Interreg Baltic Sea Region

EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND

Energize Co2mmunity

Get Inspired on Community Energy – Stories from the Baltic Sea Region

ENERGIZE CO2MMUNITY

REAL-LIFE IMPLEMENTATION OF RENEWABLE COMMUNITY ENERGY PROJECTS

IMPRINT

Author

Anisja Obermann, Kiel University

Contributors

Andrea Cederqvist, Heinrich Böll Foundation, Germany
Doris Lorenz, Heinrich Böll Foundation, Germany
Evilina Lutfi, Green Net Finland
Ilkka Aaltio, Green Net Finland
Ilgvars Francis, Riga Planning Region, Latvia
Morten Westergaard, Middelfart Municipality, Denmark
Nele Ivask , Tartu Regional Energy Agency, Estonia
Tercizijus Varkala, Kaunas Regional Energy Agency, Lithuania
Peter Keller, Green City Experience München, Germany
Gerlind Wagner-Vogel, Kiel University, Germany

Proofreading

Genevieve Newey, Kiel University

Layout

Anisja Obermann, Kiel University

Legal Notice

TABLE OF CONTENTS

Let's Energize Co2mmunity!

Introduction

"Dear citizen,

you are interested in renewable energies? You would like to actively support the production of renewable energies yourself, but don't really know how?

In this booklet, we show you with 6 examples how you can get involved in the implementation of so-called community energy."

"Dear municipality,

you want to jump on the renewable energy bandwagon? And thereby strengthen citizen participation in your municipality?

In this booklet, we show you using 6 communities as examples of how to promote community energy at the municipal level."

We are an experienced European team who is passionate about community energy based on renewables. We are present in six different countries around the Baltic Sea to foster the implementation of community energy projects. We are co-funded under the INTERREG programme by the European Regional Development Fund alongside the project partners' own contributions.

The project partners consist of 9 organisations including government, energy agencies, and universities. By creating local partnerships for energy project development, providing knowledge, developing tools, and organising stakeholder meetings, we support you in taking the energy transition into your own hands.

What is Community Energy?

CE projects offer the generation of renewable energy (RE) from local sources such as wind, solar, biomass, hydropower, and geothermal. Projects are developed and implemented through the active participation of local communities, in which citizens work together to co-finance, co-develop, and co-operate RE plants.

Production facilities are then co-owned and maintained, and benefits are shared among the owners in the community. Energy is co-usedby the owners, and any excess energy is normally delivered to the local/regional grid and sold on the regular market.

Cooperation

We believe that cooperation is the key to success. Instead of working in isolation, we exchange ideas and experiences while continuously supporting one another. Doing so will help us improve our understanding of CE barriers and enablers, and thus relay the acquired knowledge to policy makers.

Within our project, we paired up three partners who exchanged ideas and learned from each other. We show you on the basis of three pairing stories what is important in cooperation and what benefits it brings.

6 Pilot Projects

Energize Co2mmunity

Real-life implementation of renewable community energy projects

Uusimaa region:
pilot sustainable renewable CE solution for Husulanmäki communal housing area, geological and technical study will be made, different CE solutions for Husulanmäki will be compared and a suitable CE system and its ownership structure propose, Permission application process for the CE system will be implemented

6 pilot projects based on transferable model of

R.EN.CO.P

Renewable ENergy COoperative Partnership

Tartu:
Solar PV to be installed on public & apartment building roofs, establishing a citizen-owned PV park, Citizens will be share owners and a 2nd, bigger stage will be launched after the 1st stage is covered -Feasibility study will be done for the solar panel installation. Meetings & info seminars will involve stakeholders

Rendsburg-Eckernförde:
Support local RENCOP spinn-off's : former RENCOP partners, who become RENCOP coordinators themselves

Riga/Marupe:
small-scale CE pilot project in Mārupe rooftop solar collectors & batteries for a 5-storey residential building elaborate new monitoring solutions transfer of the results

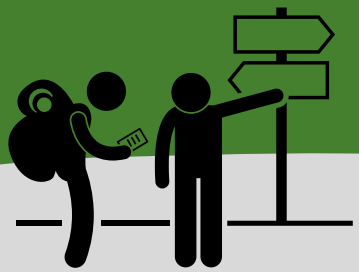
Middelfart:
"common purchase of heat pumps" in a real-life project in dialogue with the DK Association for District Heating&Renewable Energy Co-operations, test a non-profit distribution of heat pumps concept,making legal entities who offer the service and depends on support from actors with RENCOP experience

6 pilot project stories
3 stories of pairing
front runners and followers

Pagramantis:
starting a solar PV project financing for this mature project idea, e.g private investors or citizens suppliers for better technological/financial conditions and is consulting with Ministry of Energy rules&requirements for partial financing RE projects

www.co2mmunity.eu

Get inspired and follow the path to renewable community energy...



Empowering through energy: the community house in Pagramantis with a focus on independent living and renewable energy

Lithuania

Our STORY

Pagramantis is one of eight elderships (smallest administrative unit) of the Tauragė district in Lithuania. This eldership is recognized for pioneering the field of renewable energy in Lithuania and is home to around 3,500 residents. In 2017, the idea was put forward to establish a community house to support independent living of single, elderly people. Before long, the proposal became concrete and later that year, the municipality bought a vacant building and renovations began.

Citizen efforts are essential to the successful realization of community projects

The house design is made up of furnished rooms for independent living, a meeting room to enrich the social life of the city and a canteen. Members of the public and tourists will also be able to enjoy the canteen, which will encourage the open and connected nature that has been envisaged for this community house. So, how does an idea like this come to fruition?

This is where Jonas Samoska, a local resident, comes in. Jonas was the leader of the eldership until June 2021 and gave up the position due only to age limitations. He holds the climate, the environment and his fellow humans very close to his heart, and it was for this reason that it was clear from the beginning that he will participate in the planning of the community house.

For Jonas, heating considerations of the new community house were high on his agenda. A wood pellet boiler and heat pumps have been planned, and these systems, as well as the electronic equipment of the house, require a lot of energy. That's why this Jonas had the idea that the energy could be produced by house itself. It goes without saying that this idea immediately gained the full support of the community, support which comes from a source of respect that a community member earns from a lifetime of dedication to his fellow citizens.

"Dear citizen of Pagramantis, please care about your families' future. Using renewable energy is important when we wish to have green forests, blue skies and comfortable living conditions!"

