Interreg Baltic Sea Region

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Co2mmunity

Establishing, managing, analysing and evaluation of feasibility of constituting of regional RENCOPs

R.EN.CO.P

Renewable ENergy COoperative Partnership

Co2mmunity

Co-producing and co-financing renewable community energy projects

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Content

Co2mmunity

1 Framework of the report

The report is a part of Group of Activities 3.1 (GoA 3.1) Involving stakeholders of the Co2mmunity project (INTERREG Baltic Sea Region programme). In the project regional **RENCOPs** - **R**enewable **EN**ergy **CO**operation **P**artnerships are planned to be established **to stimulate Community Energy (CE) projects** in the Baltic Sea Region. If feasible, the project will try to constitute the regional RENCOPs in the respective national legal framework (e.g. as registered association or cooperative).

Task leader for this exercise of constituting RENCOPs in the respective national legal framework is Green Net Finland. Operational activities were implemented in the project regions by regional RENCOP coordinator (RC), which is responsible for identifying the regional community energy (CE) stakeholders and analysing them as well as establishing and managing the regional RENCOPs. All regional RCs have been participated into the writing work of this report. The work was implemented between autumn 2017 and spring 2019. The following document gives overview of the processes of establishing, managing and evaluation of feasibility of constituting of regional RENCOPs.

If you want to learn about establishing a RENCOP, mapping and analysing of RENCOP stakeholders, you can download our other reports from the Co2mminuty project web-pages: http://co2mmunity.eu/outputs/rencop-developments .

Within Co2mmunity project all together 9 regional RENCOPs are established (responsible organisation in the parenthesis):

GERMANY	**Schleswig-Holstein (Heinrich-Böll Foundation Schleswig-Holstein e.V.)**
DENMARK	**Middelfart (Municipality of Middelfart)**
ESTONIA	**Tartu (Tartu Regional Energy Agency TREA)**
FINLAND	**Uusimaa (GNF) and South Ostrobothnia (Energy Agency of South Ostrobothnia Thermopolis Ltd. and Regional Council of South Ostrobothnia)**
LATVIA	**Riga region (Riga Planning Region)**
LITHUANIA	**(Kaunas Regional Energy Agency & Lithuanian Energy Institute)**
POLAND	**Whole country (Foundation for Sustainable Energy)**
SWEDEN	**Southeast Sweden (Energy Agency for Southeast Sweden)**

2 Renewable Energy Community – definition and criteria

European Commission defines a **Renewable Energy Community** as **SME or a not-for-profit organisation**, the shareholders or members of which **cooperate in the generation, distribution, storage or supply of energy from renewable sources**.

Community Energy/CE project needs to fulfil the following criteria:

1. At least 51% of the shareholders or members with **voting rights** of the entity running the project are **natural persons**
2. At least 51% of the **shares or participation rights** of the entity running the project are **owned by citizens who live in the region**

3. At least 51% of the **seats** in the board of directors or managing bodies of the entity running the project are **reserved to citizens who live in the region**
4. **Participation** of **local community members**, i.e. project outsiders, is **made possible**

3 Overview of Co2mmunity regional/national RENCOPs

In the project altogether 9 RENCOPs are established to stimulate Community Energy (CE) projects. The most part of the Co2mmunity RENCOPs have regional dimension – there are 7 of them. And 2 of 9 RENCOPs have country-level dimension. There are two types of RENCOPs within Co2mmunity – expert- and citizen-driven.

The Co2mmunity RENCOP regions/countries, coordinating organisations/project partners and focus areas of Renewable Energy are:

- Schleswig-Holstein (Germany), Heinrich-Böll Foundation Schleswig-Holstein e.V. and wind energy
- Middelfart (Denmark), Municipality of Middelfart and solar PV, ground source heat pumps
- Estonia, Tartu Regional Energy Agency TREA and solar PV and combination of RE into one eco-village concept
- Uusimaa (Finland), Green Net Finland and hybrid system of ground source heat pumps and solar panels
- South Ostrobothnia (Finland) and Energy Agency of South Ostrobothnia Thermopolis Ltd. & Regional Council of South Ostrobothnia and solar PV, biofuel micro-CHP
- Marupe (suburb of Riga, Latvia), Riga Planning Region, solar panels
- Kaunas region (Lithuania), Regional Energy Agency & Lithuanian Energy Institute
- Poland, Foundation for Sustainable Energy FNEZ and different technologies such as solar, bio energy, wind, geothermal, energy storage
- Southeast Sweden, Energy Agency for Southeast Sweden and grid-connected solar PV

RENCOP coordinators (RCs) are appointed to each RENCOP-partner organisation to coordinate activities of Co2mmunity RENCOPs locally. RC is responsible for establishing and managing of RENCOP, for analysing of stakeholders and activating them to develop CE projects. Associated organisations are invited to participate into RENCOPs. In chapter 5 of this report is presented overview of the main findings of the stakeholder analysis.

4 RENCOPs stakeholder analyses

In this chapter is presented updation (2nd round) of analysis on RENCOPs stakeholders. RCs are responsible for identifying the regional community energy (CE) stakeholders and analysing them. The work of creating the stakeholder mapping tool and making the stakeholder analysis was implemented during spring and autumn 2018. The objective of the following chapter is updating of overview about main findings of the stakeholder analysis. Timeline of updating period is October 2018 - March 2019. Also, is presented mid-result of situation with RENCOPs stakeholders. All RENCOP coordinators have implemented the summary analysis regarding their own region and RENCOPs.

Overall Co2mmunity RENCOP by different type of stakeholders:

Type of stakeholders:	Cumulative number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	4+120+157+2+3+23+3+2+2=316
ii) and iii) RE/CE experts, service or technology providers	29+19+6+17+17+6+15+19+3=131
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	5+4+6+4+4+2+14+5+1=45
v) other	1+3=4

In nine tables below (4.1 - 4.9) are presented compositions of all 9 regional RENCOPs.

