# Factsheet #02

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COME RES

Advancing Renewable Energy Communities

# Municipalities and renewable energy communities – a perfect match

Best practice renewable energy communities (RECs) are on the rise throughout Europe. Even before the gradually improving enabling framework induced by the Clean Energy Package, energy communities had been sprouting up across most European countries. Now, with the transposition and implementation of the recast Renewable Energy Directive (RED II) as well as the Internal Electricity Market Directive (IEMD), new energy communities are developing at a pace never seen before.[1] Based on an in-depth analysis of 21 good practices, the COME RES team has distilled the list into 10 best practice cases with considerable adaptation and transferability potential. The featured energy communities possess different socio-economic benefits, the most prominent of which are to ensure adequate participation and (financial) (co-) ownership, the promotion of a self-sufficient and environmentally conscious lifestyle, the creation of more social cohesion, as well as the lowering of energy bills and tackling energy poverty.

Every energy community analysed operates within its own particular regulatory context, which means that not only the business rationale, but even the overall ease of operations, can differ significantly. A common denominator and shared driving force can, however, be identified in nearly all cases: the presence of municipalities. Municipalities are key participants and enablers of the renewable energy communities in the good practice list and have an intrinsic interest in creating socio-economic benefits as part of their local energy and climate planning.

Keep reading to discover more about the COME RES best practices and the motivations and actions of the municipalities involved.

1 For more information on the potential of RECs in the COME RES countries, see factsheet #1.

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"Good Practice Portfolio of Renewable Energy Communities"
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## BELGIUM

### Ecopower

The first milestone of Ecopower's successful journey was winning a tender issued by the City of Eeklo that allowed the renewable energy cooperative to build three wind turbines in 2001-2002. **The city was looking for a partner for a wind farm on its land to initiate citizen participation**. Since then, several cities and municipalities have followed this example. Ecopower is now active at national level and supplies green electricity to the Flemish region with renewable energy production installations across the whole of Belgium. Now, it is a large-scale energy cooperative based in Flanders, bringing together people investing in a variety of renewable energy technologies and performing a broad range of services such as energy production and supply, energy efficiency, and providing advice on new technologies for members. It produces 100 GWh/year via wind turbines, PV panels and small hydro, 20.000 ton/year wood pellets made of locally sourced wood and supplies green electricity to 1,62% of all Flemish households. Ecopower brings several social benefits to the local community where it operates, since its membership is open to people from different socio-economic backgrounds, including vulnerable and low-income groups. It contributes to the reduction of energy poverty because it supplies green electricity at a lower price. It has more than 60.000 members.

### ZuidtrAnt

ZuidtrAnt is a local-level energy cooperative, founded in 2016, and active in the cities and municipalities in and around the southern regions of Antwerp. It engages in a broad range of activities including: renewable electricity production (PV), district heating network (waste heat), near-zero energy building renovation advice, school workshops on energy and climate, shared electric mobility and other climate awareness raising activities. ZuidtrAnt also carries out projects in close cooperation with municipalities. For example, it **supports municipalities to implement actions in the framework of their energy and climate action plans and increase the proportion of renewable energy production on their territory**. The cooperative provides the municipalities with affordable renewable energy for public use (e.g. through solar roofs on public buildings). The local authority helped to promote the cooperative and, consequently, this resulted in increased public support for the local renewable energy projects of ZuidtrAnt, a broader outreach to potential members, and several contracts with local companies for generating solar energy on public roofs.

**Municipalities can act as the primary enablers of RECs, making public space available and offering energy communities the opportunities to participate in public tenders.**

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## GERMANY

### Grenzland Pool

Located in the municipalities of Ellhöft, Westre and neighbouring villages in Schleswig-Holstein, this pool of community wind and PV farms in the district of Northern Friesland provides profitable, clean energy investment options to local citizens, while also promoting the sustainable development of the local area. The five wind farms are all individual companies that are 100% owned and operated by local farmers, residents and other community stakeholders, with most of the cases sharing the same managing directors. The main activities consist of the production of electric power and the sale of electricity. In most cases, the electricity is sold to a direct marketing company which then re-sells the electricity to the regional power exchange. Additionally, the operator receives a market premium from the distribution system operator. Some of the operating companies use parts of their own-produced electricity to convert it into green hydrogen using a local electrolyzer. The hydrogen is then used either for power-to-gas or to fuel the regional hydrogen vehicle fleet. Municipalities (mayors, councils) are strongly engaged in these projects since they provide very concrete local benefits e.g. through the generation of stable business tax revenues which are allocated fairly between the municipalities. **The municipalities participated financially in the projects to show their commitment and increase the trustworthiness of the initiators.**

