

THE POWER OF COMMUNITY ENERGY

NEWSLETTER NO 4

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Welcome to the newsletter of “The POWER of Community Energy” project!

The Project is a joint initiative of four NGOs from four countries i.e., from Poland: Social Ecological Institute, from Turkey: Troya, from Germany: WECF and from Denmark: INFORSE-Europe.

After the successful kick-off meeting in Warsaw, Poland, in 2019, the partners got engaged with ambitious program.

In 2020, the Covid-19 epidemic almost ruined all our plans, and as a result it forced us to hold our next meeting in Germany online.

- But we have not given up ! –

We managed to organize a successful seminar in Denmark in August 2021, we extended the project period and we plan to organize a meeting in Turkey in 2022.

In this newsletter you can read a summary of the knowledge we shared during the Seminar in Denmark.

Additionally, as part of the project we are planning

- to publish a Guideline how to organize renewable energy communities, and
- to create a collection of successful examples.

For further reading, the Project’s publications and the events’ presentations are available online on the partners’ websites.

Renewable Energy Communities, where citizens are engaged in energy production, can largely contribute to increase the share of renewables and thereby to reduce the use of fossil fuels and stop climate changes.

Experiences have shown that when the legislative framework and economic incentives are in place windmills, solar cells, thermal solar collectors, and biogas are growing in numbers. This became possible as the technologies got available at a cheaper price, and became affordable even for house owners, farmers and small communities.

There is a big potential for a rapid increase in the number of energy communities, but there are still challenges with old and new barriers, which need to be changed.



Partners

Poland: The Social Ecological Institute
Germany: Women Engage for Common Future
Denmark: INFORSE-Europe
Turkey: The TROYA Environmental Association



More info: sie.org.pl troyacevre.org wecf.eu www.inforse.org/europe/POWER_CE.htm



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European Sustainable Energy Seminar in Denmark at the Nordic Folkecenter for Renewable Energy in August 17-20, 2021

YES We managed!!! We overcome all difficulties!

Organizing the seminar in Denmark was a hectic challenge because of the travel restrictions of the Covid-19 pandemic, but the optimism, hope and hardworking efforts overcome the difficulties, and finally we could actually meet in a physical event in Denmark.

There were 37 participants. 16 of them were members of the Project partner organizations- 3-4 persons representing each partner -as well 6 persons joined us from the Polish Green Network, and Polish media. Additionally, those who could not travel, could join part of the program online.

The venue itself was inspiring, with all renewable technologies in a large park, and the amazing octagonal conference hall, which is a passive architectural building partly underground with big windows to the south with view to the fjord.

The Seminar Program included presentations and workshops in several relevant thematic areas and three guided tours on seeing technologies and communities.

Read more on the Guided Tour and the Project Participants' inputs on energy communities on the next pages. Proceedings can be found at

INFORSE-Europe's web site:

https://www.inforse.org/europe/seminar_2021_INFORSE-Europe_DK.htm

During the Guided Tours:

We visited **the exhibition park of the Nordic Folkecenter for Renewable Energy** guided by Jane Kruse, director of the Nordic Folkecenter for Renewable Energy. We were guided through demonstration sites of different type of solar cells, solar collectors, small windmills, wave energy, bio-dome, e-bicycles, cooking powered by solar cell, passive house architecture and much more.

Through two bus tours, we visited the **Test Center for Small Wind Mills** of the Nordic Folkecenter for Renewable Energy, and the **Test Center for Large Windmills** in Østerild, where the world's largest wind mills are tested.

We visited **energy communities, consumer owned district heating systems** guided by Henning Bo Madsen, chair of INFORSE, and the local management. Examples of the sites we visited are:

- **6500 m² Solar Thermal Collectors providing hot water to the district heating system in Snedsted.** The consumer owned district heating was established in 1959 by 48 houses, which increased to 610 houses by 2020. The solar thermal collector field of 6500 m² of 512 panels was installed in 2015. It provides 23 % of the heat demand of the town.
- **Windmills (3x 3 MW) at the harbor combined with local district heating with a large heat pump (4.6 MW), solar thermal collectors (9,576 m²), and gas back-up at Hvide Sande.** The district heating association dates back to 1963. In 2020, it produced 92.4% of the heat from solar and wind.
- **The longest operating modern windmill (1 MW) running more than 40 years at Tvind International School Centre.** The windmill delivers electricity and heat combined with heat pumps and electric water boilers. The system is also combined with PV, and thermal solar panels. We also have seen an exhibition on how the windmill was built and visited a bio-waste water plant, and the organic vegetable gardening of the Centre.
- **Nørhede-Hjortmose wind farm and PV farm** established by local investments.
- **Lemvig biogas plant owned by farmers.** The animal manure is delivered by local farmers, and the end products are both biogas for production of heat and power for the town and fluid fertilizer for the farmers.





