Elektrizitätswerk Hindelang eG
Rural Energy Community Best Practice
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Executive summary

The energy community Elektrizitätswerk Hindelang eG is a Rural Energy Community that was founded in 1923 and is generating electricity from a hydropower plant that was commissioned in 1926. The Rural Energy Community is organised as a cooperative and operates as a utility company with grid operations and a sales department. Members of the cooperative meet yearly to decide on strategic decisions and vote for the Supervisory Board. The cooperative manages to operate a 24/7 emergency call service with 16 employees and just a handful of people operating the service. Usually, one technical person and one business person are in charge at any one time.

The company has a flexible structure that takes into account the fact that employees have other duties in farming or other activities of rural life, which they can prioritise over working for the energy community when necessary. This flexibility is needed and is an important part of the success of the energy community. To work for a Rural Energy Community requires everyone to respect the other obligations that are part of rural life.

The cooperative has been a strong people’s business. Crucial in this has been the willingness of operational managers to take risks and be creative. Some unique people had ideas what they wanted to realise and managed to do so. The connection with other energy cooperatives in the region is an advantage to the energy community as it has the resources for other activities, such as the trading of electricity. The cooperative in the biggest town in the area handles trading of electricity for the energy community.

1. INTRODUCTION

1.1 RURAL CHARACTERISTICS OF THE COMMUNITY

The Local Administrative Unit¹ of Bad Hindelang is classified as a ‘rural area’ according to DEGURBA.² Accordingly, the energy community Elektrizitätswerk Hindelang eG is a Rural Energy Community within the remits of the Rural Energy Community Advisory Hub and is eligible for technical support.

1.2 NAME OF THE RURAL ENERGY COMMUNITY AND GEOGRAPHICAL SCOPE

The energy community Elektrizitätswerk Hindelang eG is located in and supplies energy to the municipality of Bad Hindelang. The municipality is a village located in a valley in the mountainous region of the Allgäu Alps. Around 5,000 people live in the municipality and there are 38 inhabitants per km². The altitude of the village is 825 m and it is located 30 km south of the closest bigger city Kempten, which has around 70,000 inhabitants. The energy community has 3,606 customers and is a partner of AllgäuStrom. AllgäuStrom is an association of nine energy suppliers in the alpine region of Allgäu in southern Germany. All nine Allgäu energy suppliers are independent of the four large corporations in Germany. They are either organised as cooperatives or their shareholders are cities and/or municipalities, reaching around 124,000 participants. The association is cross-border and includes the municipality of Riezlern in Austria.

1.3 AVAILABILITY OF THE INFORMATION

The information on the community’s website³ is wide-ranging. It includes details on:

- The company
- Electricity procurement, including detailed information on the different products, registration, etc.
- Gas procurement
- Power grid
- Electricity generation

1 https://ec.europa.eu/eurostat/web/nuts/local-administrative-units
2 https://ec.europa.eu/eurostat/web/degree-of-urbanisation/background
3 https://www.ewhindelang.de/
• Measuring service provision
• Services, including energy consulting, energy-saving tips, and FAQs
• Contacts

The website is well organised and information can be found easily. It includes many forms and links to useful contact persons. In addition, there are direct links to most frequently requested information on different aspects of the energy community (e.g. service, prices, registration and deregistration). There is quantitative data providing technical information on the grid and power generation, as well as on prices. Furthermore, there is descriptive qualitative information that informs consumers on, among other things, the grid and basic supply.

1.4 OBJECTIVES, MOTIVATION AND PROCESS FOR ESTABLISHMENT

In order to become independent of the neighbouring larger town Sonthofen, the municipality of Bad Hindelang sought to build its own power station. In order to realise this goal, the cooperative Elektrizitätswerk Hindelang eGmbH was founded on 1 May 1923. In 1926, the Auele hydropower station generated the first electricity for Bad Hindelang. The power grid in the neighbouring town served as a motivation and inspiration for the inhabitants of the town at the time to produce their own electricity. By 1933, all parts of the municipality were connected to the power grid.

From the beginning, members had to guarantee their cooperative using liability capital in addition to their share. The share was at 500 Deutsche Mark between 1929 and 1963, when it was increased to 1,000 Deutsche Mark. The extended liability was only abolished in the anniversary year 1998.