However, it must be said that even though a good idea needs someone like Jonas to be the driving force, implementation would not be realised without the support of the local government. Members of the government were fully behind the proposal from the beginning. Central to their cause was the idea of Pagramantis pioneering the promotion of renewable energy among elderships.

In spring 2018, Jonas met a team from the Kaunas Regional Energy Agency (KREA) at an event in Kaunas. He discussed his idea to build a photovoltaic system on the roof of the community center. At that time, KREA was already a partner of the Co2mmunity project and was looking for pilot projects, so Jonas's idea was perfectly timed.

A feasibility study and the search for financing possibilities followed, and by the time the 'Energize Co2mmunity' project was beginning, Pagramantis was ready to apply for co-financing. The renovations are currently going full steam ahead: the solar system is being installed and the first kilowatt hours will be generated soon.

It can be said that ideas can be developed quickly, but implementation often takes time. Therefore, it goes without saying that this progressive idea had to overcome some hurdles. These included bureaucratic requirements, an adjustment of the plans and of course, the acquisition of financial resources. Fortunately, Jonas and the community never questioned whether these possible barriers were insurmountable, rather they persevered and met the challenges head-on.

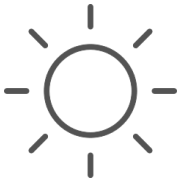
Jonas shows not only what a single ordinary citizen is capable of, but also how much can be achieved with collective action. To generate energy on-site to empower individual living of elderly residents of the community was Jonas's clear goal. It is his source of inspiration and continues to support the generation of this project from design drawings to ultimate realization.

before...

... and after the renovation)

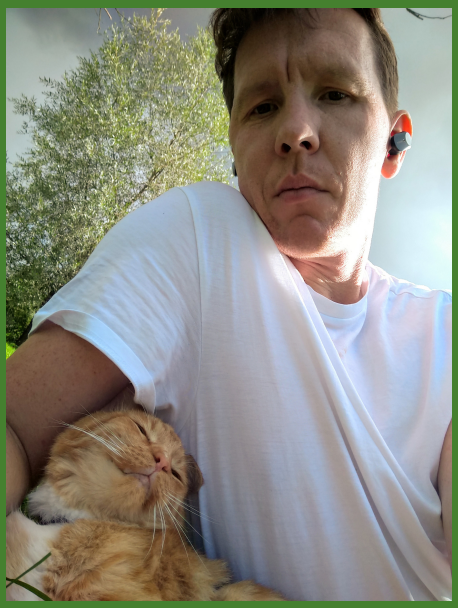
Installation of PV on the roof the Pääsupesa kindergarten – or how one ginger cat inspired a team to remain motivated during the pandemic

Estonia



Our STORY

Online meetings - over the past year, they've become part of the daily routine for many people. For those involved in this story, one character was never missing from any meeting: a ginger cat. He actively participated in all online meetings and followed the developments of community energy in Tartu in detail. If he didn't agree with something, he looked sternly into the camera or exchanged a serious word with his master, Kaspar. If the participants were not focused enough, he acted as a cheerleader, making the others laugh and raising the energy level of the participants.

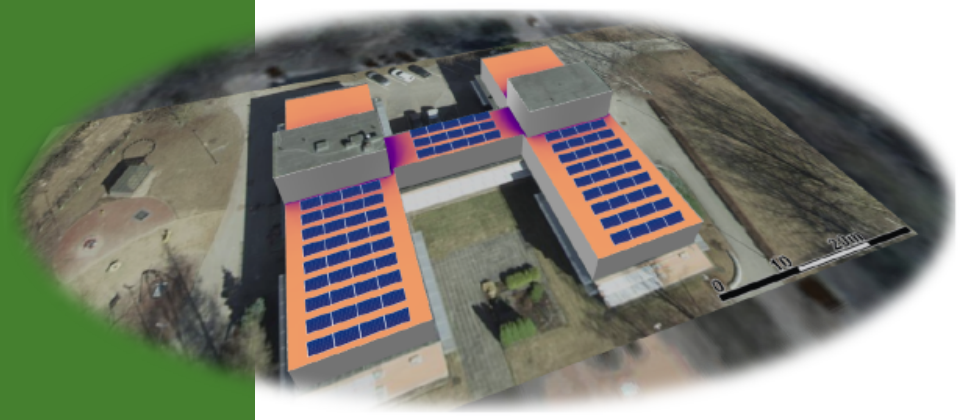


His master Kaspar works for the government of the City of Tartu. Kaspar is responsible for energy and climate issues, and therefore also for the development of energy communities. At the same time, Kaspar maintains an intrinsic interest in the development of Tartu, because he has lived there his whole life. He states that his main goals for the citizens are to feel at home in the city and to feel part of a community, goals which in his experience, lead to citizens living in a more environmentally friendly way.

That’s not to say that these aims are easily achieved. Tartu has a population of around 95,000 and is the second largest city in Estonia. However, Kaspar is enthusiastic with ideas and has contributed to the implementation of many projects in recent years. Kaspar believes that the activities that affect the daily lives of citizens should also be discussed with them. Therefore, the city of Tartu has been in constant dialogue with its citizens over the years; asking for opinions, suggestions, organizing discussions to create a rich atmosphere of exchange and citizen involvement.

Kaspar was also instrumental in the development of the Tartu Climate and Energy Plan 2030. According to this plan, the city should become climate neutral by 2050 and before 2030, reduce CO2 emissions by 40%. In this process, Kaspar has worked closely with the Tartu Regional Energy Agency (TREA), an NGO founded by the city to implement energy activities. TREA has been involved in community energy issues for over three years and has gained a lot of knowledge and experience in this time. In Estonia the level of awareness and preparedness in this field prior to the establishment of TREA was still very low.

The cooperation between the City of Tartu and TREA resulted in the pilot project in Pääsupesa, a kindergarten in Tartu. TREA wanted to build the first citizen owned PV park and at the same time, Kaspar wanted to start producing community energy and to implement the goals of the Climate and Energy Plan. After various analyses, Pääsupesa kindergarten was selected as a pilot site. It has just been renovated, has a high energy consumption and is very well insulated.



In the planning phase, TREA was responsible for the technical work. This included, for example preliminary calculations regarding size, productivity and cost-benefit-calculations. Now a PV park with a capacity of 50kW will be installed on the roof of the kindergarten (public building). The energy produced will be mainly consumed by the kindergarten, with the surplus being sold to the general grid. For this purpose, an energy cooperative will be founded, in which the citizens of Tartu can become members.

