Deliverable 2.3 REScoop – Municipality Approach



Mobilizing European Citizens to Invest in Sustainable Energy

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What REScoops are and what they do

In the coming decades, we will face an energy transition. Our energy system will shift from one based on fossil and nuclear fuels to renewable energy, from centralised to decentralised production, and from a system that wastes energy to a system that uses energy in an efficient way. This transition will require a considerable investment that will be paid for by citizens: as consumers, as tax payers or as money savers. That is why citizens should be at the heart of this energy transition. They should have the opportunity to control their energy production, transportation, distribution and supply.

REScoop is short for Renewable Energy Sources cooperative and refers to a business model where citizens jointly own and participate in projects for sustainable energy (SE). That includes both renewable energy (RES) and energy efficiency (EE). These initiatives are also referred to as local energy communities or community energy projects. REScoops typically respect principles that have been outlined by the International Cooperative Alliance: economic participation (citizens buy a share of the cooperative and get access to its products or services), democratic ownership (one person, one vote) and autonomy (cooperatives are not controlled by private companies or public authorities). Research for the European federation of renewable energy cooperatives, REScoop.eu, shows there are now over 3.500 European REScoops who jointly represent over a million citizens. That may seem a lot but their potential is even bigger. By 2050 half of the European population could be producing renewable energy, either at home by installing solar PV panels or by joining a collective scheme such as a local energy communityⁱ.

REScoops typically emerge in countries with supportive legislative frameworks for communityowned RES generation like Denmark, Germany or the Netherlands. They are much harder to find in Central Eastern Europe, not least because former communist regimes took control of the cooperatives. That is the reason why the word "cooperative" is still often associated with communism.

Other factors that might stand in the way of citizen engagement in the energy transition in Eastern Europe are financial constraints, unsupportive legal frameworks and non-liberalised energy markets. Since in the past few years support for renewable energy production has been going in most EU Member States. Many REScoops have been forced to extend their scopes and develop new business models and activities. As a result, REScoops are no longer only producing renewable energy. Amongst the members of REScoop.eu, we now also find suppliers (of electricity, wood pellets, biogas, etc.), aggregators, balancing companies, distribution grid operators, e-car sharing cooperatives, energy monitoring cooperatives, community-owned microgrids. All of these initiatives deploy demandresponse and smart grid integration tools or do peerto-peer energy exchanges based on blockchain technology. Some REScoops have also shifted their attention to energy efficiency. They support members and local authorities - such as regions, provinces, cities and municipalities - to save vast amounts of energy.

Why local authorities should work with REScoops

With the publication of the Sustainable Development Goals - the so called "SDG's" - back in 2015, the United Nations clearly recognised the role for local authorities in the transition towards a more sustainable future. The SDG's clearly acknowledge the right to clean and affordable energy for all and sustainable cities & communities. Through the Horizon 2020 programme, the European Commission has adopted these aspirations in its current and future European policy framework. To empower cities and communities in taking local climate and energy actions, the Commission also launched the Covenant of Mayors, a growing network of now over 7.000 local and regional authorities from across 57 countries world-wide that offers technical and methodological support to write and implement sustainable energy and climate actions plans. These action plans translate the political commitment of a signatory in practical measures and initiatives.

Unfortunately, lack of technical expertise, insufficient budget and public support stands in the way of a successful implementation of the sustainable energy and climate action plansⁱⁱ. And that is exactly where energy cooperatives can come into play. REScoops and municipalities are "natural allies" who both serve the same stakeholder; which is the citizen. REScoops from across Europe are keen on working with local authorities and some pioneers have already developed innovative ways of collaboration. Local authorities often argue that they lack technical expertise to fully translate their political engagement into concrete actions. As a consequence, they rely on private partners. REScoops can support them to identify, develop and finance sustainable energy projects with a local character. So far, the European REScoops have developed projects with an estimated production capacity of 4-5 GW.

Furthermore, local authorities often struggle with insufficient funds to execute sustainable energy actions plans. In Belgium for example it is assumed that the energy transition to 100% renewables would cost somewhere between 300 and 400 billion euroⁱⁱⁱ. Although that may seem a lot of money, it will and cannot stop the transition. The question that remains for the Belgian citizens is: 'Who's going to pay for it? Are we going to rely on multinationals or foreign state-owned utilities? Or, are we going to mobilise our regions, provinces, cities, municipalities and citizens?' REScoops typically provide consumers with the choice of using locally produced renewable energy at the fairest price. When the energy community owns the infrastructure, any benefits or savings are passed on to the members, meaning directly to the consumer. Imagine how much money we could keep within our communities that is now leaving our municipality, region, country, EU for purchasing gas, oil, coal, uranium if we just took matters into our own hands. All we need to do is mobilise the funds within the local community and finance our own energy transition.

Local authorities also find it difficult to create a sense of urgency amongst their citizens, to mobilise them and to gain public support for renewable energy projects within their communities. Energy cooperatives typically foster social acceptance for sustainable energy. Open membership, citizen participation, empowerment, long-lasting local ties, democratic ownership, transparency and a fair return on investment are central themes within an energy cooperative.

REScoops aim to maximize local value (rather than profits) to support the social and economic welfare of the local communities in which they operate. It has been proven that community-owned windfarms in Germany generate eight times more local added value than commercially-owned projects.

Many REScoops also have a social aim, which includes support of community infrastructure, improving energy efficiency in public buildings, and fighting against energy poverty. Local ownership also promotes a circular local economy, where profits are kept within the community to promote other objectives of the energy transition, such as energy savings measures and public building renovations.