1.5 ACTIVITIES AND TECHNOLOGIES

The main activities of Elektrizitätswerk Hindelang eG in the electricity system are as follows:

Generation:
• The energy technologies are hydro and solar
• 298 photovoltaic and 13 hydropower prosumers are located in the grid area
• Auele and Gernbach hydroelectric power stations
  o Total power: ca. 1,200 kW
  o Annual yield: ca. 4.3 million kWh
• Participation plant: OKG hydropower plant
  o Shareholders in consortium with other cooperatives
  o Power: 671 kW
  o Annual yield: ca. 3.2 million kWh
• Hydropower plants produce ca. 8.000 MWh per year
• Photovoltaic systems: PV system Plant 3 Vorderhindelang.
  o Launch: June 2010
  o PV total output: 126,45 kWp
  o Annual yield (last 5 years): 102.678 kWh
• Peak load aggregate 1,250 kVA
  o Power: 1.010 kW

Distribution:
• 3,800 clients connected
• 104.06 km of power cable
• 26.93 km of power head line

Services:

Figure 1-1: Hydropower plant Auele
Source: https://www.ewhindelang.de/auele.html
• Four charging stations for electric cars
• Energy consulting on energy efficiency and customer services
  o The energy community provides their customers with comprehensive advice on all energy-related topics, e.g. electricity connection, gas connection, charging infrastructure, PV systems, hydropower plants and local heating networks. In most cases, they seek to sell energy solutions or products or strengthen their existing customer relationships. Therefore, the consultations are mostly free of charge on the assumption there will be follow-up business and sometimes because the expertise is not so well founded that the community could charge a fee for it.

1.6 OVERVIEW OF THE ACTORS INVOLVED

A total of 48 engaged citizens of Bad Hindelang from all societal groups founded the cooperative in 1923. One of those members was the mayor. The support from the mayor and subsequently the municipality was important to realise the commissioning of the first hydropower plant in the village. Together with the other dedicated founding members of the cooperative, the village managed to commence local energy production within three years. The cooperative used a company structure that local land owners and craftsmen were used to.

1.7 ORGANISATIONAL STRUCTURE AND DECISION-MAKING MODEL

According to German Law, the energy community is a registered cooperative (eingetragene Genossenschaft, short form: eG). This means that the organisation is solely and exclusively obliged to promote the interests of its members. The members are mainly citizens but also local small- and medium-sized enterprises (SMEs) such as craftsmen or local hotels, as well as the municipality. The energy community operates as an electricity company with full-time employees and manages the powerplants and the grid themselves. While the municipality owns more shares, all members regardless of the number of shares they hold have one vote only. Currently there are 319 members of the cooperative, most of them private individuals. Cooperative members are admitted by the Board of Directors, but no new members are currently being admitted. The basic requirements are residence in the municipality, the purchase of electricity from the cooperative, and loyalty to the cooperative.

The General Assembly appoints the Supervisory Board and decides on the annual financial statements and on far-reaching/large-scale investments. The Supervisory Board appoints the members of the Board of Directors, monitors the operations of the cooperative and audits the annual financial statements. Once a year there is a General Assembly, where the major topics are decided on. The General Assembly decides on the annual financial statements and the utilisation of profits, and also elects the Supervisory Board and the honorary Board of Directors. The General Assembly decides on important matters such as larger investments, larger borrowings or the dissolution of the cooperative or the abandonment of important business areas, as well as, of course, amendments to the articles of association, etc.

Usually, between one in every three or four members attend the General Assembly. In order to engage the members, the management wants to mobilise members as duplicators of energy transition. In the General Assembly the members vote on the Supervisory Board, which is in charge of monitoring the management and is constituted of three people. The advisory board votes for the Board of Directors, which has four members: the CEO, the chair and two other members. The CEO is the only member of the board employed by the cooperative and is elected by the advisory board simultaneously with the rest of the board of management. The other members work on a voluntary basis. The CEO is
the operative member of the Board of Directors in charge of day-to-day business. The CEO consults the board of management on important decisions. For instance, the cooperative is not allowed to take on debts of EUR 1 million or more without a decision by the board of management. Basically, two people represent the cooperative: the CEO and the chair. In everyday business, a majority of the board of management (i.e. three people) can decide almost everything.

1.8 FINANCIAL AND INVESTMENT CONSIDERATIONS IN THE ESTABLISHMENT AND MAINTENANCE OF A RURAL ENERGY COMMUNITY

Capital requirements can be covered by issuing new shares or by bank financing. To ensure the survival of the cooperative, members had to borrow money in 1927. In 1927, the total business costs of the cooperative amounted to 29,144 Deutsche Mark. The major part (17,863 Deutsche Mark) represented interest on bank loans. During times of inflation, the obligations of the cooperative were covered by electricity. As noted above, until 1998 members had to guarantee the cooperative with their shares.

