with the local district administration and the municipality. These investments provided its members with a steady dividend of 3,5% over the past two years.

REScoop - Energiegenossenschaft Odenwald eG

Official year of establishment	2009
Members	2600
Project name	'Haus der Energie'
Country	Germany
Renewable Energy Source(s)	Solar, wind
Best practice criteria	Community engagement
Mentor	Florian Voigt
Website	www.energiegenossenschaft-odenwald.de

The cooperative has accumulated around €8 million in member equity, complemented with Volksbank loans up to €35 million. Odenwald eG is planning for multiple windturbine projects in the coming eight years, in theirs and other regions. It is also exploring opportunities of energy efficiency oriented renovation projects, (biomass) pellet production and trading eco-electricity (energy contracting). Electricity is currently bought and sold to the members by a partner cooperative called GENO-strom.

Developing the local economy

Regional value creation is one of the key objectives of Odenwald eG. It has invested over € 30 million in the area, over 1250 projects were carried out by local enterprises, creating new jobs and revitalizing the local economy and the community. "We prefer to take on the role of project coordinators in developing wind projects ourselves", says Florian Voigt, the cluster manager at Odenwald eG, "because when external parties do the job, a lot of money would flow out of the region". Sharing similar economic interests, the REScoop has developed partnerships with regional business platforms and organizations.

Odenwald eG also works with other cooperatives, with energy cooperatives when developing wind projects (such as with Starkenburg in Odenwald and Untermain eG in Bavaria), when buying and selling the eco-electricity (with GENO Strom) or with other cooperatives for, for example, accountancy and ICT services. The Volksbank itself, one of the founding members, is a cooperative bank. Cooperation between cooperatives and helping other cooperatives is part of the overall philosophy. "This works rather good, since cooperatives are willing to grant each other things," observes Voigt.

Haus of Energie (House of Energy)



An interesting project that exemplifies the Rescoop's mission to boost the local economy, is the 'Haus der Energie' (House of Energy), a regional renewable energy hot spot and expert centre. Odenwald eG acquired the building in 2011 and is creating offices and work spaces for over 300 people from companies within the energy sector. By bundling energy related activities and key stakeholders on one location synergy advantages are expected.

Significantly, several public institutions, such as the Odenwald district administration decided to move their energy and building department to the Haus of Energie. This will attract and benefit other energy related enterprises. Schools, colleges and universities have also planned to set up a joint research Workshop (or laboratories) at the Haus of Energie, partly linked to startups and innovative enterprises.

Odenwald eG, the owner, will re-invest the rent revenues into new local energy projects. The rent will stay within the region in this way. In addition, the renovation process is also commissioned to local craftsmen.

The building used to be part of a brewery complex but had been left empty since 2006. It is renovated sustainably with a solar power system and a combined heating and power system fueled by biomass (pellets), as "we want to gain experience with biomass heating", Voigt explains.

Best practices

- The opportunities of renewable energy investments are utilized to stimulate the local economy. Regional value creation is a main objective.
- Activities are also directed to stimulating and enhancing regional cooperation between key stakeholders. By creating a local hot spot the energy sector will benefit through synergy advantages.



Summary

REScoops are not simply new energy companies. Many of them have other goals linked to the development of their local area. Hilverstroom en Gas is a very young REScoop that only started last year but is part of a strong cooperative tradition in its region. According to the REScoop the energy transition is not so much about producing renewable energy but more about sustainable development. It states in their articles of association that part of the profit will be redirected to the region by supporting sustainable development projects. Hilverstroom's approach is a best practice because it uses a model that is broader than just renewable energy production. It demonstrates that REScoops can be a tool for broader sustainable development, connecting the energy sector to other social issues.

About the REScoop

Hilverstroom en Gas is a REScoop in the municipality of Hilvarenbeek in the Province of North Brabant in the Netherlands. At the moment they have 55 members and one employee. They started to collectively buy and sell renewable energy to their members. About 40 volunteers work on different projects ranging from solar projects, wind power, biomass and small hydropower.

For the start-up the REScoop copied the model of Ecopower in Belgium. They took Ecopower's articles of association and adjusted them to their local goals and situation. For the selling and buying of energy they partnered with a Dutch energy company that also works together with Ecopower.