**Municipalities can profit financially from engaging with RECs e.g. through the generation of stable business tax revenues.**

## ITALY

### Energy City Hall REC-1

This REC, established in 2020, is a key example of how municipalities can establish energy communities themselves. The Municipality of Magliano Alpi, Italy, initiated the energy community together with five private citizens, with a 20 kW PV installation on the roof of the city hall. More capacity is currently underway. The REC, of which the Mayor is the president, is equipped with an Internet of Things (IoT) platform to manage energy flows and to allocate benefits coming from shared energy to its members. The REC aims to make the city hall, the library, the gymnasium and the municipal schools self-sufficient. Another objective is to **exchange surplus energy** between the participating families and small businesses. **A general reduction of energy costs for those participating is another benefit, contributing to the alleviation of energy poverty in the area**. A charging station for electric vehicles (EVs) is available for REC members. The municipality is additionally supporting the creation of a 'community operational group', a legal entity that aims to create a short local supply chain involving coordination and collaboration between technicians, designers, installers and maintenance workers. The REC therefore also functions as a catalyst in bringing together the skills of the local area.

**Municipalities have much to gain from setting up and leading RECs in the electricity as well as heating & cooling markets. Not only can they save costs and work towards achieving their climate and energy targets, but they can also protect vulnerable households.**

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## LATVIA

### Energy communities in apartment buildings

The Municipality of Marupe has positioned itself as a green municipality focused on smart solutions and actively organizes public campaigns on the topic of green energy. In particular, the municipality promotes energy communities as part of its Sustainable Energy & Climate Action Plan (SECAP). In collaboration with the Riga Region Planning Authority, the municipality facilitated the installation of PV panels on apartment buildings in collaboration with the buildings' homeowner associations. 85% of the investment in each of the pilot projects was funded by the EU project "Energize Co2mmunity" and the remaining 15% was paid through national financing. The owner of the installed solar equipment, Riga Planning Region, lends the equipment to the Municipality of Marupe, which in turn makes it available to be used by the homeowners' associations. After this tripartite agreement ends, the PV installations will become the property of the homeowners' associations. Residents of the buildings benefit through rebates on their energy bills.

**More and more municipalities are setting concrete targets for the promotion of community energy projects and make them a firm part of their long-term climate and energy planning. This also sends a strong signal for anyone willing to found a REC in future.**

## NETHERLANDS

### Energy gardens

Energy gardens is a concept of the Dutch non-profit foundation, Nature and Environmental Federation (Natuur en Milieufederaties - NMF), which designs and creates multifunctional and biodiverse energy parks for and with the local community. The energy parks are open to the public, offer recreational and educational services, and involve the local community from design to implementation and maintenance. Currently, three energy gardens are under development: Mastwijk, Assen-Zuid and De Noordmanshoek, and there are multiple ways for citizens to participate. For each energy garden, the organizational structure/ownership model may turn out be different, depending on local circumstances. The developer can be a local energy cooperative or a private company, or a joint venture of these two. The management and maintenance of the energy garden will be allocated to a management foundation in which the developer, the NMF and the local community are represented. In this way, the identity of the energy garden and involvement of local volunteers is secured. During the co-creation design sessions, the immediate neighbourhood is represented, as well as local stakeholder groups such as nature and environmental associations. For now, the energy gardens are focussing on solar energy on land. Data about planned capacities are available; the energy garden in Mastwijk will have a capacity of 10.9 MW (occupying 12 ha), Assen Zuid will have a capacity of 21.3 MW (23 ha), and De Noordmanshoek will have a capacity of 7.8 MW (8 ha). The municipality is regularly involved in developing a particular energy garden, whether through finding suitable locations or organizing co-creation activities.

**Municipalities are key players in bringing together different types of stakeholders, even without a financial commitment. They promote innovation through co-creation processes e.g. Living Labs in many different fields including citizen engagement in the energy transition.**

## NORWAY

### Røverkollen housing cooperative

This housing cooperative provides renewable electricity to residents, so that they can charge their electric vehicles (EV) at a reduced cost and provide predictability and security concerning charging needs. On August 2021, 8 out of 10 new cars sold in Norway were EVs and the City of Oslo is very interested in fostering further uptake of electric transport and therefore increasing the flexibility in the power system to reduce peak loads. The project entails renewable electricity production through rooftop solar PV and a smart EV planning system for charging, which balances demand with available supplies to ensure optimal energy efficiency and avoids peak demand in the Oslo electricity system. The energy community brings together all residents of the Røverkollen housing cooperative.