The members of the cooperative currently own shares worth EUR 500 per share and have also borrowed money in the past. The municipality owns more than one share. The cooperative can be funded out of the operative business and the main profit generated is kept in the company rather than allocated to cooperative members. The financial situation of the cooperative is comfortable; the production of electricity in the hydropower plants is highly profitable given the investments made in the past. These investments relate in particular to the grid infrastructure. High prices such as are being seen in 2022 are an advantage to the company, and the business model is sustainable as long as the local companies supporting the energy community do not go bankrupt. In the past, the production of electricity has been expensive compared to the market and prices have been comparatively high. However, the local community remained loyal to the cooperative throughout such periods. The cooperative can offer low prices in 2022 (about half the average market price) because the electricity it is serving was bought two years ago, and it does not need to raise prices to the current level because it is owned by its members. The energy community also supplies electricity to the general grid and buys electricity from the general grid in advance.

The energy community is involved with other cooperatives in publicly funded projects seeking to get new activities started and share risks. For instance, the cooperative is part of the project DECIDE, which is funded by the EU’s research and innovation funding programme Horizon 2020 and focusses on a holistic concept for the energy supply of the future. The goal of the project is goal is to strategically and innovatively approach the areas of electricity, heat and mobility with the project and the partners and to completely supply the valley where the energy community is located in with renewable energies.

1.9 CHARACTERISATION UNDER EU DIRECTIVES

The energy community produces exclusively renewable energy, in particular hydro energy. The energy community is controlled by members that are located in the proximity of the renewable energy plants, it is autonomous and self-controlling, demonstrates open and voluntary participation, and members are natural persons, SMEs and the municipality as per Article 22 paragraph 2 of the Renewable Energy Directive 2018/2001/EU. According to Article 2 (16), the energy community is, hence, a renewable energy community.

2. IMPACT ANALYSIS

2.1 ENVIRONMENTAL BENEFITS

The emissions of the energy community amounted to around 250 t CO2e in 2019 and around 160 t in 2020. This includes emissions from the operation of power plants and the consumption of electricity for operations, business trips, etc. Scope 3 emissions from the sale of electricity to customers are not included. The hydro plant has been used for many years and other land has therefore not been needed for energy generation (e.g. grassland for photovoltaic panels). The energy community supplies the local community with locally produced green electricity, thus reducing its dependence on fossil fuels. The profits are largely reinvested in grid expansion and in new renewable energy plants of the energy community.
2.2 ECONOMIC BENEFITS

The cooperative employs 16 people in a municipality with few companies and a general focus on tourism. The energy community pays trade taxes to the municipality, which in Germany represent a significant source of tax income on the local level. In addition, the cooperative is creating profits for the community that otherwise would be created outside the community. The annual profit has been between EUR 450,000 and EUR 650,000 in recent years.

The dividend, which is distributed to the members, usually amounts to 5% of the members’ contributions, i.e. almost EUR 40,000 per year. Since the profit distribution is at such a low level, it is essentially independent of the annual surplus of the cooperative.

2.3 SOCIAL BENEFITS

The energy community pursues an active and long-term sponsorship policy. The focus is on promoting youth in the various areas of sport, education and awareness-raising on renewable energy. They also support various cultural events through long-term sponsorships in skiing, biking and the local Christmas market, as well as educating children on road traffic. In addition, the energy community regularly supports musical events such as the annual benefit concert in Bad Hindelang. They make various individual donations according to local activities and requirements. The cooperative contributes to the sense of connection in the community, which is generally strong in the town.

3. ANALYSIS OF DRIVERS AND SUCCESS FACTORS

3.1 CONTEXTUAL FACTORS ENABLING SUCCESS

Key stakeholders and partnerships

The local cooperative culture and strong community feelings have preserved the community’s loyalty to the cooperative even at times when prices were higher than the competition. The organisational structure of local SMEs helped in launching the cooperative, as they were used to create its organisational structure. The involvement of, and good connection to, SMEs is an important factor in operating the cooperative, as these small local companies can be reached easily and important messages can be conveyed to them.

The support of the cooperative by the mayor in 1923 when the cooperative was set up, as well as the continuous support of the municipality, have been important factors in operating the energy community. In the absence of such support, the cooperative would face additional barriers.

The grid in the neighbouring town of Sonthofen that was established in the early 20th century served as motivation and inspiration to produce electricity locally and create the grid in the municipality of Bad Hindelang.

An important group are the landowners in the valley, most of whom also have a cooperative organisational approach. Furthermore, the energy industry in Germany has become so complex that electricity distribution and procurement is only practicable in cooperation with other energy suppliers. To this end, the energy community works closely with other cooperatives in the region, but also with larger municipal energy suppliers. Among the members are also farmers given that the energy community operates in a rural area. Although most of the farmers are only part-time. Staff members or the Supervisory Board chairman are also part-time farmers. The concept of the cooperative is an established form of organisation, especially in agriculture and in the German banking system.