Naturally, questions have arisen: is it possible for the city to become a member of the energy cooperative? What additional support can the city offer to energy communities in Tartu? Kaspar and TREA started to look for answers to these questions. In this context, many complex legal issues arose, especially since such a project has not existed in Estonia before.

"Dear Citizen of Tartu, participating with a neighbour in the production of energy or reducing your own consumption provides an opportunity to influence societal changes in the energy landscape and the market for your own benefit"

In the meantime, the topic of energy communities has been showcased through various media releases via a newspaper article, a radio report, and presentations at various events in Tartu and throughout Estonia, amongst other things. Additionally, information seminars for citizens on the topic of community energy were organized in June and September 2021, which were moderated by Kaspar and Martin from TREA. Since the planning phase of the Pääsupesa Pilot Project has now been completed, the opportunities to join the stakeholder group of this project could be advertised during these seminars.

This story also shows that it makes a difference whether the people in power are behind the projects or not. In this case, Raimond, the Deputy Mayor of Tartu, was a great help. He is a real spokesman for renewable energy in Tartu and has been invaluable in advancing the Energy and Climate Plan 2030. Raimond has always been open to proposals concerning energy communities and has passed the information directly to a higher level of city management, which has been crucial for future-looking developments. Therefore, Tartu is well on its way in becoming a model for other municipalities in Estonia.

This project has faced its fair share of challenges. First, the Covid 19 pandemic has made communication with the target audience – the citizens of Tartu – much more difficult. Not everyone is used to or willing to participate in online meetings. Moreover, being a pioneer in any situation always offers up multiple pathways, in which steps need to be taken one at a time. For this it is important to have someone like Kaspar, and his ginger cat, the likes of which do not shy away from hurdles, but rather actively look for solutions.

Tartu Regiooni Energiaagentuur
Tartu Regional Energy Agency

Renewable energy and a taste of tranquility: the story of the Lake Lapinjärvi housing development

Finland

Our STORY

Escape the hustle and bustle of the big city. Find yourself at Lake Lapinjärvi. Immerse yourself in forest, right into the heart of nature. Does it sound like adventure? A recipe for calmness and peace? Loneliness? Tanja Korvenmaa is one person who moved from Husulanmäki, to undertake an experiment in secluded living.

Husulanmäki is a rural area of the municipality of Lapinjärvi in Finland, about 100 km from Helsinki. Situated by a lake, characterized predominately by forest and untouched nature, the only signs of human habitation are a few old houses. The municipality of Lapinjärvi is now planning to build a small ecological housing area with 12 semi-detached houses. Special emphasis is to be placed on timber construction, as well as low-carbon, sustainable and community housing.

The target audience is people like Tanja who want to move out of the city to a place which has nature as its focus. Tanja is a 40-year-old single woman from the capital Helsinki, where she lived in a shared apartment until recently. It has long been her dream to move to the countryside. In Helsinki, she attended a workshop on the development of Lapinjärvi, which is where she first learned about the project. After visiting the area, she agreed to move there as the first test person, to experience first-hand the ins and outs of living in such a unique place.

Fast forward to now, when Tanja is now living in a cottage with a sauna, awaiting the construction of the new houses. By profession, Tanja is a facilitator and organizational developer. Since the Covid-19 pandemic, she was able to work online, so the change of location is not a problem professionally.

When asked what life is like in Husulanmäki, she responds enthusiastically: "I have very much enjoyed the beautiful nature. It is beautiful at any time of the day. There is a lot of diversity in the forest and many species and quite original things to see. Wonderful!"

Tanja's biggest fear was loneliness, which was something she experiences every now and again. Would her friends come to visit her when they have to travel so far out? The neighborhood is quite isolated, there is one family that lives a few hundred meters away, but apart from that there is no one else. “After work, social life gets very quiet out there”, she says, “especially in winter when it gets dark so early.”

Meanwhile, she often goes by car to Helsinki on weekends to visit friends. At first, the fact that she had to buy a car was a disadvantage, as in Helsinki she used to go everywhere by bike or foot. However, recently she has come to appreciate her car and the independence it gives her. In addition, Tanja is no longer alone. Her dog Loke accompanies her wherever she goes and provides invaluable companionship.

For Tanja, the plan for the new housing area to use renewable energy for heating was a major drawcard, as asides from the obvious environment reasons, heating makes up a large component of the annual energy costs in Finland. "Renewable is the only sensible way!" she says.

Fortunately, the housing project caught the attention of Ilkka Aaltio from Green Net Finland, a project partner of Energize Co2mmunity. Through contacting the mayor – Tijna Heikka – the Husulanmäki housing project became part of the Energize Co2mmunity project. Collaboration was further strengthened through the involvement of Professor Pekka Heikkinen from Aalto University. Everyone was enthusiastic about the idea of integrating renewable community energy solutions into the project. If the effort to get community energy up and running was attainable, Tanja was happy to be on board immediately.

"Dear Finnish municipalities, renewable community energy is one possible, practical step to address climate change and reduce carbon emissions. In addition, you gain a lot by encouraging 'team spirit' among the citizens. Co-operation brings people closer to each other and mutual goals foster deeper understandings. You can enable renewable community energy in your region by trusting the citizens and supporting them to implement energy production communities together."

The first step was to conduct a feasibility study for renewable community solutions. Relatively quickly, it became clear that solar energy was not going to work. In an outcome that surprised everyone, the cheapest solution – while reducing the most CO2 – was individual heat pumps for each house. A central geothermal system would be a big investment and would only pay-off financially after 25 years. Unfortunately, this means that Husulanmäki is not suitable for an energy cooperative. Accordingly, plans had to be changed and the permit procedures for individual geothermal heating instead of a common purchase needed to be researched.

Plans to build the houses are, of course, ongoing. In the meantime, new water and sewage pipes have been laid and the first plot of land has been sold. The first house is to be built in 2023. Since Tanja does not have a family, she does not want to buy a plot of land at the moment. But who knows what the future will hold.

Tanja urges the development of future sustainable pathways: "In today's world, we need to test new and feasible technical solutions. From this, these solutions become part of our everyday life. Now is the chance, and we should not waste more time. Now we can make our everyday life meaningful."