4.1 Composition of **Uusimaa** RENCOP by different type of stakeholders:

Type of stakeholders:	Number of persons/ organizations, September 2018	Cumulative number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	2	4
ii) and iii) RE/CE experts, service or technology providers	17	29
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	4	5
v) other	0	0

4.2 Composition of **South Ostrobothnia** RENCOP by different type of stakeholders:

Type of stakeholders:	Number of persons/ organizations, September 2018	Cumulative number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	51	120
ii) and iii) RE/CE experts, service or technology providers	15	19
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	3	4
v) other		

4.3 Composition of **Middelfart** RENCOP by different type of stakeholders:

Type of stakeholders:	Number of persons/ organizations, September 2018	Cumulative number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	155	157
ii) and iii) RE/CE experts, service or technology providers	6	6
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	6	6
v) other	0	0

4.4 Composition of **Schleswig-Holstein** RENCOP by different type of stakeholders:

Type of stakeholders:	Number of persons/ organizations, September 2018	Cumulative number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	2	
ii) and iii) RE/CE experts, service or technology providers	17	
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	4	
v) other	0	

4.5 Composition of **Estonia** RENCOP by different type of stakeholders:

Type of stakeholders:	Number of persons/ organizations, September 2018	Number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	2	4
ii) and iii) RE/CE experts, service or technology providers	17	17
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	4	5
v) other	0	0

4.6 Composition of **Marupe (suburb of Riga)** RENCOP by different type of stakeholders:

Type of stakeholders:	Number of persons/ organizations, September 2018	Number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	0	23(persons)
ii) and iii) RE/CE experts, service or technology providers	4	6
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	2	2
v) other		

4.7 Composition of **Kaunas region** RENCOP by different type of stakeholders:

Type of stakeholders:	Number of persons/ organizations, September 2018	Number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	2	2
ii) and iii) RE/CE experts, service or technology providers	2	3
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	1	1
v) other	2	3

4.8 Composition of **Poland** RENCOP by different type of stakeholders:

Type of stakeholders:	Number of persons/ organizations, September 2018	Number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	5	3
ii) and iii) RE/CE experts, service or technology providers	5	15
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	1	14
v) other	5	0

4.9 Composition of **Southeast Sweden** RENCOP by different type of stakeholders:

Type of stakeholders:	Number of persons/ organizations, September 2018	Number of persons/ organizations, March 2019
i) potential end-users or CE project owners,	2	2
ii) and iii) RE/CE experts, service or technology providers	17	19
iv) local or regional public authorities with power/ability and interest to positively contribute into realization of CE projects.	4	5
v) other	0	1

5 Substantial focuses and type of communities for Community Energy projects within RENCOPs

Co2mmunity RENCOPs are selecting focuses of their regional Community Energy/CE projects based on regional potentials and interests of stakeholders. Overall types of CE projects Co2mmunity RENCOPs are dealing with:

- common purchase of geothermal heat pumps by private houses
- fusing the collective organization from district heating companies with individual geothermal heat pumps
- large scale geothermal heat pump as a small district heating system
- common purchase of solar panels
- geothermal heat and solar PV hybrid systems for housing companies of apartment buildings
- solar PV plants to housing companies of apartment buildings for utilizing of electricity in common facilities
- solar PV plants for housing associations of social living
- sharing of production of solar PV plant of housing company of apartment building to share owners
- wider range in advancing biomass, biogas, geothermal heat and solar energy in rural area
- encouraging of using of solar energy to profile itself as solar energy friendly/Co2 self-sufficient city/municipality
- street lighting system on solar PV for private house owners in a small local neighbourhood

Co2mmunity RENCOPs are dealing with two main types of Community Energy projects - Rural and Urban. Some RENCOPs are dealing with the both types. And some RENCOPs are focusing on one of them. In cases of Urban Community Energy expert-driven RENCOPs are targeting:

- Housing companies (or condominiums) of multi-family (or apartment) buildings as stakeholders of CE projects
- Associations of senior living
- Self-organised initiatives such as neighbourhood associations of city districts

In cases of Rural Community Energy there are expert- and citizen-driven RENCOPs and they are targeting groups of owners of private houses.

6 Stories of regional RENCOPs

In this chapter are presented overviews of Co2mmunity RENCOPs, which include the following content:

- Driven force/-s of RENCOP
- How RENCOP is managed?
- How exactly Co2mmunity partner and associated organisations contributed to RENCOP?
- Strategy for RENCOP composition
- How stakeholders were identified and analysed?
- Were stakeholders involved and how?
- How focuses of CE projects have been chosen?
- How evaluation of feasibility of constituting of RENCOP is made?
- What are success factors for RENCOP?

6.1 Uusimaa, Finland

In Uusimaa region of Southern Finland focus of RENCOP is widened from original solar PV electricity from existing apartment buildings to more generic approach - hybrid energy system of solar panels and ground source heat pumps for the same type of buildings. A tool for development work is comparative analysing of nowadays energy system and life-cycle technical-economical balance vs. hybrid energy system and life-cycle technical-economical balance. In this RENCOP comparative

analysis for nowadays energy system is taken 100 % bought energy with composition 80 % of heating energy and 20 % of household electricity.

A reason of widening of the original approach is Uusimaa RENCOP leaded from the accumulated during Co2mmunity project understanding of composition of energy (80 % heating vs. 20 % electricity) and refurbishment costs in community housing buildings and also deepened understanding of local specialties related to potential of renewables in the geographical and energy governing context of the Uusimaa RENCOP.

According to Finnish Minister for Housing, Energy and the Environment Mr. Tiilikainen, in Finland 88 % of electricity is air emissions free, but in heating energy is only 47 %. Decreasing of using of fossil fuels in energy generation and finding climate-economical solutions especially for managing peaks of energy demand for heating of buildings is on agenda as on national so on the regional levels in Finland.

The main target audience for the Co2mmunity RENCOP comparative analysing tool of hybrid energy system are communities formed by owners of apartments in block of flats buildings located in the Southern Finland. From this type of housing is selected for focusing in Co2mmunity RENCOP buildings with the biggest energy saving potential and at the same time meeting criteria of Statistics Finland. Additionally, meeting existing data from The Finnish Real Estate Federation's surveys, which called "*Indeksitalo*" (or *index building*). The purpose of such kind of cross-typing is to get enough approved energy use and cost statistics. In addition to mentioned above two sets of data, it is also collected data from random buildings relevant to those statistical and index buildings.

Based on collected data, Uusimaa RENCOP coordinator has developed definition of *model apartment housing building for Co2mmunity project (Co2mmunity model building)* and *information model* for this model building. The purpose of those is to define mathematical and linguistic context for a process of communication of information in the frame of Uusimaa RENCOP. The both creations will be utilized by Uusimaa expert-driven RENCOP as a starting positioning for co-development of scalable and free for citizen's models of estimating of feasibility of hybrid renewable energy systems for community housing buildings in urban areas of Uusimaa region and southern Finland wider.

Starting positioning or energy consumption logical matrix for *Co2mmunity apartment housing building* is developed for Uusimaa expert RENCOP work on comparative analysing tool. In the energy matrix are used different units to make it understandable for different types of stakeholders, also for not-technically oriented citizens and experts. Units are: nominal energy consumption or kWh/m2 for energy experts, nominal consumption in €/m2 for economic experts and citizens. Percentages, rates, coefficients for all to show relations between two energies – heating and electricity. Those are made with purpose, because it is general assumption in Finland, that district heating is cheap and ordinary citizens do not think about the matter at all or cannot imagine real situation expressed in MWh.