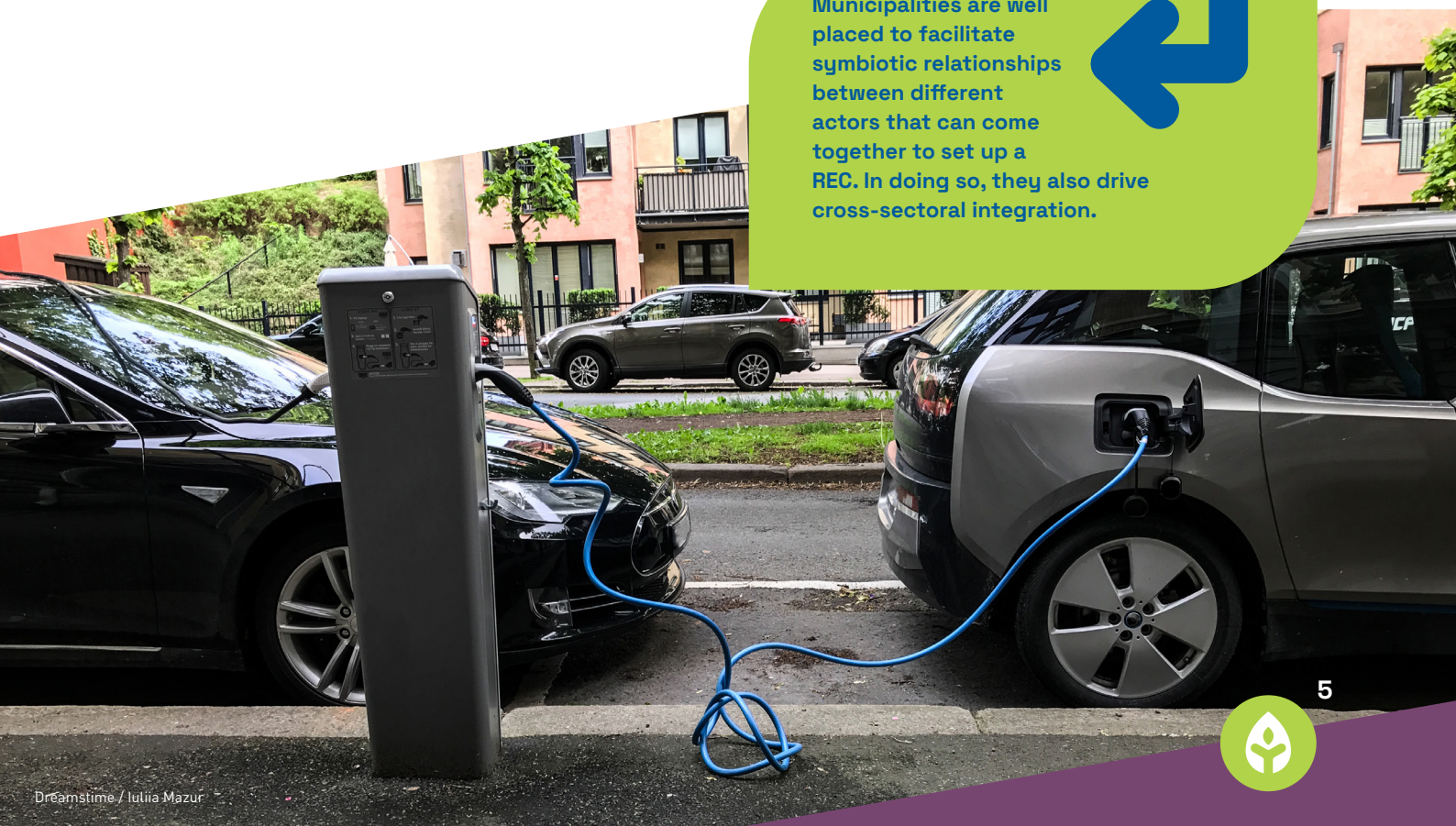
**Municipalities have an interest in managing an increased share of renewables on the local grid. Since many RECs are involved in the promotion of electric car ownership, they can contribute to an increase in local grid flexibility.**