This pilot project shows that community owned energy production is not a panacea for everything and that each case must be examined to determine what the best solution is. Sometimes a change of plans is necessary to achieve even better results in the end.

gnf Green Net Finland

To move towards a national energy transition, one should begin within their own municipality

Latvia

Our STORY

It is often the conviction and commitment of individuals that contribute to the success of projects. This is also the case in the municipality of Mārupe in Latvia. As a suburban municipality, Mārupe borders the capital Riga and has about 36,000 inhabitants. Recently, it has become very attractive for people from Riga to move to the outskirts of the city to areas such as Mārupe to buy their own house. Accordingly, this municipality is one of the fastest developing municipalities in Latvia, both in terms of population and economic growth.
This development offers enormous potential for thinking about and promoting the development of renewable energies. Therefore, that is exactly what Kristaps Locs as Chief Executive of the Municipality of Mārupe and Ilze Kremere as Head of Development Division are doing.

They are not only concerned with the development of renewable energies, but above all with the involvement of the local population. Kristaps and Ilze believe that it is necessary to give the local population as much say as possible right from the start. Residents need to be informed about the possibility of community energy so that they can develop ideas themselves. In this way, they have helped the municipality of Mārupe to play a pioneering role in Latvia, because community energy is still nearly non-existent in Latvia.

Although Latvia has a high share of renewable energy in its national energy mix, and biomass has gradually replaced fossil fuels as a source of electricity and heat, most district heating companies are owned by local municipalities or private companies. Individual households or local household associations therefore do not possess shares in these companies.

During the project phase of Co2mmunity from 2017 to 2020, a renewable energy cooperation partnership (RENCOP) was established between the Riga Planning Region (the second-tier municipality) and the Municipality of Mārupe. During this period, Kristaps and Ilze realised once again the importance of creating a network of relevant stakeholders at local, regional and national levels. In this sense, they approached for example, the Ministry of Economics of Latvia, which is responsible for energy issues in Latvia.

Given the fact that initial costs to develop community energy projects are comparatively high and the payback period of projects is relatively long, governmental support programs have become very important to encourage renewable energy partnerships and practical solutions.

The cooperation between Mārupe and Riga Planning Region has resulted in two pilot projects during the Energize Co2mmunity project phase. Renewable energy production facilities, which in 2017 were still conceptual ideas, were able to become a reality. At various stakeholder meetings, technical solutions were discussed, locations for pilot sites were selected and the exact method of implementation was planned.

Kristaps and Ilze, together with the whole project team, municipal experts and external consultants, guided local citizens and provided their expertise.

The first pilot project is PV panels and thermal collectors for a three-story apartment building with 30 households. The second pilot project is PV panels and thermal collectors for a row house with 6 households. In both projects there were exchanges with the residents before, during and after the installation. In addition, real-time data can be viewed on the website of the Municipality of Mārupe to ensure maximum transparency.

"Dear citizen of Mārupe, the future belongs to green energy. Let's produce it together to become a part of the future, today!"

To involve the citizens, Kristaps and Ilze organised a public event on the topic of renewable energy for the population of Mārupe. Additionally, in one case, they wanted to reach a younger target audience, therefore they hosted a concert of local young bands. This is pertinent due to the fact that the average age of the population of Mārupe is 35.

Another incentive is a plaque that they give to residents who already use green energy. This is to reward citizens who are already committed to using renewable energy.

The biggest hurdle to the take-up of community energy in Latvia is the lack of regulation for community energy projects. Currently, only individual households or commercial companies that install solar panels or other renewable energy systems can feed energy into the grid and receive financial compensation. This option is denied to citizen groups such as cooperatives, and there is currently no financial support mechanism for energy cooperatives. Accordingly, a proposal to amend the Energy Act has been submitted to the Cabinet.

The next step is to attract new stakeholders, report on the pilot projects and pass on the knowledge to others. In addition, cooperation with politicians from the energy sector is to be deepened in order to contribute to new funding opportunities. In this way, community energy will become better known in Latvia.

The fact that Mārupe has become an ambitious, innovative and green community is mainly thanks to Kristaps and Ilze. It is only through their commitment that the pilot projects could be implemented and Mārupe to become the leading community in terms of renewable energy in Latvia.

RĪGAS PLĀNOŠANAS REĢIONS

When national subsidies get in the way, ingenuity saves the day

Denmark

Our STORY

Varny and Carsten proudly present their newly installed heat pump. The special feature: they financed this together with others.

But how did they get there? It all started when the Municipality of Middelfart invited citizens to a meeting to inform them about energy saving and alternative heat sources to old oil boilers. Since Varny and Carsten owned old oil boilers and wanted replacements, they were very interested in participating. During the meeting, the possibility of testing a collective purchase of heat pumps was raised, but only if there were enough interested parties.

The response was positive: a group of nine people, including Varny and Carsten, were interested and came together for a second meeting. Now, the next step was to appoint a 'citizen chairperson', for the process of joint purchase. This person was responsible for contacting potential installers, as it is very important that this contact comes from one of the citizens. Since Carsten was enthusiastic about the whole idea, he agreed to take on this position. After receiving offers from three installers, the nine people came together for a third meeting.

"We work hard on green transformation and sustainable communities, that is, we take initiatives together with citizens and create joint sustainable results. Joint purchasing of heat pumps is a very good example of municipalities serving citizens with advice and guidance, facilitating meetings and all the hassle. Yes, it may seem innovative and crazy that we support the joint purchase of heat pumps in this way. But it is fundamentally in line with what a municipality really is, namely a community to solve common interests and needs, whether it is education, elderly care or collective energy measures. The fact that citizens save money and reduce CO2 emissions by 15-25 tonnes in this project is a win for the individual and society." (Johannes Lundsfryd Jensen, Mayor of Middelfart, Sept. 2021)

In the meantime, the staff of the Co2mmunity project, which acts in a secretary role for the whole process, had prepared a comparison of the offers regarding price, noise and size, amongst other things. A vote was taken for an installer and all nine people had the opportunity to buy heat pumps as a group. This process was very simple and easily accessible to citizens. As a result of this success, it is highly recommended that this process be repeated in other communities.

However, unforeseen events can always occur. In this case, it can be said somewhat polemically that too much money sabotaged the process. The reason is that the Danish government has launched a program to promote the replacement of old oil boilers with heat pumps. Citizens receive a subsidy of about €4,000 if they replace their oil boiler with a heat pump, which corresponds to up to 30% of the investment. The project 'Common Purchase of Heat Pumps' could only offer €100, plus service, and thus could not compete with the offer of the government. Although some interested citizens could still be found, no installer had capacities anymore, because they had far too many orders due to the government's offer. In such cases, it is important to be flexible and accept a change of plans.

