



Summary report of the third Norwegian country desk meeting 16.11.2022

Oslo, 25.11.2022

Merethe Dotterud Leiren, Karina Standal (CICERO)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953040. The sole responsibility for the content of this document lies with the COME RES project and does not necessarily reflect the opinion of the European Union.

www.com-res.eu

The Horizon 2020-Project COME RES

COME RES - Community Energy for the uptake of renewables in the electricity sector aims at connecting long term visions with short-term actions to facilitate the market uptake of renewable energy sources (RES) in the electricity sector. The project has a specific focus on target regions in Belgium, Germany, Italy, Latvia, the Netherlands, Norway, Poland, Portugal, and Spain, where community energy has the potential to be further developed and model regions where community energy is in a more advanced stage of development. COME RES covers diverse socio-technical systems including community PV, wind (onshore), storage and integrated community solutions. The project is coordinated by the Environmental Policy Research Centre (FFU), Freie Universität Berlin (FUB) and with 16 European partners in the consortium.

The Norwegian Stakeholder desk

Country desks have been set up in all COME RES partner countries to enable informal dialogue forums where, in addition to project results, current topics such as barriers, drivers and development opportunities for RECs are regularly discussed with actors and stakeholders. The Norwegian country desk is coordinated by CICERO – Center for International Climate Research in collaboration with the regulator and COME RES partner the Norwegian Water Resources and Energy Directorate (NVE). The thematic focus in Norway is on solar PV, onshore wind, hydropower and integrated solutions (e.g. microgrids, virtual power plants).

Minutes from the country desk meeting

The meeting was the third and final meeting of the Norwegian country desk in the COME RES project and took place at CICERO's in Oslo Science Park 12:30-15:00 16.11.2022. There was an opportunity for both digital and physical participation. Three of the desk members participated physically and five digitally. In addition, Karina Standal, Hege Fantoft Andreassen, Merethe Dotterud Leiren and Nora Ytreberg from CICERO, as well as Ingvill Sjøvold Nilsen from the Norwegian Water Resources and Energy Directorate (NVE) and Hanne Sæle from SINTEF Energy Research were also present. Three reminders were sent out in advance of the meeting. Unfortunately, we also experienced technical challenges and two participants for the digital meeting were unable to log on. Although the number of participants was less than hoped, it was unfortunately not possible to postpone the meeting as the COME RES project is in the final phase. The meeting was divided into two sessions with presentations and subsequent questions and discussions. The meeting ended with mingling and snacks for those who were physically present.

First session

Welcome and brief summary of the COME RES project / Norwegian project manager Karina Standal, senior researcher at CICERO Centre for Climate Research

Standal presented the main activities and main findings of the project. The meeting is the last with the Norwegian country desk. Data from surveys and interviews show that there are clear expectations of how a renewable energy society can contribute to the energy transition in Norway: Smart power systems in the transition; Increased production of renewables; Reducing grid expansion and associated environmental and economic impacts; Increasing people's acceptance of the transition; Lastly, the majority of

the interviewed and surveyed disagreed that the government's main focus should be mainly on large renewable energy systems. Standal referred to examples of renewable energy societies with energy production and storage in sparsely populated areas and in urban housing cooperatives and opportunities for economic, social, and environmental benefits for members and local communities. "Models" that are considered particularly relevant for renewable energy communities are solar, storage and hybrid systems. The survey data also highlights buildings, storage, flexibility services and power generation as important areas for renewable energy communities in Norway. Furthermore, the data show that grassroots actors such as neighbourhoods, well-being associations, housing associations, as well as farmers are seen as relevant. Unlike other countries, grid companies are mentioned as important players in renewable energy communities, which is not in line with the definition of members in the Directive. Further, energy cooperatives are not highlighted in Norway.

The research finds that the biggest obstacles are regulations that limit the sharing and sale of self-produced electricity, as well as a lack of political will. Measures for promoting renewable energy communities highlighted in the project's surveys are regulations that define rights for renewable energy communities (producing and supplying grids), regulations allowing the sharing of self-produced electricity, political commitments for long-term framework conditions, political quantifiable goals to increase the share of renewable energy communities or renewable energy, access to adequate information.

For local authorities, political objectives on renewable energy communities, financial support schemes for grassroots actors are mentioned, as well as taking on an entrepreneurial role to facilitate collaboration between relevant actors. What resources do municipalities need to take on that role?

Standal also referred to a finding from the project that shows two polarised narratives in the discussions: (1) One defends the current market-based and secure power system. It is cost-effective, and the optimal technologies are hydropower and wind power. There is a strong degree of regulation. It also benefits citizens as there is a large share of public ownership. (2) The second discourse is about a smarter power system, where private and grassroots actors take a more active role, where they can better meet local needs. Such models can provide more jobs, as they are important for different business sectors. It also gives a sense of ownership locally and enable that people take more active roles in the transition.