Example of sources for data points for Co2mmunity model building and information model are based on:

- Statistics Finland's data sets on energy consumption in households and maintenance costs of housing companies https://www.stat.fi/til/index.html

- Surveys “Indeksitalo” of The Finnish Real Estate Federation (FREF - the central association of property owners and landlords in Finland, over 27,000 member properties, has 24 member associations) https://www.kiinteistoliitto.fi/palvelut/tutkimus/indeksitalo/
- Survey of Adato Energia Oy, 2013
- Kiinteistösähkön kulutus kerrostalossa (Lähde: Virta Juha ja Pylsy Petri. 2012. Taloyhtiön energiakirja. Helsinki. Kiinteistöalan Kustannus Oy)
- Measuring data from Tampere http://eu-gugle.eu/fi/large-energy-savings-in-eu-gugle-pilot-city-tampere/, https://www.sulpu.fi/documents/184029/4939706/Pertti%20Vesterinen%2C%202018%2C%20HS.pdf

Here is overall energy consumption logical matrix in Co2mmunty model housing building – block of flats, more than 700 m2, construction year between 1970’s and 2003, map coordinates approx. 60 ° N 25 ° E. Estimated status quo in the beginning of 2019:

Energy balance HE+EL	Nominal coefficient	%	kWh/m2	100% €/m2/year	€, HE and EL respectively
Heating energy HE	0,08	80	0,1	13	10,4
Electricity EL	0,0016	20	0,008	2,2	0,44
Relation HE/ EL	50	4	12,5	6	24

The main objective of Uusimaa expert RENCOP is to create till the end of the Co2mmunity project dynamic energy data analysing tool for on-site property renewable energy generation (solar and ground source heat pumps hybrid systems) for citizens, housing and maintenance companies.

Dynamic energy data analysing is trustful tool for Energy performance contracting (EPC), which is a mechanism for organising the energy efficiency financing.

https://ec.europa.eu/energy/en/content/energy-performance-contracting .

6.2 South Ostrobothnia, Finland

Increasing the share of renewable energy as well as developing decentralized energy production have been set as main objectives of the Regional Strategy of South Ostrobothnia 2018 – 2020. These targets are supported also by the Energy and Climate Strategy of South Ostrobothnia 2014 – 2020, where renewable energy and decentralized energy production are highlighted with a special attention given to innovation solutions on community energy. These strategic objectives have set a favourable base for establishing RENCOP activities in South Ostrobothnia.

Among the strategic objectives, the already existing expertise on renewable energy and sustainability in the region has helped to create an expert driven RENCOP. Especially knowledge and expertise in biomass, geothermal and solar energy as well as biogas are examples of the focus areas of different R&D organisations and companies that actively work for the shift towards energy system based on

renewable energy in South Ostrobothnia. The large amount of active local communities, such as village associations around the region form an attractive environment for developing CE projects together with the experts.

The objectives of the expert driven RENCOP in South Ostrobothnia are to increase the knowledge and discussion on community energy projects among the RENCOP members, and this way increase their capability to enhance and foster these projects among their own work. The RENCOP will go for this target by sharing knowledge and experiences on technologies, legislative issues and funding opportunities related to community energy as well as presenting actual community projects and their success factors. In addition, it is important to receive information and experiences from the grass root level for example for the national community energy handbooks and policy recommendations developed by the Co2mmunity project.

Among the meetings of expert-driven RENCOP, the objective is to organize several open-RENCOPs for citizens in the region in order to distribute knowledge on community energy and to help forward some individual community energy projects. In rural areas the most important stakeholder groups are village communities and in urban areas the focus is on housing companies.

The responsibility for the management of the South Ostrobothnia RENCOPs is divided between regional partner organisations Thermopolis Ltd. - Energy Agency of South Ostrobothnia and Regional Council of South Ostrobothnia. Partner organisations have planned together the RENCOP work in the area, organised RENCOP meetings and given presentations at the RENCOP events as well as chaired the meetings. Partner organisation have provided expertise considering renewable energy, common purchases of solar energy and CE to RENCOP work. Identifying the stakeholders has been crucial to further the CE projects and RENCOPs for the citizens.

The stakeholders have been identified by the partner organizations with the assistance of associated organisations and other stakeholders and with their knowledge of local needs. The strategy is to have a good composition of local experts with interest in furthering renewable CE in the area. Participating in different kinds of events in the region (village events, local fairs and other professional events) and informing citizens and experts about Co2mmunity's aims have also helped to identify the local stakeholders. Often different actors of the region have similar goals and share their knowledge of possible RE CE projects. The analysis of the experts' influences and opinions on the project have been done with the strategic stakeholder mapping tool.

Associated organisations of the area (6) have participated in the RENCOP work either by participating on an expert-driven RENCOP or by presenting on a particular renewable energy form at an open-RENCOP organised for the citizens of the area.

Several stakeholders have been involved in the community energy processes organised by the project. For instance, sunny-Alavus project organised in 2018 provided the citizens of Alavus municipality a chance to get information on solar energy and to participate in a common purchase of solar panels. In this process the development office of the municipality of Alavus was involved. Similar process took place in the beginning of 2019 in the municipality of Ilmajoki, where a solar energy evening was organised for the citizens and entrepreneurs together with the municipality.

Cooperation had a crucial role also in the case of organising a resource-efficiency evening for villages in the autumn of 2018 in Lappajärvi, where the local LEADER group (Local Action Group, LAG) Aisapari with its “To the villages” project was the co-organiser of the event.

When choosing the focuses of CE projects, Co2mmunity partners in South Ostrobothnia have used street working as a tactic for following leads on possible CE projects. There has been existing knowledge within the partner organisations on possible renewable energy needs in the area and these leads have been followed. Sometimes the starting point has been a conversation with some stakeholders in the area, who have similar goals (activating citizens, supporting renewable energy).

Co2mmunity partners have been spreading the news on community energy and the CE projects the project could support at local events (fairs, village events) and media. Also, local papers and news have been followed carefully (could there be a lead on RE CE needs for certain groups of people). The tactic has proven to be successful, as the next open-RENCOP events for village associations are under preparation together with the LEADER groups (LAGs) of the region.

6.3 Middelfart, Denmark

In Middelfart Municipality there are different types of driving forces in the different RENCOPs. There are the citizen driven RENCOPs, like Føns local heating plant, Denmark's smallest district heating plant or “Green City - Brenderup” a large solar park. Both RENCOPS are driven by a group of citizens who wanted make a difference and be an active part of the green transition. Other RENCOPs like Termonet or Common Purchase of heat pumps are initially started by the municipality in order to support the citizens, conducted also with associated organisations.

When the RENCOP is initiated by citizens Middelfart municipality is managing the RENCOP by supporting the citizens and by facilitating, in order to keep the RENCOP going, but the actual decisions are made by the citizens. The same applies in some to some degree to RENCOPS initiated by companies. When the RENCOP is initiated by Middelfart municipality, the municipality plays a bigger part in managing the RENCOP. In this type of RENCOP the municipality not only facilitates and supports, but plays an active role in planning events and meetings. The RENCOP common purchase of heat pumps is like a combination of the two types. To begin with it is driven by the municipality, where the goal is to motivate citizens to change from oil furnaces to heat pumps. When citizens who are interested are found, the RENCOP changes and the citizens become the driving force but the municipality is still supporting and facilitating.