Thus, those responsible for the Energize Co2mmunity project looked around for other options. Not wanting to abandon the common purchase process, they looked at other technologies that were not 'at risk' from a national incentive program. And that's how they came to the common purchase of solar PV. When trying something new, the best way is to get inspiration, tips and know-how from people who have already implemented such a project. In the United Kingdom, Belgium and the Netherlands there are such successful projects. Contact was made and the people responsible were interviewed. It turned out that common purchase of solar PV is in the end even easier than heat pumps, because not so many priorities collide between the critical parameters. Now the task is to get other cooperation partners on board, such as the University of Hamburg.

The Citizen Journey

Phase 1: Register for free and without obligation

When you register online for your complete solar PV system, you will be asked questions about your house, roof, and your electricity usage. If you don't know the exact figures for your roof size or electricity usage, we can help you estimate with industry or local averages. You can enter more accurate information when you have it.

Phase 2: Auction

The auction is a reverse auction, meaning the lowest bid wins. The winning bid sets the price for all solar systems. All installers are pre-vetted and must comply with national criteria to guarantee the quality of the offer.

Phase 3: Personal recommendation

After the auction, you will receive a personal recommendation which will include information about the winning supplier and your complete package, costs, and savings. This information is for you to consider, if you have more questions, you can always contact the "clean energy tripadvisor" help desk.

Phase 4: You decide

After you have received your personal recommendation, you will have six weeks to decide whether you want to accept it or not.
To ensure you make a well-informed decision, we will offer you the opportunity to meet the winning installer and take a look at the materials at an information event. If you have registered, you will receive an invitation to the events ahead of time.
When you are ready to decide, you can accept or decline your personal recommendation. If you choose to go ahead, we will ask you for a €200 deposit. This deposit is conditionally refundable.

"Dear Danish municipalities, fulfill your climate targets! Do what's expected, involve and co-operate with citizens on climate!"

Middelfart KOMMUNE

Multipliers as a means of empowering new ideas and methodologies of connection

Germany

Our STORY

"As a 'Landfrau' I think it is important, especially in rural areas, to motivate people to rethink. Climate protection and the energy transition concern us all! The many good conversations with the activists motivate me to raise my voice on the issue." (Iris Brücker, Landfrauen Rendsburg-Eckernförde, Sept. 2021)

Just as Iris describes, exchange and learning from each other are key to drive the energy transition forward. Good ideas should be explored, and people should be inspired and informed to act in a more environmentally friendly way. Multipliers play an important role in this, i.e. people who pass on the information and the experience that they have learned to others.

This is the approach of the Heinrich Böll Foundation in Schleswig-Holstein, Germany. Within the Co2mmunity project, they have ensured that many stakeholders have come together to inspire, motivate and learn from each other. These include, for example, the Lutheran Church, the Naturfreunde (Nature Friends) of Büdelsdorf, the Landfrauen (rural women's association), the adult education centre and the climate management of the regional authorities in Rendsburg-Eckernförde. It is important to note that these organizations are not necessarily active in the energy sector and are therefore much more likely to reach people outside of the 'bubble'. Community energy experts provide support through knowledge and experience. The Heinrich Böll Foundation creates a collaborative framework for this and acts as a facilitator.

Thus, these stakeholders were empowered to develop and initiate community energy projects themselves. In various online meetings, they exchanged their project ideas and jointly discussed how they could be realized and how the partners could help each other.

"The opportunities for initiatives, associations and organisations to do more for local environmental and climate protection have improved considerably thanks to your expertise and personal commitment. For the Büdelsdorf Friends of Nature, the connections you created were very helpful in pushing for the participation of the town of Büdelsdorf in the climate protection agency of the district of Rendsburg-Eckernförde. My personal initiative to launch a climate savings book for this region was also able to be presented with much more emphasis to the authorities responsible for financing and implementation thanks to your support. (...)" (Herbert Schauer, Sept. 2021)

The project ideas that the multipliers want to implement are as diverse as the multipliers themselves. The Lutheran Church, for example, is in the process of developing a 'crash course' for people who would like to learn more about climate change and the potential of community energy. It is mainly for municipal and political councils with a focus on energy-saving buildings (renovation) and their renewable energy supply, as well as climate-friendly procurement. The Landfrauen, for example, are developing a cooking app where people can upload recipes for seasonal and regional cooking and thus empower other people to cook in a climate-friendly way. The Naturfreunde Büdelsdorf have started the initiative to develop a climate protection 'savings account', which shows local sustainability efforts and presents environmentally friendly initiatives and climate-friendly offers from the region. The businesses place a voucher in the savings book for this publicity, which in turn gives the incentive to go there. Although these approaches are low-key, they are an important first step and easily accessible for everyone.

In order to make even more people multipliers, the Heinrich Böll Foundation is in the process of developing a toolbox for knowledge exchange and training so that others can follow this approach. This will include webinars, films and opportunities for peer-to-peer support.

"Of course there are different levels of engagement to and with the others "in our group". But overall, the contact with the other people from the different organisations and with yours is very helpful and especially the support provided to develop the "crash course". Examples include the constructive input on the project description, the financial plan and simply encouraging me to stick with my plans. Thank you very much!" (Dr. Julia-Maria Hermann, Church District Administration of the Ev.-Luth. Church District Rendsburg-Eckernförde, Sept 2021)

Originally, the Heinrich Böll Foundation also wanted to develop concrete pilot projects. However, while exploring their feasibility and trying to support project initiators to implement them, they were hindered by external factors such as approval procedures, the timespan of which would exceed the project time of Energize co2mmunity. Hence, they realised that it would be more fruitful to try to engage in more system approaches, to make sure that as many stakeholders as possible were enabled to develop and implement their own projects. In this way, a larger audience can be reached.

Unfortunately, the Covid-19 pandemic has made exchange, meeting and learning from each other much more difficult. Patience was needed from all participants to keep the interest and energy for the implementation of the projects. Even though many things are possible through online meetings, the spirit cannot be passed on as easily as in face-to-face meetings. In addition, some activities of the partners involved could not be carried out and bringing new stakeholders on board was also made difficult during the pandemic.

However, we must not let this get us down. Since it was clear to everyone that there is a great need for in-depth qualifications and training about community energy, climate protection and sustainability, the motivation to move forward with the projects was high.

"Dear citizen of Schleswig-Holstein, to get involved in the energy transition does not only mean to run renewable energy plants by yourself or together within a community, BUT also to become active by raising the awareness of climate protection and renewable energies amongst your friends, your neighbours, your colleagues, your association members, ...! In doing this, your actions will be respected and at the same time you will be able to contribute in a creative ways, for example through a cooking App!"