Barriers and opportunities for grid companies to facilitate local solutions / Hanne Sæle, CINELDI/SINTEF Energy Research

Sæle's presentation was based on interviews with grid companies in Norway. Sæle pointed out that there is a significant demand for increased power in the power system, which is linked to the green shift. The industrialisation we are seeing is also power-intensive. There is a need to extract more power at the same time as the power grid is being built. What prevents the use of opportunities such as flexibility in the power system? This is the focus of the feasibility study on the use of flexibility in grid companies (report by research centre CINELDI and Energy Norway).

The starting point was different ways of using grid companies that are proposed in a CEER report. Seven interviews with grid companies (geographically dispersed, small and large) were conducted.

Flexibility is defined as the ability and willingness to make a change, whether it concerns production or consumption patterns. It can be done at an individual or aggregated level. The change is made because of an external signal, that one is asked to change something. Classification is in production, consumption (e.g. movable in time, disconnect electricity and take it again later) and energy storage (electric as a

battery in the garage/grid or mobile storage as an electric car, thermal). To enable this, an incentive is needed, which involves network components, ICT systems, framework conditions (network tariffs, rule-based access, connection agreements, market-based access) or aggregators.

Basically, someone must have a need for the flexibility. The starting point is that the grid company needs this. Online customers with potential flexibility can help. In the value chain are business models and actors that can realize and activate flexibility. We are used to laying a cable. Here you have to create a program, where you get the flexibility when you need it and have to know that it is delivered.

An important question is how quickly can flexible resources respond? You get a rebounding effect afterwards so that new problems are created. A hot water tank that is disconnected from the grid must have extra energy when it is reconnected to heat the water. It is not a flexible resource for one purpose, but how different fit together.

There are physical and geographical barriers. When there are a limited number of flexible resources available, that capacity may not be where it is needed. Grid companies also lack knowledge about what is the actual capacity of the grid (real-time information). There is also a lack of tools to plan the grid in terms of flexibility. Grid companies want a player to deal with. Barriers apply to both competence and culture. Utilities must learn to trust flexibility and know that it is there. The grid is planned for a lifetime of 70 years, but such long agreements cannot be had for flexibility. Different incentives are needed for this to be profitable. Maturity on the customer side applies, among other things, to the fact that consumers do not have an understanding of having to be flexible. It is also unclear what the customer expects to be paid for flexibility and what the grid company is willing to pay.

Different types of consumption apply to transport in particular, to a certain extent buildings (there are management systems already), microgrids and local energy communities will gradually come in the slightly longer term. The study shows that there is an increasing focus on flexibility that can contribute to postponement of grid investments, contribute to faster connection of new consumption while new grid is being built.

Implementation and plans for local energy solutions in Lohøgda housing cooperative/ Terje Holmen

Holmen presented what they have done at Lohøgda (one of Norway's largest housing cooperatives) and what they hope to do in the future. It started with renovation plans for the bathrooms. They decided in 2017 to make a common water heater in the basement. The board began discussing several ways to obtain energy. Solar power was adopted in 2019 with a test roof that has now been installed. For the residents, it was as much the environmental aspect as the economic aspect that was important. Many of the elderly felt that now they were also helping to contribute. The rooftop PV came up in the fall of 2021. In March/April, they saw that this was good financially. They received approval from residents to continue with PV in 2021. They had received information about hydrogen storage and are considering this now. They felt that there was not enough economy in sending self-produced electricity to the grid. By storing it in hydrogen, they could control more themselves. They will both produce and use hydrogen. Today, water heaters are used as storage. They are hoping for new regulations (because today they are not allowed to have more than the roof they have today with PV) and to get the grid company on board, so that energy that goes to consumers does not have to go out to the grid, but directly to the residents (by joint measurement). They must try to distribute the gains to everyone. Better storage facilities in the winter with hydrogen to compensate for the sun's absence would be good. The residents

are committed, which can lead by example to follow. Terje has visited various housing associations to talk about the project and they are profiled on the Oslo municipality's website and there will be a story in the news magazine Teknisk Ukeblad. But the housing cooperative will not be able to produce enough electricity to cover the entire consumption of the housing cooperative, but if you can reduce the pressure for over 700 units, that will be good. There is talk of 17 roofs.

The presentations were followed by a round of questions and discussions. Here, various aspects of regulation and the need for 3rd party players in the flexibility market were addressed. Aspects related to social acceptance around hydrogen were also discussed. Here there are good technical solutions and projects from, among others, Sweden (in connection with a kindergarten).