Project Partners shared knowledge on the future of Energy Communities in their countries and in Europe: successes and challenges

The experiences shared during the European Sustainable Energy Seminar have provided the Power project partners with knowledge, motivation, and inspiration to continue the path towards a just energy transition. Hereby please see some of the main points shared by the partners:

Seminar: Presentations, Discussions on Energy Communities

The Program was organised around the following themes:

- **Transition to Renewables & Climate Neutral Europe:**

How far are we? What can we expect from European New Green Deal and other European policies? Progress on national level, new developments with the corona crisis. - Limits of the current policies and the blind spots in policy-making for sustainable energy.

- **Future of Energy Communities in European Countries:**

Energy communities & prosumers. Successes, what have they achieved? Roles in energy transition. European laws for energy communities and prosumers, new initiatives for Green New Deal. National laws, support, and barriers.

- **Municipalities and Local Authorities as Keys for the Transition:**

How Covenant of Mayor's drive the development? How municipalities in Belarus and Ukraine are leading transition? Danish green ambitions in municipalities.

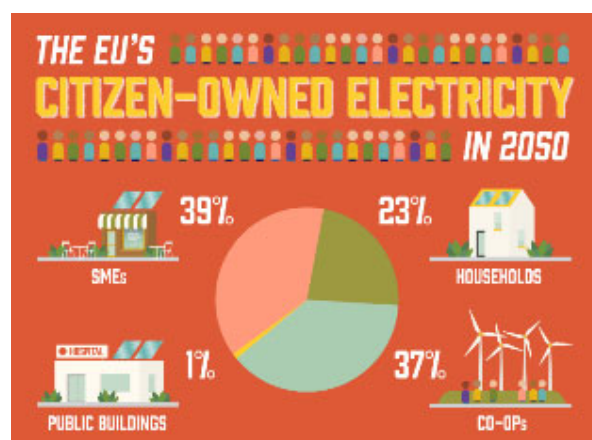
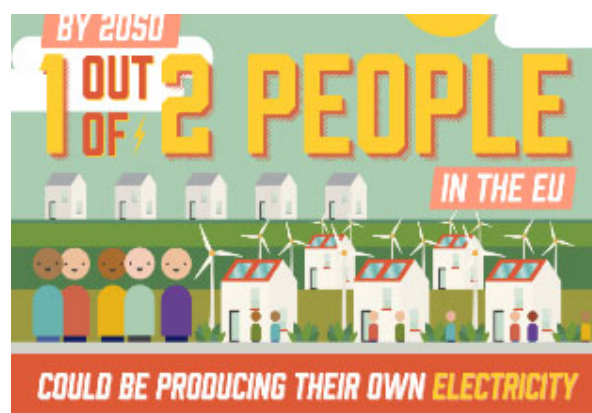
- **Transition to Sustainable Energy with Energy Sufficiency, Energy Efficiency, Renewable Energy:**

Introduction of energy sufficiency as a third driver for the transition. Scenarios for the transition, in Western Europe (Denmark, UK), Belarus, and Ukraine. Launch of database of Local Solutions to Save Energy and use Renewable Energy available in English, Ukrainian, and Russian.

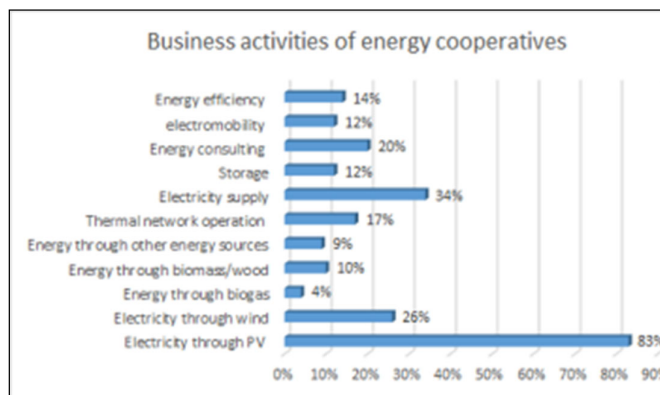
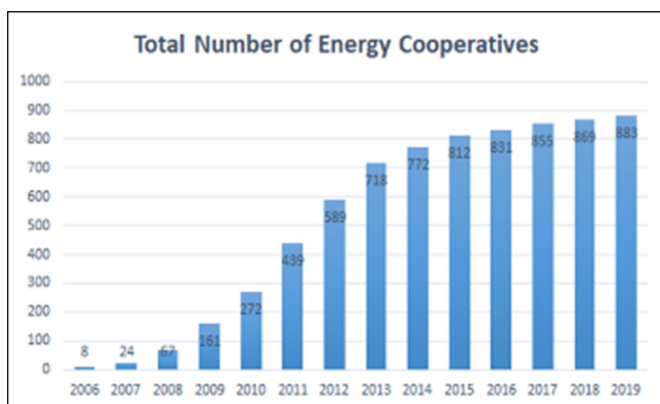
The representatives of the Project partners, WECF, SEI, Troya and INFORSE, shared experiences on energy communities in their own country and within EU. Additionally, we heard on EU, municipal, national, and local transitions. Speakers included Prof. Frede Hvelplund, Aalborg University and Henning Donslund, Ringkøbing-Skjern municipality, Denmark; Antonia Proca, RESCOOP.eu; Paul Allen, CAT and Pete West, DCE, UK; Oleksandra Tryboi, REA, Ukraine; Agata Kuzminska on transition in Wielkopolska region in Poland; and Bartłomiej Węglarz on a new cooperative initiative in Krakow, Poland; and Judit Szoleczky, INFORSE on global perspectives. Finally, recommendations were collected.