The REScoop started off by collectively buying solar panels for their members. The REScoop made sure they became a one-stop shop for their members. The members contacted the REScoop to order the solar panels. The REScoop contacted a pre-selected local installer and asked for an invoice. Hilverstroom sent an invoice to its members adding a small margin for the REScoop. The members sign a contract with the REScoop and pay for the solar panels. Hilverstroom buys the solar panels and contracts the local installer to install the panels. The members do not have to do any selection of solar panels or installers, the REScoop does this work for them. Even with the extra margins for the REScoop the solar panels were still cheaper than individual market prices. Nonetheless the REScoop made a small profit which they reinvested in the development of new renewable energy projects.

One of these projects is a small hydro scheme. This scheme is quite exceptional. Next to a canal through the region, the Wilhelmina canal, there is a historic pumpstation. The pumpstation was used to keep the canal at the same water level. In the building there are two electrical pumps that used to pump water in and out.

REScoop - Coöperatie Hilverstroom en Gas

Official year of establishment	2012
Members	55
Project name	Sustainable development
Country	The Netherlands
Renewable Energy Source(s)	Bio, solar, wind
Best practice criteria	Community Engagement
Mentor	Wiet van Meel
Website	www.hilverstroom.nl

The REScoop is researching the possibility to modify these pumps so that instead of using power for pumping water, a waterflow would generate electrical power. At the moment a local engineering company is doing a feasibility study on the project.

Sustainable development

The goal of the REScoop is not simply to produce, sell and buy renewable energy for their members. These activities are considered a tool for the sustainable development of their region. Many of the villages in the agricultural parts of the Netherlands are aging, the young and economically active people are moving to the cities. Hilvarenbeek is threatened by the same problem if they do not find a way to remain sustainable in a broad aspect.



The town Esbeek in this municipality has a strong cooperative tradition, the REScoop is only one of the many cooperatives in the area. The town has its own cooperative called Coöperatie Esbeek that functions as an umbrella for other cooperative initiatives. The cooperative started when the local pub was threatened with bankruptcy. The local people of Esbeek came together and started the cooperative. The cooperative gave out shares and the local people collectively bought the pub, still running it today. Another important success is the development of houses for starters by the cooperative. By building houses in the price range for young people the cooperative tries to keep young people in the town. The REScoop thus was a logical addition in the sustainable development of the area.

Connections between sectors

The idea behind the projects of the REScoop is always to make connections between different fields in society. The idea of sustainable development is that people, planet, profit are in balance with each other. According to Jos Römgen: "With every project we are always looking for smart connections between public agencies, citizens, business and local societies. This improves the local participation in the sustainable development of their area."

"The problem with our current society is that it is fragmented" according to Wiet van Meel, initiator and member of the REScoop. A good sustainable project connects with all these different fields and brings back that balance. Wiet explains that good sustainable development always incorporates many different social, urban/rural planning and economic aspects in its plans and activities. The REScoop is therefore part of a larger cooperative that works on social housing, elderly care and rural planning.

Best practices

- See your REScoop as a tool for sustainable development.
- Make connections between sectors in society, creating broadly accepted sustainable projects



Summary

The REScoop Courant d'Air owns 40% of a windpark in community of Waimes. The initiators of the project wanted the project to contribute to the sustainable development of the community. When the local government asked for financial compensation for a permit for the windpark, the REScoop took it upon themselves to change this from something negative to something positive for the community. They set up educational projects for children and its members in the community. Next to this they wanted to run energy saving projects through micro credits. However due to a lot of bureaucracy of the regional government and actions of the National government concerning the support mechanisms this form of community engagement has not taken off yet. Courant d'Air demonstrates that REScoops work for the benefit of the community but are often frustrated by governments representing that same community.

About the REScoop

In 2004 Mario Heukemes and Achim Langer were looking for an alternative to big multinationals in the energy sector. Their goal was to set up a company with a more sustainable goal, where the revenues of projects would be turned into new sustainable projects. The two initiators started a project developer, Mobilae. They wanted to be completely independent to "develop ideas and to be able to decide themselves what the revenues of projects would be used for based on their sustainability philosophy." One important goal was to raise local awareness and support for renewable energy projects as well as for the need for energy saving. According to Mario and Achim, the cooperative approach has certainly helped in reaching this goal. The REScoop now has 700 members which is a large outreach in this scarcely populated region.