## POLAND

### Energy Region Michałowo

The Energy Region Michałowo is a dynamically developing local energy market. It balances energy demand and production, and thereby establishes cooperation between local energy producers and consumer entities. It is an energy cluster, which is based on is a civil law agreement – both a cooperation agreement and a commercial partnership between its participants. It is not a legal entity, but includes a large membership base: natural persons, local government units, entrepreneurs, research institutes and universities. It is technology-neutral and focuses on energy generation and balancing, within a distribution network with a rated voltage lower than 110 kV. Its main societal value is that it contributes to the local economy and has an open and voluntary membership structure. This energy cluster is an example of how to achieve a good economic profitability of a biogas plant while providing a wide spectrum of benefits to the society and local entities. A key driver for the Michałowo cluster was the need to improve the economic efficiency of an agricultural biogas plant. **Through an agreement with local authorities, the producer of biogas receives additional revenues from the sale of heat, and the municipality halves the costs for heating the swimming pool and the school complex.** The network is additionally prepared to facilitate the integration of other entities and technologies such as solar energy.

**Municipalities are well placed to facilitate symbiotic relationships between different actors that can come together to set up a REC. In doing so, they also drive cross-sectoral integration.**



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## PORTUGAL

### Energy community Agra do Amial

The Energy community 'Agra do Amial' is located within a micro-area of eight apartment blocks and a public school in Porto. It follows an effective approach of tackling energy poverty within social housing infrastructure. Electricity will be generated from PV panels installed on the roofs and consumed within the community, with any excess being sold to the grid. Energy storage and electric vehicle charging stations will be installed and energy consumption / savings advice carried out. Being developed within a social housing neighbourhood, this REC will involve 181 families as well as young consumers. It will provide rebates on the energy bills of the families. Within the first five years, the electricity generated will be distributed free-of-charge to the members of the community. After that, the electricity produced locally will be supplied to the members of the community at a lower rate than from traditional suppliers. The REC involved the local authorities in its implementation because they own and manage a large number of buildings (administrative and social housing). There is large potential for transferability within the City of Porto and to other municipalities in Portugal, due to the relevance of energy poverty overall in the country and the fact that all municipalities own and manage social housing buildings. This might be an example to follow in to other areas with social housing infrastructure.

**Municipalities have the possibility to (re-) create a closer bond between citizens and public infrastructure. RECs can also be an enabler of public-private partnership and investments.**

## SPAIN

### COMPTEM – Enercoop

This REC was founded as a collaboration between the energy cooperative Enercoop and the local government of Crevillent as a village-wide energy community. Currently, 65 households are participating, but it is envisaged to include up to 30,000 locals in the energy community in the long-run. Activities include collective self-consumption, storage, the optimization of the energy and economic flows of the installation, electricity-sharing using blockchain, and a mobile app for citizens with information about their energy use. **To lower the participation barrier for citizens, no initial individual investments are needed.** Instead investments come from Enercoop as well as via an EU funded project and a loan; ultimately members make their investments by repaying the cooperative through the reimbursement of the rebates in the electricity tariff. The energy community produces energy savings of about 15-20% for the involved households thanks to limiting energy losses and optimization of energy flows. It also produces rebates in the energy bill of consumers which will be used to repay the loan. The pilot project has given value to a previously unused plot of land, in which, apart from the PV solar panels, green spaces and sport facilities have been built. The expansion of the REC to the whole village will mean using currently empty roof space and public lands. The municipality provides administrative support to Enercoop. The municipality will also allow for the installation of PV solar panels on local government roofs and has already permitted public unused land to be used for the construction of larger solar energy generation facilities. Additionally, the regional government provided two e-mobility charging stations.

**RECs typically have a very low financial entry barrier allowing many residents of a municipality to participate and to receive benefits such as lower energy bills. It is essential that municipalities make public space available for the installation of the required renewable energy infrastructure.**

Comunidad energetica de Crevillent, Realengo / Grupo Enercoo

## OUTLOOK

With the increase of RECs across many European countries, the considerable benefits offered by RECs are becoming plainly evident. As exemplified by the COME RES best practices, RECs represent a key, powerful instrument for municipalities, since their purpose aligns perfectly with the mission of local governments: to secure a socially-inclusive and just local energy transition. While Member States create enabling frameworks, it remains imperative that financial and regulatory capacity is made available to municipalities. This includes developing the skills of municipal staff, allowing them to adequately take up their role as promoters of RECs. As community energy continues to grow in popularity, it will be exciting to see how municipalities make RECs an integral part of their climate and energy plans (e.g. SECAPs), demonstrating, once more, the instrumental role of local governments as enablers of innovative action in the energy field.

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