HEINRICH BÖLL STIFTUNG
SCHLESWIG-HOLSTEIN

Our Pairing STORY

Estonia Finland

Since Finland and Estonia are linguistically and culturally related, it was obvious to form a partnership between the project partners of these two countries. Ilkka from Green Net Finland confirms this by saying "Estonians have, in many respects, a similar mindset as us Finns". Although most of the meetings could only be held online, a lively exchange took place with great interest on both sides.

"I expected new information about the development of the Finnish pilot project and also about some background activities (permitting processes, subsidies, etc.). (...) It is very useful to know about such related processes in order to a) compare with relevant processes in Estonia and b) if anything especially interesting comes up, it would be possible to try to suggest such processes for the Estonian context as well." (Nele Ivask, project manager, Tartu Regional Energy Agency (TREA), Sept. 2021)

"With each successive meeting, we expand our views. We have mutual values, such as the wish to reduce carbon emissions and to improve the living environment, all achieved within reasonable costs." (Ilkka Aaltio, Green Net Finland, Sept. 2021)

"The projects are different, but it was very useful to compare the technical outcomes of the Finnish partners, particularly the result that individual heat pumps are the most effective solution. I also received new information about the subsidies in Finland." (Neeme Kärbo, project expert, TREA, Sept. 2021)

In the first two meetings, the current status of each pilot was presented by the partners. The main topics were new findings and studies, challenges and legal issues. Afterwards, various aspects were discussed, such as the question of whether municipalities can be actively involved in community energy projects and what the relevant regulations look like in each country. At the last pairing meeting, which took place at the final conference of the Energize Co2mmunity project, strategies for the promotion of activities and opportunities for participation was discussed. As both project partners are very happy about this cooperation, future collaboration is high on their priorities for the future.

"Ground-source heat pumps were interesting and could be used by us. One table showed the profitability of different energy projects, which was of particular interest to us. Geothermal heat pumps were practically the only projects that paid relatively quickly and had a positive IRR and NPV. This was quite a surprise."
(Ülo Kask, energy expert, TREA, Sept. 2021)

Our Pairing STORY

Germany Latvia

Another cooperation pair is formed by the partners from Germany and Latvia, who have organized an impressive five pairing meetings in the last year. Fortunately, they also had the chance to visit each other in person, with a delegation from Riga travelling to Kiel in Schleswig-Holstein at the end of August 2021. And there is no better way to start a visit to Kiel than from the waterside. While the guests were able to see various places in Kiel from the boat, they also learned about Kiel's ambitious climate protection goals.

The next two days included visits to some of the best renewable energy projects in Schleswig-Holstein, located in Sprakebüll, Flensburg, Hürup, Schleswig and Wiemersdorf. The focus was not only on citizen energy, but also on municipal climate protection, sustainable mobility and how to best involve citizens.

"Actually, I was very excited before the visit to Germany. Our German partners and I had planned and prepared for the pairing meeting since 2020, even before Energize Co2mmunity actually started. (...) Given the non-existing regulatory framework for community energy projects in Latvia, I wanted to invite those stakeholders who will be ready to get to work as soon as the National parliament approves the new regulation. This will enable establishment and operation of renewable energy community projects in Latvia (expected by the end of this year), with the Ministry of Economics also developing support mechanisms for community energy projects (expected in 2022). In this way, special emphasis will be put on the practical side of things, i.e., the real-life projects that would include various types of renewable energy projects (sun, wind, geothermal). (Ilgvars Francis, Riga Planning Region, August 2021)

Only a short time later, the partners from Germany had the opportunity to participate in the final event of the Latvian Energize Co2mmunity project in Marupe. Here, they were able to get to know the area and the pilot projects personally. Both sides are very interested in further cooperation, which became clear again at their last meeting at the final conference of the Energize Co2mmunity project in Denmark.

"I wanted to feel the motivation of active communities and be inspired to realise new ideas. The trip was stimulating and varied." (Ilze Kremere, Head of Development Division, Municipality of Marupe, August 2021)

"A person in charge who is engaged on municipality level, can contribute a lot towards renewable energy, energy efficiency and community energy. This is possible when they are knowledgeable about best-practice examples which are profitable and also when they have the authority to determine whether implementation is possible." (Doris Lorenz, Heinrich-Böll-Foundation, Sept. 2021)

"The most important take-away was that everything is possible and it is not as hard as imagined. It was truly inspiring to see energy community members and to hear about their motivation." (Janis Ikaunieks, Head of Riga Energy Agency, August 2021)

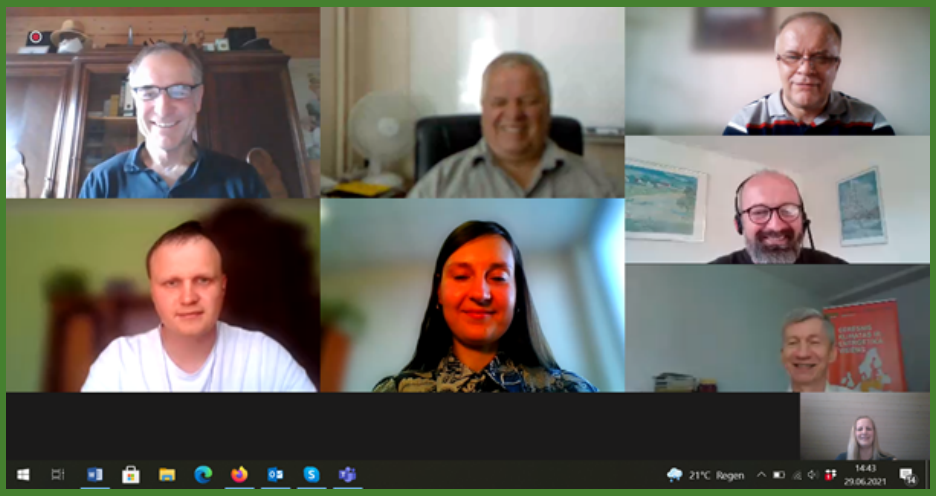
"It was very interesting to learn about how "community" engagement was perceived differently in Latvia and Germany due to cultural and historical factors. This will of course also affect how one needs to the engage with citizens. But something that is common in both countries, is that awareness-building with citizens, stakeholders and politicians can't only happen through "dry" education but also needs fun and through events that activate people." (Andrea Cederquist, Heinrich-Böll-Foundation, Sept. 2021)

Our Pairing STORY

Lithuania Denmark

A third pair is formed by the partners from Denmark and Lithuania. In a first meeting not only stakeholders from both countries participated, but also a speaker from Essex County, United Kingdom. The focus of this meeting was on input and exchange with Solar Together Essex on the topic of group purchase of solar PV. Solar Together Essex is a collective purchasing scheme to help residents and small businesses to purchase high quality solar panels at an affordable price and from trusted suppliers. The aim was to learn from the experience of a successful project in order to possibly implement a similar project in their own country.