How exactly Co2mmunity partner contributed to RENCOP?
The Co2mmunity partners and associated organisations play an important role in the different RENCOPs. The associated organisations support the work by joining RENCOPs like common purchase of heat pumps. The help spreading informations so more can join and they put in working hours to improve the RENCOP and giving the citizens more opportunities to be a part of the RENCOP.

Middelfart Municipalities strategy for RENCOP composition often is exploring possibilities. The encouragement to work with citizens is due to political interest in sustainable development with citizens. The Council has a tradition in seeking results more than strategies.

The stakeholders were identified in different ways, some were identified as stakeholders, because they are “usual suspects”, well established players in energy transition. Some were found by public announcements and some come themselves. All the stakeholders were analysed with a stakeholder mapping tool developed for the Co2mmunity project. The stakeholders were involved by methods mentioned, such as personal relations, professional possibilities and more random approach.
The focuses of CE projects have been chosen different ways. Some were fixed in advance and others were developed in the process. The CE project “Common purchase of heat pumps” for example was fixed in advance and some CE project evolving of ideas more spontaneous like “Sol over Brenderup”. The feasibility is analysed in the process, with a “learning by doing” practice and not so much desktop analysis. Often a very quantitative ongoing process is used, and an oral evaluation of the CE projects is applied.

The main goal of a RENCOP is to start community energy projects, which means the main success factor for a RENCOP is actually ending up with energy production from renewable sources owned by communities, but there are secondary goals and success factors. One of these secondary success factors is to raise awareness and thereby planting the idea of doing a difference. This secondary success factor could lead to future renewable energy production owned by communities and make a difference in the long run.

6.4 Schleswig-Holstein, Germany

The interplay between decision making on various political levels in Germany – the Federal, the Regional and the Local, as well as the role of various actors poses a fundamental challenge to foster the “Energiewende” (the energy transition). This also has impact in the prerequisites and needs when setting up a RENCOP in the county of Rendsburg-Eckernförde in Schleswig Holstein.

The standstill of the German energy transition, despite extensive reduction goals, has been characterised by entrenched interest-based structures which resist change. Although there are new legal tendencies in the aftermath of the decision to phase out the coal power plants by 2038, and as the Germany's environment ministry wants to enshrine a target of “at least 95 percent” greenhouse gas reduction by 2050, it is still unclear how to transfer already binding EU climate targets into German legislation. Simultaneously, many of the incentives which are set on the Federal level, such as the new EEG (EEG 2014) for reimbursement of electricity from renewables (http://www.gesetze-im-internet.de/eeg_2014/index.html), and the absence of a Carbon tax, are hampering the further progress of the re-building of the Energy System.

Although renewables (mainly sun and wind) now account for 40 percent of the electricity mix, current stagnation is impeded by the lack of Federal regulatory incentives. Additionally, the total emissions are not really declining, hence, other measures are additionally needed. These measures are closely related to how the Energiewende is perceived, by decision makers and public; if it is only based on technical measures or also relating to other changes in society.

The paradox, on one hand, the overall high costs of the Energy Transition has miscredited the endeavour, with the result, that those facility operators who previously received a high feed-in

compensation are now seen as notoriously having earned money on overall societal expenses. And on the other hand, without a carbon-tax, the price for citizens to engage in CE projects, is too high in comparison with fossil based resources (heat). With the result, that incentives by the regional government to stimulate the initiation of CE through so called “Bürgerenergiefonds”, are funds not being utilised. To solve that dilemma, the regional government of Schleswig-Holstein has tried to lobby for a CO2-tax on Federal level. However, until now without concrete result.

The German Advisory Council on Global Change (WBGU) sees that an overall success towards an Energy Transition can only be secured with a broad consensus in society and the commitment of *a Transformation to sustainability* (see the Image below from the WGBU, 2016).

Image: Re-balancing the state, markets and civil society in the course of the transformation to sustainability. Source: WBGU

Our self-understanding in initiating and facilitating the RENCOP in our Region is entailed in our aim to strengthen civil society, by providing information but also enabling citizens to participate in the Energiewende. We do not aim to only focus on CE projects in a narrower sense (as described in chapter 2), which would reduce the scope to only relate to energy production through renewable sources. We see the potential of the RENCOP in the Region of Rendsburg-Eckernförde of in a wider setting. Hence our aim as initiators of a RENCOP, is to contribute to *the transformative literacy* in the county of Rendsburg-Eckernförde, by trying to get a broader consensus for the need of an energy transition, and the enablement of citizens to become active to participate in this transition, which we hope will be manifested through various citizen’s initiated projects. In building our RENCOP we are looking to develop new alliances with multipliers within civil society in the Region, and we are also developing a learning programme for citizens to initiate and sustain projects.

The county of Rendsburg-Eckernförde has emphasized the political commitment to the Energy Transition, and also published a climate concept for the Region “Klimaschutzkonzept Kreis Rendsburg-Eckernförde”
(https://www.kreis-rendsburg-eckernfoerde.de/fileadmin/download_internet/Klimaschutz/Klimaschutzkonzept-Rd-Eck-2012.pdf).
For the mainly rural region, a great potential for renewable production of energy (electricity and heat) through wind, solar and biomass has been identified. However, this potential can only be scoopt out in case there is a wider public acceptance for the energy transition, including citizens involvement. One of the main conclusions of the climate concept of the county of Rendsburg-Eckernförde, is the call for establishing local structures in which citizens can participate to shape the transition. This is the context in which we are initiating, in cooperation with the climate manager, our RENCOP. We have a double-tracked strategy, on one hand are we hosting seminars targeting citizens

and honorary appointed politicians in the Region to inform about, possibilities and potentials in initiating CE projects. We have started with “Wind seminars”, which are to be followed by presenting other sources of renewable production of energy (electricity and heat). These seminars are organised to show that the transformation is technically feasible and, although constrained by the current Federal legislation, viable. Our second aim, and main challenge, is to build a broader societal acceptance for the energy transition. Therefore, in the build-up of our RENCOP, our aim is to forge new relationships to mobilise new civil society actors to become engaged in the energy transition. An interesting emergence has been the “Fridays for future” initiative, which like in many other places, is mobilising young people to engage in the climate debate.

6.5 Estonia

In Estonia, the development of the community energy is still at a relatively early stage comparing to such countries as Denmark or Germany. The first attempt to activate energy cooperatives took place in 2015 – 2016 when Energy Cooperatives Mentor Programme was implemented by Estonian Development Fund. 10 CE initiatives were selected for developing and mentoring. As one of result of the programme, the limitations and obstacles set by law and the absence of relevant legislation for energy cooperatives was indicated. During the last 2 years there has been some progress in strategies and legislation in national level.