Project development is carried out by the energy community, with the involvement of expert planners and consultants, as is the entire electricity grid operation.

National legal framework

The legal framework of the German Renewable Energy Sources Act has been beneficial to the energy community as it benefits from feed-in tariffs that renewable energy power plants receive. In addition, the operation of a cooperative carrying out commercial business operations is supported by Section §1 of the German Cooperative Society Act and Section §2 of the German Commercial Law Act. Cooperatives are exempted from the registration requirements that apply to standard commercial enterprises. They are, however, obliged to register to the cooperative register.
Furthermore, the Cooperative Law has been in force since October 1889, which in consequence means that in Germany many people are familiar with the legal structure of cooperatives.

3.2 FINANCIAL AND ORGANISATIONAL FACTORS

The cooperative has been a strong people's business. Crucial in this has been the willingness of operational managers to take risks and be creative. Some unique people had ideas what they wanted to realise and managed to do so.

The connection with other energy cooperatives in the region is an advantage to the energy community as it has the resources for other activities, such as the trading of electricity. The cooperative in the biggest town in the area handles trading of electricity for the energy community.

Employees are important to the operations of the cooperative. The emergency hotline, which is a 24/7 emergency call service provided by the cooperative for any issues identified by customers (e.g. problems with the grid), is made possible because employees are committed to making it work. Four employees focus on the technical side of the cooperative and four employees focus on the business side of it. Two people are always in charge of the emergency hotline. Several employees have experience working for other energy companies. The energy industry is complex and demanding, such that it can only be organised efficiently and in compliance with the law by professionals. Consequently, “hobby” initiatives are increasingly struggling or failing under the current conditions.

The company has a flexible structure that takes into account the fact that employees have other duties in farming or other activities of rural life, which they can prioritise over working for the energy community when necessary. For example, there is an employee who does not work for 3–4 months in winter, when the workload is lower. This flexibility is needed and is an important part of the success of the energy community. To work for a Rural Energy Community requires everyone to respect the other obligations that are part of rural life.

The cooperative will have been active for 100 years in 2023. There have been serious problems in the past in terms of a lack of monetary resources, including a time when no bank would provide money to the cooperative. The energy community, however, has shown resilience and has been able to count on the solidarity and support of other cooperatives and its own members to survive. Solidarity from other cooperatives was particularly important when the energy community was struggling to obtain loans.

Citizens used to a cooperative structure as an organisation structure in other areas than energy enable the functioning of the energy community. Furthermore, it is important not only to look at the energy communities in isolation but to also consider the region they operate in. The energy industry is complex. Some aspects, such as electricity distribution and procurement, need to be carried out in cooperation with other energy suppliers. To this end, cooperation with other energy communities in the region and larger municipal energy suppliers needs to be promoted.

3.3 ROLE OF LOCAL GOVERNANCE AND LOCAL/REGIONAL LEADERS IN IMPLEMENTATION

The support of local mayors and the municipality has been there from the beginning, and this has facilitated both set-up and continuation. The mayor was one of the founding members in 1923 and the municipality owns several shares in the cooperative. However, without committed people managing the energy community it would not have been sustained until this day. Importantly, in the actual decision-making processes of the cooperative, the municipality only has one vote – just as is the case for other members.

3.4 INCLUSIVENESS/PARTICIPATION/SOCIAL ACCEPTANCE

All citizens can become members of the energy community and thus influence decision-making by voting on strategic decisions in the General Assembly. The goal is to mobilise members as duplicators of energy transition to reach national energy transition goals. Given that only one out of four members attends the General Assembly, however, it is undoubtedly the case that citizens could be more actively involved in the decision-making process.
3.5 INNOVATIVENESS

In terms of innovativeness, the cooperative manages to operate a 24/7 emergency call service with 16 employees and just a handful of people operating the service. Usually, one technical person and one business person are in charge at any one time. The energy community has been in contact with other cooperatives explaining to them how to make an emergency hotline work with few employees, as this has been found to be generally challenging.

The cooperative is organised as an energy utility organisation with grid operations and a sales department. There are not that many similar companies in Germany, in particular in rural areas. However, in the region in which it is based there are three others.

The energy community is promoting e-mobility in the rural area by providing infrastructure to charge electric vehicles in the municipality.