"We are pleased to announce that, on the basis of our cooperation, the first contacts have been established between the municipalities of Middelfart and Taurage district. As we know from the feedback, the achievements of Taurage district municipality in implementing Renewable Energy projects made an impression of the progressively developing municipality on the Danish participants. We hope that these initial contacts will develop into a coherent and sustainable cooperation." (Tercizijus Varkala, Kaunas Regional Energy Agency, Sept. 2021)



"I learned that we have many of the same interests and needs and face the same barriers in many cases, although the context is very different." (Morten M. Westergaard, Municipality of Middelfart, Sept. 2021)

In a second meeting, news from the projects in Denmark and Lithuania and current developments regarding community energy and climate protection were exchanged. At the final meeting of the Energize Co2mmunity project in Denmark, the similarities and differences regarding common purchase in the two countries were discussed. In this regard, Tercizijus noted, for example, that in Lithuania negative experiences with soviet collective activity still play a major role. In addition, possibilities for further cooperation were discussed, especially with other stakeholders from other countries, such as the University of Hamburg in Germany.

"We appreciate Denmark's leading position in Europe and the steps they have taken and the wider path created that could increase the speed of Lithuanian communities, chasing the leading." (Tercizijus Varkala, KREA, Sept. 2021)

"I realized again that when you work with citizens on Renewable Energy Co-operations you must pay attention to detail. Details in context and culture are much more important than a business canvas or some standard financial proposition. Trust, understandings of place and its people, are key. Without this understanding, you will experience that culture eats strategy for breakfast. Pay attention to social context!" (Morten M. Westergaard, Municipality of Middelfart, Sept. 2021)

Overcoming Barriers – Our Partners' Experiences

Lack of regulation for renewable CE projects

Inadequate national regulation has been an obstacle to building energy communities and making them known to the general public. CE initiatives operate on the basis of a set of rules set out in the Law of Energy, which does not take into account the specificities of community energy projects.

With regard to the adoption of the EU RED and EMD revised directives into national legislation the Ministry of Economy of Latvia started with amendments to the Latvian Law on Energy. Energize Co2mmunity partner Riga Planning Region has worked with close cooperation with the ministry contributing knowledge and experience with CE projects gained from Co2mmunity project and from cooperation with local partners.

A series of public consultations with interested parties and stakeholders took place in the beginning of 2021. After that, on April 1, 2021, the Ministry of Economics of Latvia officially submitted the draft regulation and the formal interinstitutional coordination process has begun. The "Amendment to the Law on Energy" has been announced at the meeting of the Secretaries of State under the Cabinet of Ministers of Latvia. The draft regulation is currently being reviewed by the national departments or agencies involved, as well as public stakeholders, for instance, energy associations, Union of municipalities, Chamber of Commerce. As soon as the Cabinet of Ministers summarizes the proposals and approves the final draft, the Amendment will be officially submitted to the Parliament of Latvia.

Lack of operational models as an example

When creating the energy community, the technical knowledge on legal and accounting issues is required for decision-making and project management. As the experience of such projects in Latvia and Estonia is limited, each community energy project initiative must be developed as an individual project in order to find the best solutions for administrative and technical approaches. There are no well-established examples and knowledge of how to create, manage and operate an energy community/ energy cooperative. It has been very complicated to introduce both the RENCOP approach as such and the implementation of real community energy projects in Latvia or Estonia unless feasible models for this type of projects actually existed that served as tangible examples and inspired other renewable energy enthusiasts, allowing to monitor the process of (community) energy production and showcasing the practical results.

Given the non-existing legal framework and circumstances described above, no renewable energy communities have been established in Latvia or in Estonia.

In Latvia, Riga Planning Region in close cooperation with the Latvian Ministry of Economics working on a joint research that is being done as part of Energize Co2mmunity, which, amid other activities, attempts to develop a roadmap for this type of economic activity or projects. The joint research focuses on real community energy projects at Marupe and elsewhere in Riga planning region and a team of researchers will develop detailed feasibility studies that include both technical solutions and economic justification for each energy community with the purpose to demonstrate blueprints for various types of new renewable energy community projects.

In Latvia, Riga Planning Region, in cooperation with the suburban municipality of Mārupe and two neighbourhood associations, established and ran two citizen-driven RENCOP's. In addition, they launched two small-scale demonstration projects at Mārupe in order to demonstrate renewable energy production technologies in practice. These demonstration sites serves as "sandboxes" for understanding practical, technical and institutional steps towards community formation. All these demonstration projects at Marupe are a great opportunity to show the best qualities of the practical and not theoretic aspects of such projects thus encouraging local communities at the municipality of Marupe and elsewhere in Latvia to initiate similar energy community projects that enable production of green energy for self-consumption.

In Estonia, TREA has focused on developing the Energize Co2mmunity pilot project for energy communities created on the initiative and support of the municipality. The city of Tartu was the first city in Estonia to approve the Energy and Climate Plan 2030 on 1 April 2021, which emphasizes the need to create energy communities in order to meet climate goals and promote local energy production. With such a systematic approach, the city of Tartu is undeniably a pioneer in Estonia and a shaper of practices for the following local governments with similar ambitions. During the Energize Co2mmunity pilot project, TREA and the city of Tartu have encountered many legal and organizational issues, primarily arising from the involvement of the municipality (for example procurement issues regarding renting public roofs, purchasing electricity, etc.). Consistently, answers to these problems have been found or it has been decided to find legal solutions other than those provided for in Estonian law. If the city of Tartu and TREA go through this procedure, it will be much easier for the next Estonian municipalities to develop energy communities on their territory.

Lack of awareness, interest and motivation of citizens

In Estonia, community energy is taking its first steps, and a few energy communities are currently being created or are under development. Although cooperation approach is already well established in a number of areas (such as agriculture or forestry), it is not yet popular in the field of energy. In the second half of the 20th century, as well as in the early 2000s, the energy economy operated at the state level under the control of large energy companies, and private citizens did not have the opportunity to participate actively. The electricity market, which opened in 2013, also opened the door to smaller energy producers and by now the market diversification is already clearly noticeable, lot of private micro-producers have emerged.