Main general document which sets the objectives for energy sector in Estonia is National Development Plan of the Energy Sector until 2030 (NDPES 2030). The document presents a pooled inventory of future actions in the electricity, heating and fuel sectors, as well as actions related to energy use in the transport and housing sectors. According to NDPES 2030 increasing the share of renewable energy is one of the main objectives. The development of decentralized energy production is set as one of priorities also and the document indicates the need for developing legislation for CE projects (energy cooperatives) to promote production of renewable energy. Increasing the share of renewable energy and decentralization of energy generation are also described as objectives in the development plans strategies of several other neighbouring areas (for example National Spatial Plan "Estonia 2030+", Climate Change Adaptation Strategy 2030 etc.).
The provisions facilitating the implementation of the CE projects are also included in the Electricity Market Act, which came into force from the beginning of 2019.

An expert-driven RENCOP was established by TREA. In earlier phase of the Co2mmunity project there was a vision that both types of RENCOPs (expert-driven and community driven) are possible but as our potential communities are not very active themselves and the number of potential CE initiatives are relatively low, the expert-driven approach is the best solution at the moment. But both RENCOPs are possible in the future.

The management and development of expert-driven RENCOP is the responsibility of project partner TREA. The RENCOP coordinator and the core experts having a strong technical competence in the fields of solar power, biofuels and heating, also energy efficiency in buildings. Agency have strong expertise of engagement of interest groups. All mentioned experts are inhouse and provided to communities from TREA. Additional experts from other fields (like specific technologies – wind, solar

etc., financial experts, procurement experts etc.) are or will be involved if needed. It depends on the specific needs of the specific CE initiative.

Due to the current situation and the overall relatively low level of awareness and preparedness in the field of energy cooperatives in Estonia the main activities and objectives of Estonian RENCOP are:

1. Increasing the awareness of citizens, local municipalities, communities about the possibilities of community energy cooperatives. RENCOP shares the information about the benefits of cooperative production and consumption of energy, different technologies, opportunities for communities.

2. Spotting the stakeholders and interested communities to involve in to the RENCOP activities in future and the community energy issue in general.

3. Working with specific CE initiatives.

In order to involve more communities and interested parties TREA identified the more potential groups and entities for community energy projects first. In urban areas, apartment associations have the greatest potential to become an energy cooperative. The situation is also facilitated by the fact that many apartment associations have already renovated or are renovating their houses to be more energy-efficient with the support of the EU Structural Funds, which enables to install solar panels, replace or reconstruct the heating system and ventilation etc.

TREA as the RENCOP manager also contacted all 10 CE initiatives who were selected during the Energy Cooperation Mentor Programme in order to find out their current status and to inform about the Co2mmunity project and the RENCOP activities and possibilities for community energy projects.

The third group TREA have focused on are Estonian eco communities who are more prepared and informed about the RE, searching for alternative financing models and acting together as a community. One of Estonian eco-villages was also involved in Mentor Programme 2015 – 2016. TREA RENCOP experts have visited the selected eco-communities and shared the information and knowledge in the general meeting of Estonian eco-communities in January 2019.

With the support of a Co2mmunity Associated organisation 10 Estonian Private Forest Centre, TREA has also interacted with forest associations that unite the owners of renewable resources and therefore might be initiator of CE projects. RENCOP experts have participated in the Forest Associations meeting (organized by Ministry of Economics and Communication) in order to introduce community energy in general, RENCOP activities and Co2mmunity project.

TREA has identified the local municipalities as important stakeholders and therefore paid attention to disseminating information and raising awareness at this level. RENCOP experts visited and contacted with some municipalities, more local municipalities will be contacted in the nearest future.

The first public kick-off RENCOP seminar was organised in 2018. Participants from potential CE initiatives, apartment associations, NGO-s, local stakeholders and local municipality were informed

about the CE and collective actions more general in different sectors, CE activities in Estonia so far, about RENCOP idea, Co2mmunity project, financing possibilities. Representatives of relevant stakeholder organisations (Union of Apartment associations, Association of Private Forest Owners etc.) shared practical experiences in the field of cooperation as such. Additionally, the workshop and discussion were carried out in order to determine main obstacles and barriers and recommendations from local stakeholders.

RENCOP experts and the coordinator have disseminated information on RENCOP and Co2mmunity project activities at various seminars (a seminar on solar energy opportunities and technology, an annual meeting of eco-communities, an apartment association seminar). Individual meetings with local authorities, eco-communities have been organized. An introductory article about the community energy and Co2mmunity project were published in the Estonian Biomass Association annual 2018/2019 magazine „Combustible and non-combustible energy resources 2018/2019".
In the nearest future, it is agreed to visit the Ministry of Economics and Communication in order to discuss the CE topic and its future in Estonia more generally and to provide more detailed information on RENCOP activities.

By March 2019, two CE initiatives have joined Estonian RENCOP actively, additionally one eco-community (MTÜ Lilleoru) joined in February 2019.

The need for RENCOP-like entities has clearly emerged from the meetings. Potential communities that would have an interest in producing their own energy do not have enough knowledge of the possibilities of creating and managing energy cooperatives, and the complexity of legal space and lack of awareness of funding opportunities raises hesitations and fears. The free support and expertise of the RENCOP experts in such a situation is very important.

6.6 Marupe (suburb of Riga), Latvia

Historically Latvia has high renewable energy (RES) share in total energy mix. Latvia hydropower accounts for 53% of the total capacity and supplied 33% of Latvia's electricity in 2015 (IEA, 2017). The main energy sources for the Latvia is biofuels (38%). Biomass has replaced fossil fuels in electricity and heat generation, even the share of oil has remained at 34 % due to increasing transport volumes. The transport (30%) and household (29%) sector consumed the largest share of the final energy in Latvia, followed by industry (21%), and other sectors that together account for 20% of the final energy consumption. The key objective foreseen in the new National Energy and Climate Plan (NECP) is to ensure cost-effective and natural resource-saving transition to a low-carbon and regionally and globally competitive economy by developing a balanced, efficient, market-based energy policy that ensures Latvia's economy and society's well-being. In the draft NECP key energy and climate policy targets are:

RES share 45% in total final energy consumption (7 – 14% RES share in transport)

Energy efficiency targets to keep primary energy consumption 49,95 TWh and to achieve cumulative energy savings 19,87 TWh (new annual savings ≥ 0,8%)

Even share of renewable energy remains high in total energy mix, in the last years support for the RES is reduced and market is stagnating. In the context of new (NECP) there is lack of understanding

how new energy and climate targets could be reached. Several studies indicated (BENTE) that most cost-effective measures to reduce GHG emissions are to decrease oil consumption in energy service sector (most importantly in transport, buildings, and industrial plants that are not included in EU ETS) and to reduce fossil fuel use in smaller district heating plants that are not included in EU ETS. GHG reductions should be led by the electricity and district heating sectors, followed by transport, buildings and other sectors. Energy efficiency measures, wind power, biomass, heat pumps, and solar power and heating are estimated to be the most cost-effective ways to increase the renewable energy share.