REScoop - Courant d'Air srl-fs

Official year of establishment	2009
Members	700 (90% local within 30km in the thinly populated area)
Project name	Windpark Waimes
Country	Belgium
Renewable Energy Source(s)	Wind
Best practice criteria	Community engagement
Mentor	Mario Heukemes and Achim Langer
Website	www.courantdair.be

The development of the Chèvremont local wind energy project in the local community of Waimes took Mobilae six years. They needed two tries to get the permits for the windpark. It was mostly the bureaucratic struggle with the local public administration that caused the delays. In 2009 the citizen cooperative Courant d'Air was created to allow the citizens that could be affected by the installation of the wind park to share in the financial benefits of the project. While Mobilae would bear the risk of the development, the cooperative stepped in when the project had received the necessary permits.

The windpark of five 2.4 MW windturbines is owned by three parties, 40% Courant d'Air scrl-fs, the local citizen cooperative, 40% Mobilae sprl, the developer and 20% by Ecopower. Ecopower helped with financial support, to secure the purchase contract for green power and the green certificates for electricity produced by the park.



Turning financial compensation into educational projects

The local government made several demands before they would give out the permits to build the wind turbines. One demand was that 6000 trees had to be planted to restore the biodiversity of the area around the wind turbines. The REScoop decided not to have this done by an external company but involved its members and almost 500 local schoolchildren as part of their goal to educate citizens on climate change and the energy transition.

A second demand was a financial compensation for the placement of the wind turbines. The local government instituted a local tax on the wind turbines. The REScoop proposed an alternative. Instead of taxing the new wind turbines, the cooperative suggested to invest in energy saving measures in and the installation of PV-panels on municipal buildings and local schools. After quite some quarrelling with the federal tax authorities and the regional municipalities this resulted in the full sponsoring of PV-installations on four schools in the municipality.

Linked to this investment is also an educational project. There have been several projects on renewable energy and visits of school children to the wind turbines. Afterwards the children were asked to make drawings on renewable energy. These were used to make educational panels for the playground.

The investment in the PV-installations was to initially cover 80 to 85% of the electricity consumption of the schools, stimulating them to invest in energy saving measures. Courant d'Air suggested that the schools contact them to look into the necessary investments, also related to heat consumption. As a consequence of the advice they started projects to insulate the external walls and upgrade heating boilers.

Community engagement sometimes fails due to government actions

For Courant d'Air it has always been an important goal to focus just as much on energy saving as renewable energy production. Courant d'Air noticed that not many people were investing in energy savings in their own houses. "Lots of homes still aren't well insulated even though interest rates for loans are historically low and the support given by the Walloon region is interesting." Courant d'Air sees three important explanations: "1) the complexity of the process and paperwork involved in the application for support and 2) the lack of technical and financial analyses to validate the investment involved. 3) The financial crisis makes people wait for "better" times."

Courant d'Air's wanted to address this problem by offering micro credits to members. They hope to be able to recoup part of the cost by pooling purchases, by optimally using subsidies from the Walloon Region and by getting special conditions from banks. They planned to have about 10 projects a year to start with, hoping to reach 50 to 100 after the initial phase. Mario and Achim see this as a non-profit service. They want to reach a large share of the cooperative members of Courant d'Air, but also others in the local population; targeting private households, with special focus on families at the risk of poverty. Apart from households they also saw a need for public buildings, specifically schools.

Executing this excellent idea proved difficult. They had to overcome many, often surprising, barriers. The extra support from the Walloon Region was hard to secure due to the complexity of applications for support.

There was a lack of technical and financial analyses to validate investments in energy saving measures and finally there was the unstable support mechanism for renewable energy. Unexpectedly the revenues from the wind park were reduced, thus limiting the financial room for Courant d'Air and Mobilae for these plans. Due to these set-backs, Courant d'Air has not completed any energy saving projects.

Best practices

- Involve members in educational projects.
- Turn compensation for a wind park into something positive for the community.

Non-technical barriers

- Lack of technical and financial analyses to validate investments in energy savings measures
- Unstable support mechanisms for renewable energy
- Complexity of the applications for energy savings support