Europe: Gunnar Boye Olesen from INFORSE-Europe gave us an overview of the situation in EU, e.g., studies estimating the potentials of energy communities within EU:

- Half of EU households, around 113 million, may have the potential to produce energy.
- 83% of EU's households - about 187 million - could become an energy citizen. And
- Even more could provide demand flexibility with their electric vehicles, smart electric boilers or stationary batteries.



Germany: On behalf of WECF Germany, Marcela Noreña and Marilys Louvet talked about the keys to success and the main challenges for energy cooperatives in Germany. They highlighted that the main drivers of the growth of cooperatives are the favourable regulatory framework after 2006 and the positive image of cooperatives as a sustainable business model. They pointed out, however, challenges that cooperatives face, such as the recent amendments to the Renewable Energy Act, which have had detrimental effects on the activities of the cooperatives. They emphasised the need for the national government to include energy sharing concepts in the legislation, as indicated by the Renewable Energy Directive (REDII). Finally, they called for the promotion of changes within cooperatives that allow for greater participation of women, youth, and other underrepresented groups.



Graphs: Energy cooperatives in Germany, statistics. Source: DGRV.

Poland: Zuzanna Sasiak from the Social Ecological Institute, and Polish Green Network told us the situation of the Polish energy cooperatives. The latter still exist only in theory, and their activities are regulated by an outdated legislation. Currently, energy cooperatives face several operational restrictions. For instance, they may operate in no more than 3 neighboring communities; they cannot operate on the territory of municipalities; and they cannot have more than 1000 members. Moreover, cooperative installations cannot generate more than 10 MW of electricity, 30 MW of heat, or more than 40 million m³ of biogas per year. Last but not least, cooperative's sources of electricity, biogas or heat must be designed to cover at least 70% of the cooperative's members' energy needs.

The cooperative law in Poland, regardless of the subject, is based on a very old law from 1982, which is increasingly in need of amendment.

Renewable energy is regulated by many legal acts, but the most important is the Renewable Energy Act, adopted in 2015. In August 2019, an amendment to the Polish Act on Renewable Energy Sources (RES) came into force, which defined a separate concept of "energy cooperative" and introduced it to the Polish legal system. Unfortunately, instead of incentives and new opportunities, it has provided a set of inexplicable restrictions on territorial coverage, generated power, membership, and balancing rules. To date, not a single energy cooperative has been established in Poland.

The first energy cooperative ("EISALL" - 3 enterprises and 1 household, 20-kW PV installation) was registered in spring of 2021 but it is still not operational, due to prolonged legal procedures. An interesting initiative, based on photovoltaic panels, is starting to operate in Krakow (Krakowska Elektrownia Społeczna / Krakow Community Energy Plant), but it is set up as an investment cooperative, not thanks to, but in spite of, recent regulations, which in fact it has to by-pass. Regarding opportunities, the most important ones are related to the EU Green New Deal, the EU's very green budget, and the REDII Directive, which forces member countries to change in favor of energy consumers and of energy communities by the second half of 2021.



Group photo of representatives of the Power of Community EnergyProject in front of the conference hall building at the Nordic Folkecenter for Renewable Energy in Denmark

Turkey: Melis Yilmaz, from Troya, talked about the energy cooperatives potential in the islands of Turkey, where a transition model is developed, and the situation in Turkey.