RENCOP model could play an important role for energy transition and help to reach new energy and climate targets. At the moment CE concept as such is not recognized and Latvia lacks good examples, clear policy and financial instruments for developing new CE projects. In the framework of Co2mmunity project several objects have been set in order to facilitate development of new CE projects. The main activities and objectives for RENCOP in Marupe municipality are:

- Rising awareness among citizens and to promote RES technologies;
- Demonstrate best examples from other partner countries;
- Support new CE projects (visioning, planning, preparation of technical and financial plans);
- Stakeholder involvement (NGOs, local government, schools and education institutions, residents, entrepreneurs, financing institutions and government officials).

In order to raise awareness, explore needs (driving forces), attitudes among citizens towards RES and to identify possible CE projects Marpe municipality prepared and conducted a survey. Survey was conducted via internet. As follow-up collected data were used and discussed during seminar with citizens and local NGOs from Marupe municipality. In total 42 citizens have resonated which, made it possible to collet first reactions and ideas from local citizens. The survey (September 2018) showed in general positive attitude of citizens towards energy efficacy projects and renewable energy sources. Overall respondents were more informed about different efficient lighting options, however were lacking information about renewables technologies and other energy efficiency measures.

As follow-up activity seminar with local NGOs and citizens has been organized in order to identify possible CE projects. During the seminars first reactions from survey have been discussed as well RENCOP model presented and discussed. From the seminars discussions several possible citizen driven CE projects have been indicated – solar for apartment buildings, solar for street lighting for local NGO and solar monitoring system for existing projects for continues motivation and education of local citizens. As main focus of RENCOP in Marupe are to promote solar energy technologies which could be combined with other energy efficiency or RES technologies. The main target groups are house owner associations, single family house owners and local NGO'.

At the moment cooperative organizations are made by multi apartment flat owners. When taking a decision of a community of apartment owners, each apartment owner shall have, as many votes as there are apartments in his or her ownership. If a residential property belongs to two or more joint owners, they shall authorise one person to represent all apartment owners. For construction or relocation of the water supply, sewerage and public electronic communications networks, it shall be

necessary that apartment owners who vote "for" represent more than a half of all apartment properties.

First meetings with one of apartment building in Marupe has been already organize in order to start development of first RECOP. Support and expert knowledge will be provided within Co2mmunity project activities and potential financing sources are being investigated. State-owned development finance institution ALTUM offers state aid for energy efficiency in apartment buildings with could be potentially used for this project. Financial support is offered in two ways - in form of grant or in ALTUM loan with a repayment term of up to 20 years for the implementation of an efficiency improvement project.

One of the main barriers for RECOPs is relatively low energy costs and slow decision-making process in buildings. Very often building owners tend to focus on measures with short to medium payback periods. As well concept as such is not known and there is lack of good examples with could motive citizens to be more involved. During Co2mmunity activities existing RECOP will be supported and the emergence of a new CE projects will be encouraged.

6.7 Kaunas region, Lithuania

The structural reforms and strategic projects of the energy sector, carried out in Lithuania as a result of implementing the National Energy Independence Strategy approved by Resolution No. XI-2133 of the Seimas of the Republic of Lithuania dated 26 June 2012, have diversified energy supply routes and sources, reduced energy resources prices for consumers, and opened new development opportunities for the country. The Lithuanian energy sector has been substantially restructured in order to reduce and eventually eliminate the energy dependence on the Russian Federation that has resulted in unreasonably high resource prices and the use of energy as a political tool.

With regard to these results of the implementation of the National Energy Independence Strategy and the new EU energy and climate change targets that Lithuania has to achieve by 2030 by implementing the Paris Agreement of 12 December 2015 between the EU and the United Nations (UN) (hereinafter referred to as the Paris Agreement), and the new trends in the energy market and also targets of the EU Energy Union and the Baltic Energy Market Interconnection Plan, this updated Strategy has been prepared, which includes state's key energy policy targets, directions and their implementing tasks up to 2030 and a vision up to 2050. The strategic goal of the state in the energy field is synchronisation of the Lithuanian energy system with the energy system of continental Europe. This goal has to be reached by 2025.

In the future, the continuity of the pursued policy and directions will be maintained, the investment attractiveness of Lithuania will be improved, new zero GHG and zero pollutant technologies resilient to climate change will be implemented, innovations in the energy sector will be encouraged, and energy progress will be ensured.

In 2016, RES accounted for about 25.5% of final energy consumption in Lithuania. Accordingly, consumption of electricity from RES was about 17%, in total heat consumption – about 46%, and in the transport sector – about 4%. A significant share of resources in energy production comes from wind and biofuels (solid and liquid).

The main objective of the Strategy in the field of RES is to continue to increase the share of RES in domestic energy production and total final energy consumption, thus reducing the dependence on fossil fuel imports and increasing local electricity generating capacities.

Although RES technologies are constantly improving and the cost of equipment decreases, RES-generated energy produced in newly-installed plants is currently not yet able to compete in the market. Therefore, the production of RES energy is and will continue to be supported until the economically and technically acceptable RES development limit is reached, focusing on the proactive participation of RES energy producers under market conditions, or until the production of RES energy reaches market value.

Lithuanian Government and Ministry of Energy are hardly working by implementation RES directive in Lithuanian law, including description of Community Energy. According to the directive Member States shall provide an enabling framework to promote and facilitate the development of renewable energy communities. That framework shall ensure, inter alia, that:

- Unjustified regulatory and administrative barriers to renewable energy communities are removed;
- Renewable energy communities that supply energy or provide aggregation or other commercial energy services are subject to the provisions relevant for such activities; 21.12.2018 L 328/121 Official Journal of the European Union EN;
- The relevant distribution system operator cooperates with renewable energy communities to facilitate energy transfers within renewable energy communities;
- Renewable energy communities are subject to fair, proportionate and transparent procedures, including registration and licensing procedures, and cost-reflective network charges, as well as relevant charges, levies and taxes, ensuring that they contribute, in an adequate, fair and balanced way, to the overall cost sharing of the system in line with a transparent cost-benefit analysis of distributed energy sources developed by the national competent authorities;
- Renewable energy communities are not subject to discriminatory treatment with regard to their activities, rights and obligations as final customers, producers, suppliers, distribution system operators, or as other market participants;
- The participation in the renewable energy communities is accessible to all consumers, including those in low-income or vulnerable households;
- Tools to facilitate access to finance and information are available;
- Regulatory and capacity-building support is provided to public authorities in enabling and setting up renewable energy communities, and in helping authorities to participate directly;

- Rules to secure the equal and non-discriminatory treatment of consumers that participate in the renewable energy community are in place.

Activities within KREA and Co2mmunity RENCOP

KREA has organized a broad information campaign to publicize the Co2mmunity project and its goals. Special attention was paid to rural communities or Local Action Groups in the regions. A project presentation event took place in Kaunas, where representatives from more than 20 communities were gathered, representatives of home associations, representatives of municipalities (elderships), science and technology specialists, suppliers and installers of renewable energy equipment. We were working with almost all communities, but lack of community initiatives and specific knowledge were the main barrier to creating an energy community. KREA is actively working with more than 10 communities, but lack of intentness and initiative in them does not create favourable conditions for the creation of the energy community.