But the knowledge that it is possible and in many ways more beneficial to produce energy jointly as a community has not reach citizens very easily. It is a long process and requires the systematic sharing of CE information with people and communities.

TREA has been raising citizens' awareness of community energy since 2017 when the Co2mmunity project started. Back then, the subject was only familiar to a few people in the energy field. Compared to that time, the increase in interest has been noticeable and the number of enthusiasts and developers in the field has increased, but the interest and motivation among ordinary citizens is still relatively low.

As Community energy is a new phenomenon in Estonia and there are no operating examples yet, there has been a lack of clear information based on working models and reliable calculations. The existence of successfully operating energy community examples would give an strong impulse to peoples motivation

In order to tackle this barrier Tartu Regional Energy Agency in close cooperation with City of Tartu has focused on 2 directions:

- Continuous information flow addressed to citizens and other potential stakeholders
- Developing the first model energy community in close cooperation with the Tartu city government. The aim is to create a functioning energy community in an urban environment, the model of which could be adopted by other cities.

Tartu Regional Energy Agency experts have presented the community energy topic on all kind of relevant events and meetings. Presentations has been made at larger and smaller conferences, seminars and meetings. In parallel with informing citizens, the aim has also been to share information with other parties (local government, ministry, experts), who should be an important support system for communities who wants to create an energy community in the future. The scope of information has varied according to the audience and the events (Community energy in general, Citizens motivation to participate in the energy community and how to foster it?; Why should citizen become a member of the energy community - what are the possibilities and benefits?; Energize Co2mmunity pilot project; etc).

TREA has also shared the knowledge in other media channels:
* thematic radio broadcast
* Articles in the local newspaper
* publishing activities on social media

In order to establish a real example for future energy communities in Estonia, TREA and Tartu City developed a operational model for the first citizen owned PV park (Energize Co2mmunity pilot project).

Lack of financial resources

Lack of financial resources is a constant problematic issue in the implementation of CE projects. The construction of any energy facility, such as a solar or wind farm, requires a significant initial investment and is usually scarce among community members. Thus, it is often necessary, even inevitable to turn to possible state and /or local government subsidies or ask for loan from banks and other financial institutions. At the end it might complicate the situation because energy community projects are generally not profitable and therefore to take an additional bank loan with high interest prolongs the payback period of the project even further and makes it less profitable. This is not attractive for potential energy community members and might decrease the motivation to participate in such projects.

Discussions with several energy and financial experts have suggested that one solution would be to provide a lower interest rate loan to energy communities, which would relieve the financial burden on the energy community to some extent. Unfortunately, at the moment, when energy communities in Estonia have not yet established and therefore not proved themselves as a viable organization, private banks are not interested in developing such a loan product.

However, it should be noted that due to the decreasing prices of solar panels and the rising living standards of citizens, the financing issues for the construction of smaller PV parks are no longer as critical as they were a few years ago. Although, it is still relevant in case of larger investments (like wind parks or bigger PV parks)

During the Energize Co2mmunity project, Tartu Region Energy Agency explored various possibilities for developing the most feasible financial models. The loan products of private banks were analyzed, the consultation with savings and loan association was carried out and various co-financing options were considered.

The interest of banks and other financial institutions in new targeted loan products is clearly linked to economic and societal processes. What is happening in the energy market depends to a large extent on the national legal framework, and energy communities as market participants are currently reflected in the renewed draft legislation, which is expected to be approved by Parliament by the end of 2021. The development of a reference framework for the development of energy communities is expected in 2022. The development of a more specific support system at the national level creates a precondition for the creation of possible financial measures (eg a state guarantee for loans to energy communities similar to the existing renovation support)
In cooperation with the city of Tartu, the possibility of start-up support for the first energy community initiatives in Tartu has been discussed.

How to convince citizens and stakeholders about feasibility and profitability?

One of the decisive stages of CE projects is usually the moment when the feasibility and cost-effectiveness of the whole project are analyzed during the planning phase. Having achieved positive results (there is usually no point in starting an unfeasible and unprofitable project), the key is to share this information and results with citizens who could potentially become members of the energy community. Many partners in different countries have repeatedly experienced that this seemingly simple task can be a significant challenge.

CE projects are generally not primarily for profit, but rather the main motive is to reduce energy costs, generate local renewable electricity for own use, strengthen community cooperation or contribute to tackling CO2 emissions and climate change. Thus, an important component is to make citizens and parties aware of the added value and other benefits of the CE project in addition to direct business case.

Convincing people in countries where energy communities are still at an early stage of development and there are no positive examples to follow (for example the Baltic countries) has proved to be particularly problematic. In Latvia, even though energy communities have a lot of benefits and advantages, an assessment made by the Co2mmunity team in 2019, reveals that the energy policies in Latvia are the least supportive of the community energy projects in the BSR. Energy system has been centrally governed in Latvia and is even not sufficiently open to hybrid forms of cooperation and public initiatives. Also, initial costs to develop community energy projects are high, as well as the payback period of projects is relatively long, therefore development of such projects seems to be available to a small number of owners.

To facilitate this, the Energize Co2mmunity project paid special attention to the mechanisms of communication and psychology. At the beginning of the project, the partners had the opportunity to participate in a communication psychology workshop, where everyone had the opportunity to develop their knowledge and skills, keeping in mind their specific needs and target group. Special attention was paid to the mechanisms of human decision-making processes and possible ways of influencing citizens climate decisions. During the workshop, partners practiced how to formulate an effective message and what techniques are most effective for the successful communication of climate messages.

The partners have successfully used the skills learned to demonstrate the need for CE development to mitigate climate problems as well as feasibility of such projects and to introduce the specific Energize Co2mmunity pilot projects to citizens and other stakeholders. In addition, during the Energize Co2mmunity project, partners have had the opportunity to receive assistance from the project's communication team, which supports and advises partners whenever the need arises.

Our EXPERIENCE

Our PARTNERS

CAU Kiel - Working Group Economic Geography, Germany
Green City Experience GmbH, Germany
Heinrich-Böll-Stiftung SH, Germany
Aalto University, Finland
Green Net Finland, Finland
Kaunas Regional Energy Agency, Lithuania
Middelfart Municipality, Denmark
Riga Planning Region, Latvia
Tartu Regional Energy Agency, Estonia

Thank you for the cooperation!

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

Energize Co2mmunity

Have a look at our website for further information

let's get in touch

Kiel University
Insitute of Geography
Ludewig-Meyn-Straße 8
24118 Kiel, Germany
www.co2mmunity.eu
info@co2mmunity.eu