Session 2

Mapping of people's perspectives on energy on Utsira/ Beatrice Rossebø Danielsen, architect and site developer Byantropologene

The consultancy company Byantropologene (urban anthropologists) are working on various citizen involvement projects such as Utsira (island municipality with approx. 200 inhabitants and local onshore wind production). The project was commissioned by the wind power company Solvind that have ownership to the two wind turbines on Utsira. The purpose of the project is to highlight attitudes with regard to the application for extending and refurbishing the wind power installations at Utsira. The focus was not on offshore wind power in this study (which is also planned for in Utsira North). The power system is important and fundamental to everything in society. And Byantropologene talked to the residents about their opinion on what the power system means to them. This is important for site development. They had a stand at the local grocery store with coffee and asked people what they thought about Utsira's future, what challenges they experienced in society today and what they think about the wind turbines. The goal was to find out if there is anything that could be compensated to address challenges existing today. They also had a workshop with elementary and middle school. They had participatory observation at the knitting café to understand a little more about the dynamics of the local community.

What do the population of Utsira Island think of a changing Utsira? The biggest concerns were related to population and the future. A desire for more jobs was expressed. What would replace the old fishing community?

Utsira has an ambition to be a zero-emission society. This was an abstract goal for people. They were concerned that resources must be utilised well. Wind power was a concrete project to deal with, tangible. It was important to have the energy supply and not become a burden nationally. This is important in order to maintain municipal status – without it, the school disappears.

There were various concerns, a lot on the visual effects of onshore wind power and what the consequences of that would be when you go from a few to many. Examples of statements: "It's renewable energy that's most important – it's more important than being able to see the wind turbines. It's much better than oil!" "The worst thing is really the condescending attitudes towards the people who live here and the municipal council from the wind power resistance – how can you be so stupid and let this happen?" Now the debate is characterized by violent words. The schoolchildren, who will grow up in this, expressed some of the same things as the adults. Solvind was seen as an important contribution to society.

CLIMATE BEST and transfer of local energy models from Norway to Slovakia / Erik Eid Hohle, CEO Energigården

The CLIMATE BEST project is about training and disseminating knowledge to Slovakia on the Energigården (bio-energy foundation) as a model, a foundation that will promote best solutions and spread knowledge. The project is financed by EEA Grants. An important goal is to transfer knowledge about local production and use of renewable energy. Slovakia has a different mix between heat and power than Norway. Bioenergy accounts for about 60% of renewable energy. Heat in end-use dominates bioenergy both in Norway and in the world. Slovakia has a lot to teach us in Norway, for example when it comes to systems for energy-flexible heating, hydronic heating in central, local and district heating plants. The BIOCLIMATIC Park in Rajec, Slovakia, has a renewable energy training and demonstration park. A wind turbine collects water for fruit and berries, which has been crucial during the dry summer of 2022. An area of the Carpathian Mountains has significant damage from spruce bark beetle. This damaged wood material is used for pellets for heating. The BIOPEL pellets factory supplies the Zilina region, northern Slovakia. Pellets are the main source when it comes to their end use. Important topics are how to get a more efficient logistics (from stump to hot rooms), the combination of bioheat and solar energy, how a center can be used for teaching and training.

The players such as Energigården disseminate knowledge from municipalities, the agricultural industry, energy plants, waste plants, biofuel and bioheat pipes and customers.

The presentations were followed by a round of questions and discussions. Here, various aspects of choosing energy carriers for renewable energy communities and biodiversity were addressed. Furthermore, it was discussed how the Norwegian authorities' focus on offshore wind affects social acceptance for wind power and renewable energy communities such as the one at Utsira. It was also discussed how the Norwegian regulations are comprehensive than Slovakia when it comes to power production. The market economy is not as well suited to basic goods such as food and energy. This requires different management models for the end user of energy than we have today. One of the things Energigården are trying to look at in Slovakia subsidy schemes for increased production of energy, but also savings. In Norway, we should look more at electric power savings than we do.

Concluding discussions and mingling

The meeting concluded with a brief discussion on what are likely models for renewable energy communities in Norway and what is the status today for decision-makers' willingness, interest and knowledge to facilitate renewable energy communities. Statkraft briefly presented one of its projects at the industrial cluster, Tofte Energihub. For such models, it is important to have opportunities for net metering of production and consumption. This is not always the case when you have an industrial area. One can look at the possibility of merging properties. The capacity limit of 500kwh proposed in RME's proposed new regulations for sharing self-produced electricity within the same property was also commented on. It facilitates housing cooperatives, but not business development.

Furthermore, it was discussed that there is no market for purchasing flexibility from the grid owner. There may be a need for this in the future. Achieving a comprehensive scheme for grid owners can enable flexibility to be offered. It's hard to do that without seeing that there's a source of income on this. When Lohøgda considered battery storage of self-produced electricity, it was not enough to even out the consumption, which is a great need in Norway. We had to have some sales opportunities for example

to the web owner. There are big differences between different grid companies when it comes to entering into cooperation.

The meeting ended with mingling and snacks.

CONTACT

COME RES Project

info@come-res.eu

www.come-res.eu

PARTNERS



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953040. The sole responsibility for the content of this document lies with the COME RES project and does not necessarily reflect the opinion of the European Union.