The main driving force behind the creation of Lithuanian RENCOP is Tauragė District Pagramantis eldership, which is an active community and quickly ignited the idea of installing a solar power plant. Primary consultations and preliminary calculations of KREA specialists helped to identify needs and main technical parameters.

With strong technical and organizational expertise, KREA has acted as RENCOP Coordinator, and has been a link between the community and third parties: Municipalities, Scientific Advisors, Practice Experts, Technology Providers and Installers. The RENCOP coordinator acted as well as searcher for funding programs or community energy projects.

KREA has the opportunity to attract more renewable energy experts, so community will be provided consultancies about wind, biogas, geothermal or other areas of renewable energy.

Currently, in the case of the Pagramantis Community, the members of RENCOP are persons/ organizations directly interested in the success of the project and implementation. The community's idea to attract well-known local entrepreneurs who have lived in the Tauragė district. Their role in the Community Energy project is funding, which has big support and approval.

As showed the project presentation events, Lithuanian communities are not familiar with the concept of the Community Energy, and insufficient management knowledge does not encourage communities to take energy business projects.

During the meetings and presentations of opportunities provided by Co2mmunity project, the interest of the residents of multi-apartment buildings in solar energy and the production of hot water using solar collectors was noticed. We are currently working with several communities, explaining the benefits of solar power plants as such and to the consumers themselves. It seems that residents seeing sense and benefit to install solar power plants together with the renovation of the house. As usual, some of the building renovation funds come from EU programs. RENCOP‘s technical-expert and informational support for creating potential Community Energy projects is a good, but insufficient incentive for communities. Community representatives are increasingly expressing the view that projects such as Co2mmunity should also contribute financially (part of the cost of

technological equipment or similar). This would be a real incentive, not a paper - we hear in almost every meeting with communities.

Representatives of KREA participate in the discussions in the Ministry of Energy of the Republic of Lithuania and in the broader context concerning definition of Community Energy. This is related to the implementation of the provisions of the Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources. It is particularly important to define and regulate the concept of an electricity-producing user, because of the growth of small electricity producers from renewable sources appears different conditions for consumption, storage, distribution and sale of produced energy. Clear and understandable requirements, favourable operating conditions, could be a real incentive to develop renewable energy projects in communities.

6.8 Poland

Energy transformation trends have also reached Poland. Apart from large-scale projects, more and more expectations are seen in the development of projects on a local scale - carried out by citizens. Exactly these projects which use local potential and engage communities are becoming more meaningful and as a result they can be a remedy for rising energy demand, price growth or necessity to increase the share of renewable energy in the country electricity mix. These assumptions are confirmed in strategies and the energy sector development plan presented by the Government. These aims are included in „Energy Policy of Poland until 2040" and particularly in the assumptions formulated by the Ministry of Enterprise and Technology in the Programme *Energia Plus*, where conclusion from Co2mmunity and R.EN.CO.P. activities may find their practical application.

Apart from the development of prosumer installations, a main attention was focused on a development of energy clusters. For the first time, the idea of the energy clusters appeared in the amendment to the Law on Renewable Energy in 2016, respectively it defines cooperation between natural persons, legal persons, universities and local government units for generating and balancing the demand, distribution or trade in electricity. Their aim is to maximize the local potential in the area of 5 municipalities or one poviat. The first effect was creation of more than a hundred cluster initiatives scattered all over Poland based on various technologies of renewable energy. The additional driving force for development of these projects was a competition led by the Ministry of Energy. Its goal was to select the best examples of pilot energy clusters. Selected projects received certificates from the Ministry of Energy that entitle members of clusters to apply for a dedicated grant. After two editions of the competition (November 2018), sixty-six pilot energy clusters were selected.

In the formula of energy clusters there is a potential for a development of community energy projects, due to the fact that individuals and housing communities could be a part of such projects. Growing potential of individual and distributed energy projects requires cooperation and exchange of knowledge and experience between stakeholders and members of energy clusters. The lack of institutional support and knowledge in the field of good project practices seems to be perceptible. In order to meet this challenge, a decision to create an expert, open working group – R.EN.CO.P. was taken. The results of their work would reduce barriers in the development of the community energy sector in Poland and provide practical knowledge to its participants.

The Coordinator and the moderator of R.EN.CO.P. in Poland is the Foundation for Sustainable Energy (FNEZ). The aim of working group is a close cooperation between its participants to exchange knowledge and experience and support the processes of creating a system-regulatory environment for the development of community energy projects. This means carrying out activities tailored to the expectations and needs of stakeholders. Functioning of R.EN.CO.P. is based on cooperation with interest groups in the development of community energy projects, which include: coordinators and participants of initiatives, energy clusters and energy cooperatives, experts and consultants in the field of renewable energy, local and national authorities, local communities and citizens. All activities in the working group were preceded by the identification of the stakeholders' expectations in terms of the formula and area of cooperation. For this purpose, consultations during direct meetings with authorities and representatives of local projects were undertaken. Additionally, through the questionnaire and conversations, it is being led constant identification of stakeholders, projects, motives and barriers in the functioning and expectations of cluster members.

R.EN.CO.P kick-off meeting took place in Warsaw at the beginning of September 2018. The meeting was attended by the practitioners – the coordinators and the members of energy clusters, representatives of the Lewiatan Confederation and associated organizations. The discussion was supported by rich experience and knowledge of the participants who presented their own experience. The meeting allowed to formulate basic arrangements that are the core for the further R.EN.CO.P strategy:

- it was specified that the topics of the meetings should be a response to the identified needs of the sector and participants of R.EN.CO.P., which included:
    - the functioning of the energy cluster in the energy system – cooperation with the distribution network operators, rights and obligations of the cluster coordinators (according to Energy Law),
    - social communication in local energy projects and involving of local communities,
    - legislative changes facilitating the creation and management of community energy projects,
    - sources and principles of financing of such projects,
    - project models - guidelines for stakeholders,
- experts in the above areas of competence will be invited to discuss each topic,
- conclusions from cooperation and R.EN.CO.P. meetings will be inputs for studies, tools, handbooks prepared as part of the Co2mmunity project, and consequently they will lead to visible systemic, regulatory and organizational changes in the Polish energy sector,
- studies and conclusions are signed with the partnership of R.EN.CO.P. and cooperation with the group's experts,
- **participants of the meeting made a decision on the functioning of R.EN.CO.P. The group will be organized in a transparent manner and not limiting its operation to one technology or region. The formula of expert working group is open, provides access to all stakeholders, allow to build a network of contacts, cooperation and exchange of experiences.**

The functioning of the R.EN.CO.P. working group is a response to the needs of its participants. In response to the invitation one of R.EN.CO.P. member, the Coordinator participated as a speaker in the conference dedicated to local communities and local governments. The lecture concerned the issues of public acceptance of new energy projects and the principles of proper social communication with local communities. At the same time, constant coordination of the R.EN.CO.P. working group confirms interest in the activity and new participants are joining.