3.6 OTHER RELEVANT DRIVER AND SUCCESS FACTOR

3.6.1 Barriers

As mentioned earlier, getting a loan from a bank has on occasion been challenging. The cooperative, however, was able to accessing funds from befriended cooperatives. Accessing capital is currently not a major challenge. The biggest obstacle is gaining community acceptance for power plant projects, as these naturally have a direct impact on nature and the local population. In particular, the protection of species and nature is a major problem, as the energy community is located in a sensitive habitat and large parts of their action areas are under nature and landscape protection orders. Even the hydroelectric power plants from the founding period are now located in nature conservation areas and would not be approved today. The construction of power plants is generally an issue that is in conflict with nature and landscape protection which can also be a key conflict in other EU Member States. When producing more renewable energy in the EU Member States considering the European Commission’s ‘REPowerEU’ plan this needs to be taken into account. Renewable energy projects need broad societal acceptance and concerns for nature and landscape protection need to be properly addressed by the EU framework.

In addition, engaging members has been a challenge in the past. As mentioned above, the turnout at the General Assembly is usually below 30% despite these events involving a high-quality dinner and a small gift for guests. For next year, within the framework of the 100th anniversary, several events are planned to motivate and raise the awareness of members and citizens on the topic of energy.

4. TRANSFERABILITY AND RECOMMENDATIONS

4.1 TRANSFERABILITY

Transferability of internal drivers and factors (e.g. stakeholders involved, organisational model, financial aspects, etc.)

In cooperative-friendly environments, the cooperative is an operational model that is well trusted by members and co-ownership on the part of citizens and local SMEs leads to citizen loyalty toward the energy community.

The energy community is adapted to the rural lifestyle, allowing workers the flexibility to fulfil the duties of rural life. Members of the energy community are part-time farmers or only work for the cooperative on a seasonal basis. Local SMEs are also engaged in the cooperative and in close exchange with the energy community. The short distances in the rural community are a further advantage that facilitates cooperation.

Ensuring the expertise of the people driving the energy community is vitally important. Prior experience in the energy sector is essential to understand the complex contexts of the sector and to be able to manage operations.

The energy community is not dependent on subsidies. They have received subsidies in the order of EUR 100,000 for the construction of charging infrastructure, as well as subsidies within the framework of a H2020 EU project. The main source of income lies in the activities of the energy community, in particular the operation of the power plants. Operating an energy utility organisation requires professional expertise acquired in energy companies.
Transferability of external drivers and factors (e.g. local policies, contextual aspects, etc.)

The energy community has been able to organise a 24/7 emergency call service staffed by just a few people. Such a service is necessary when operating a grid. Furthermore, at the beginning accounting is a difficult part of operating an energy community. Experienced cooperatives and tax consultancies can help in this regard.

4.2 RECOMMENDATIONS

Recommendations for Rural Energy Community initiators and developers

- Get in contact with other cooperatives, ideally those that are close to you as the context differs between countries. They can help with practical tips on how to develop a Rural Energy Community. Stay in contact with other Rural Energy Communities, which can provide support both in the set-up period and in development over time.
- Invest in the community’s own production capacity and obtain a supply licence to increase financial sustainability.
- Build close relationships with the local authority.
- Take advantage of the high sense of community locally to increase the sense of ownership in the energy transition.
- Take advantage of the local environment. Use business structures that the local community, in particular SMEs (e.g. craftsmen) are familiar with.
- Engage local SMEs in the operation of the energy community to ensure expertise and entrepreneurship.
- Link citizens with SMEs so that they can use local knowledge to develop a Rural Energy Community. Technicians as well as businesspeople are needed to operate a Rural Energy Community.
- Ensure a sufficiently high level of expertise when operating an energy utility organisation. Producing energy and operating a grid is complex and is reliant on professionals. Part-time operations only work to a limited extent.
- Allow employees the flexibility to accommodate and adapt to the rural lifestyle.
- Managing an energy community is a people-centric business, and the willingness of operational managers to take risks and be creative is important. An entrepreneurial spirit is needed to operate plants over a long period, especially during the initiation period.

Recommendations for policymakers

- **Local**
  - Take advantage of the high sense of community locally to increase the sense of ownership in the energy transition.
- **Regional**
  - Promote the advantages of local energy production. Low dependence on outside energy leads to increased energy security. In this case, the cooperative is able to secure basic supply in the event of a power blackout from outside, potentially for 1–2 weeks.
- **National**
  - Support with the initial investment costs of new projects. Initial investment in new power plants comes at a very high cost, which can lead to hesitancy on the part of local actors.
  - Privileges of legal entities (e.g. cooperatives) such as exemption from registration requirements are supportive when constructing and maintaining an energy community for many decades.