The Troya Environmental association is partner of an EU Horizon 2020 project called “VPP4Islands”, which is reaching out on energy independence through renewable energy communities in the islands of Turkey. There are about 40,000 people live on Turkish islands. Their energy needs currently depend on submarine cable to the mainland, and a problem with a cable mean that the islands can be without electricity for a very long time. These islands are rich in renewable resources and can be completely energy independent supplied by renewable energy. Such a sustainable transition should involve the islanders themselves, through a transparent process. For this purpose, a first-ever living laboratory study will be carried out on the Turkish islands. Troya will lead this transition.

Concerning energy cooperatives in Turkey, we also learned the latest update. The first renewable energy cooperative (REC) of the country was established in 2014. Since then, the creation of cooperatives has experienced a rapid increase. By 2020, 46 cooperatives identified across the country. While the potential is huge, cooperatives see the current policy framework as barrier to the development. Legislation is deemed insufficient and creates uncertainty about the potentials. Cooperatives also face financial constraints. Only a few cooperatives have enough own capital to invest in PV projects and, thus, they often depend on loans, EU funds or need to look for cooperation and support from municipalities and institutes. Social prejudices towards RECs also persist. Previous failure of housing cooperatives and the potential use of agriculture land for implementation of solar power plants resulted in a negative image of this type of associations. In general, cooperatives in Turkey are commercial establishments and have a profit motive. Although individuals and legal entities are allowed to produce up to 60 times their consumption,

cooperatives only allow production at the rate of the contractual power of the partners. Cooperatives up to 100 members may establish a facility of 1 MW; between 101 to 500 members: 2 MW; and between 501- 1000 members: 3 MW; and more than 1000 members 5 MW.

Denmark: The Danish development was described by Henning Bo Madsen, chair of INFORSE-Europe.

It started like a tale, “*once upon a time*” (20 years ago), most electricity and district heating utilities were consumer-owned cooperatives or municipal - both production and supply. Most wind turbines were owned by locally based wind turbine cooperatives. Denmark was pioneering in establishing windmill cooperatives, where people used their earlier experiences in making cooperative shops, and diaries, housing and heating associations. After this introduction, we got an updated picture of the current successes and barriers.

District Heating Today: Presently, there are about 400 district heating companies, which all must be non-profit stipulated by law. From these, 50 are municipally owned, which deliver around 2/3 of all district heating, and about 350 are consumer owned cooperatives, and only handful are private companies. District heating supply 64 % of Danish households (1.7 million), and the number is increasing while the heating prices for the consumers are declining. The renewable part of the district heating is increasing and is now 60% of total heat supply.

Mostly, the district heating system uses biomass, but as many as 160 district heating companies supplement with solar thermal heating that cover 15-20% of yearly demand. A few have solar heat plus seasonal storage that can cover over 50% of heat demand. The seasonal storage is typically an artificial lake, for example an old, large, excavated sand pit that is covered with insulation on the top and the sides. The world’s largest solar thermal fields are in Denmark (in Silkeborg), and Denmark has been market leader in this field. In 2016, the solar collector area reached 1 million m².





Windmill cooperatives today:

At least 3.500 MW of 3.800 MW land-based wind power is installed by citizens. Total investment from citizens is over 5.000 million Euro. However, today, most wind power is installed by large investors. The government stopped the higher feed-in tariff for cooperatives, which made it more profitable for large investors because it takes time and efforts to organize cooperatives. The government has added administrative barriers with support only with tenders that require large capital to participate, including finalization of a comprehensive environmental impact assessment. The premium is so low that only large wind turbines (above 2 MW) have a reasonable pay-back period, leaving smaller projects uneconomical.

This development, shifting from local cooperatives towards investor ownership, has strongly increased local protests, as citizens are not seeing any benefits in their area with the development, only problems. Until 2017, the developer had to sell 20% of the shares of a windpower project to local citizens, and since it was stopped, the local resistance increased even more. The municipalities include windmills in their land-use plans, but as they do not involve citizens as investors, the local citizens mostly complain. This development is in contrast to the previous development, where local ownership gave local benefits and positive attitude to windmills.



Solar cell cooperatives today: Since 2004, there have been established a couple of very small solar cell cooperatives. Since 2013, private investors started to develop large solar cell parks. Here the situation is similar to big windmills, when the local people are not involved, the citizens complain. In the few places, where there are solar cooperatives, there are only few complains, and the shares are easily sold.

*Photos from the Seminar's guided tours in Denmark.
(above left): Wind turbines at the Small Windpower Test Center of the Nordic Folkecenter for Renewable Energy.
(to the right) Wind mills at Hvide Sande at the coast, heat pump nearby, and the seminar group at one of the wind mills (down); large solar cell and wind mill park Nørhede-Hjortmose (middle)*