6.9 Southeast Sweden

Sweden has a national goal to have 100% renewable electricity production in 2040. There are also regional goals aiming to fossil free regions and in Kronoberg County there is a goal to produce more renewable energy than consumed (Plusenergy county). This means there has to be many new renewable energy plants built over the next decades. Many of these will be large, but also small scale will be needed and play an important role to reach the goals.

In Sweden, it is a focus from authorities and interest from residents to reduce climate impact. Sweden is relatively far ahead in investing in fossil-free electricity production and heating of properties with heat pumps, bioenergy and waste heat from industry. Hydro power has a large share of electricity production, wind power is increasing and the Swedish Energy Agency has estimated that 10% of all electricity can come from solar cells 2040.

In Sweden there is a common type of living called BRF (Bostadsrättsförening). Living in a BRF you are a member of an economical association (cooperative) that owns the property together. Your share of the BRF is then your apartment. Each property typically consists of 40-100 apartments. The cooperative is run by the members and they elect a board to handle daily business. There are 1 milion BRF in Sweden where 20% of all residents live.

These BRFs often have good finances and funded funds for maintenance improvement work and other investments such as solar power.

Energy Agency for Southeast Sweden (ESS) are responsible for organizing RENCOP in Sweden for the Co2mmunity project. Due to the fact that the group of BRF is so large and the interest in solar cells is increasing so quickly, it was clear that the Swedish RENCOP can contribute most if it focus' to assist BRFs to invest in solar-PV.

In doing this several challenges have been discovered such as; inefficient support systems and electricity grid regulations that are not adapted to the conditions that apply to a BRF. The RENCOP therefore look at solutions to improve these conditions.

Sweden historically have had many cooperative organizations. Most in agriculture and retail. There are also some companies, for example Södra skogsägarna organized as cooperatives. In some areas, such as the supply of electricity and energy, swedes are more accustomed that large companies, the state or the municipalities are offering this service to the residents and thus we have relatively little experience of working together in this type of citizen project. However, between 2005-2015 there were a number of wind power cooperatives started in Sweden. Economy was initially good, but when electricity prices got lower the situation changed, and some cooperatives lost money and even had to sell its assets. The drivers for this type of cooperatives decreased and is still low, even though the conditions again start to get better.

Prices for solar-PV has decreased greatly over the last years. The government also support installations with a 30% of the investment cost support and a tax reduction for electricity sold to the grid. This has led to many solar-PV installations and also some BRFs have invested. The focus on climate in general also play a role as a driver for investing in renewable energy, and the satisfaction producing your own electricity is not to underestimate.

There are still however some barriers for a BRF and many need support to take the step to invest.

Thanks to the fact that our target group is already organized as associations (cooperatives) and primarily need help with knowledge, the best helping them is by organizing an expert driven RENCOP.

ESS have previously contact with a number of specialists in the field of renewable energy. These form the basis for forming the RENCOP.

During the work with Co2mmunity and in open meetings contact has been made with committed residents that already have invested in solar-PVs. These persons are invited to be members in the expert RENCOP. It is observed that showing good examples are the best way to stimulate others to also launch renewable energy projects.

Suppliers of PV-plants are also invited to the expert RENCOP. Caution has to be taken due to the fact that there may be unhealthy competition and that Energy agency risk losing credibility as an independent advisor. The RENCOP work is organized and led by two project managers from ESS.

The RENCOP experts contribute with their expertise and experience to inspire other citizens to build and run a jointly owned renewable energy plant. The observation is that the best way to influence others is to show good examples and bring together those who installed solar-PV with those who are considering doing so.

Success factors are good examples from other BRFs, and one or more person from each BRF that are pushing for solar within the cooperative. We also believe that connecting these groups through RENCOP open meetings is a success factor.

The RENCOP work in southeast Sweden is based on open meetings. At these meetings BRFs in a selected area/city are invited. Representatives from good examples (BRFs with solar-PV), the local grid owner, a solar-PV supplier and RENCOP experts are also invited. At the meetings there are inspiring presentations and rich possibilities to ask questions and have discussions. At the coffee break the stakeholders can network and make new contacts. At the meetings related topics such as car charge stations are discussed also.

A database of existing BRFs in southeast Sweden has been developed and used for invitations to the open meetings. The goal is to have open meetings in various places covering the majority of the population in the area. After the meetings participating BRFs will be followed and those taking an active step investing in solar-PV will be offered support by the expert RENCOP.

7. Legal entities for Community Energy projects – SMEs or not-for-profit organisations

In Co2mmunity application: "*constituting RENCOP in partner regions (if feasible, try to establish the RENCOP in the* ***respective national legal framework (e.g. as registered association or cooperative****), RENCOP is set-up latest in project period 3).”*

According to Wikipedia:
*"**A cooperative** (also known as co-operative, co-op, or coop) is "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise".*

Cooperatives may include:

- *non-profit community organizations*
- *businesses owned and managed by the people who use their services (a consumer cooperative)*
- *organizations managed by the people who work there (worker cooperatives)*
- *organizations managed by the people to whom they provide accommodation (housing cooperatives)*
- *hybrids such as worker cooperatives that are also consumer cooperatives or credit unions*
- *multi-stakeholder cooperatives such as those that bring together civil society and local actors to deliver community needs*
- *second- and third-tier cooperatives whose members are other cooperatives"*

Cooperate in the generation, distribution, storage or supply of energy from renewable sources.

8. Respective national legal framework for Energy projects

Steps to implement for regional RENCOP coordinators:

1. Implement a survey on your national legal framework related to **cooperative** and **association.**
2. Identify **existing initiatives and legal entities** working on Community Energy issues.
3. Get familiar with focuses and target groups of those existing bodies.
4. Analyse your RENCOP vs. existing bodies: focus, target groups, local champions.
5. Evaluate possibilities of collaboration between your RENCOP and existing bodies.
6. Bring the **issue of need of evaluation of constituting** of RENCOP on the next **meeting of RENCOP stakeholders.**

9. How to make decision on feasibility of constituting of RENCOP?

Steps to implement for regional RENCOP coordinators:

1. Document outcomes of survey on your national legal framework related to cooperative and association, list identified existing bodies on national and regional level.
2. Identify need for establishment of new legal entity within your target groups and stakeholders.
3. Need identification within target groups could be implemented by questionnaires.
4. Need identification within members of RENCOP could be implemented during the meeting (remember to include the issue into agenda of the meeting).
5. Decision on feasibility of constituting should be done based on identified needs from target groups and members of RENCOP members.
6. In the case of positive decision, an official decision-making meeting should be kept and documented.
7. A further process of possible establishment of legal entity is out of scope of Co2mmunity project.

Imprint

Establishing, managing, analysing and evaluation of feasibility of constituting of regional RENCOPs

2nd Part of Output 3.1

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