Local authorities and their role in the energy market

Public ownership

Since 1880, the production and distribution of electricity quickly spread across Europe. The initiative primarily came from private investors in the more populated regions whilst rural regions were served by local authorities or cooperatives. This decentralised scene changed dramatically after World War II when electricity related activities were centralised and often nationalised. In some European countries municipalities kept a role, e.g. the "Stadtwerke" as they are referred to in Germany. Energy production, transmission, distribution and supply was widely recognised as a something that urged public exploitation and governments at all levels took up the glove. Despite liberalisation and unbundling efforts in the 1990s and 2000s, many municipal companies withstood and still act as important players in today's energy market. As a consequence, there are municipalities who own sustainable energy projects themselves, either directly or through municipal companies.

Stadtwerke Munich GmbH for instance is owned by the city of Munich (Germany) and supplies energy (electricity, gas and district heating) to over 750,000 households in the region. By 2025 the city would like to produce as much sustainable energy to power the entire city. That would make Munich the first city with over a million citizens to achieve this ambitious goal. The city owns and controls the municipal company and finances the investments.

In Belgium budget limitations, legal constraints and search for economies of scale forced local authorities after WWII into several inter-municipal cooperative societies for the supply of energy, most of the time in a 50/50 deal with one of the private producers. About 20% of the municipalities joined in 100% publicly owned cooperatives or in a few cases stayed autonomous. In the 1980's the private producers fused into Electrabel and focused on producing nuclear electricity. The liberalisation of the energy market, enforced in the late 1990's by the European Union led to a complete reshuffle of the Belgian energy market: Electrabel (now Engie, France) retreated from the distribution grid operator (DSO) that now all are 100% owned by municipalities.



In **Flanders** (Belgium) the group of DSO's that used to be linked to Electrabel (Eandis) and the group that used to be purely municipality owned (Infrax) decided now to join forces into Fluvius. This results in a market where private companies invest in the production of energy and the public sector focuses on the distribution.

Private ownership

For various reasons local authorities may decide not to participate in the projects themselves. Instead, they may rely on a private partner. That is particularly true for services that require capital intensive investments like sustainable energy projects. In that case, local authorities can and should rely on REScoops rather than commercial companies for obvious reasons mentioned above. Let us now have a look at some examples.

Back in 2009 a group of citizens from **Saerbeck** (Germany) came up with a genius plan to tackle climate change and to become a self-sufficient and 100% sustainable community by 2030; an ambitious goal that they already achieved by 2012. Backed by the municipality they created a local cooperative that could finance community-owned solar PV-panels on some public buildings in the community. Later on, the people from Saerbeck went further: they transformed a former munition depot from the army into an innovative energy park where they now generate sustainable energy from various sources. Wind turbines, solar PV-panels, biogas provide enough heat and electricity for the entire community.

In **Odenwald** (Germany) the local municipality supported the foundation of a local energy cooperative that has raised over 10 million euro from local citizens to finance projects within the community. An overall budget of 36 million euro has so far been invested in RES production installations so that the members could get access to locally produced energy from renewable sources. The revenues were then partly used to construct the so called "House of Energy", a former brewery that has been transformed into a space where public administration institutions sit side by side with energy consultants, architects, craftsmen and mortgage lenders willing to answer customer questions relating to energy. The House of Energy also has a canteen, a kindergarten, parking lots and public event and exhibition spaces.

Yet another example is the case of a local football club in **Grossbardorf** (Germany) that needed a roof on its stands but lacked the funds to make the investment. The municipality actively supported the creation of the Friedrich Wilhelm Raiffeisen Energiegenossenschaft Großbardorf, a local energy cooperative that could make the investment with



Public/private ownership

In some cases, municipalities set-up public private partnerships which allow shared ownership between public and private partners. So far, public private partnerships have led to interesting collaborations between REScoops and municipalities.

Amel & Bülingen (Belgium) are two municipalities in the German speaking region of Belgium that decided to initiate and participate in a large wind farm on municipal property. 50% of the project will be public and owned by the municipalities (25% Amel and 25% Bülingen). The remaining 50% will be privately owned by two local energy cooperatives. 25% will be owned by <u>Courant d'Air</u>, 25% by <u>Ecopower</u>. A Special Purpose Vehicle (SPV) will be put in place to accommodate the Public Private Partnership.

In **Dour** and **Quévrain** (Belgium) the cooperative Emissions Zéro (Belgium) set up a new legal form (SPV) for the exploitation of two wind turbines that are part of the largest onshore windfarm in Belgium. This SPV is a cooperative itself and is called "Moulins des Hauts Pays". Half of the shares are in the hands of local citizens through <u>Emissions Zéro;</u> the local municipalities own the other half. Profits are thus equally shared between the three investors. The two municipalities use these revenues to finance other sustainable energy projects and other projects that benefit the whole community. This way everybody shares in the profits: not only the citizens that participate in the REScoop.

How municipalities can work with REScoops

When selecting a private partner to develop and/or execute sustainable energy action plans local authorities may prefer working with a local energy community (REScoop). Some municipalities, provinces and regions immediately include direct citizen participation as a prerequisite in their public tenders.

In **Wallonia** (Belgium) project developers of wind energy projects are requested to offer 24.99% to local citizens and 24.99% to local authorities. The so called "cadre de reference" is not a law but a recommendation that is widely accepted and applied within the region.



Similar recommendations are being put forward by two Flemish provinces. In **East Flanders** and **Limburg** (Belgium) private wind projects are recommended to disclose at least 20% to local citizens and to the local municipality.

Similar requirements are adopted by a wide range of Flemish municipalities. In **Leuven**, Oud-Heverlee, **Torhout**, **Laarne**, **Tienen**, **Scherpenheuvel-Zichem** and **Kortrijk** (Belgium) the city council decided that renewable energy projects in their municipality needed to disclose up to 50% direct participation of its citizens according to the principles of the <u>International Cooperative Alliance</u>.

In 2017, the municipality of **Kuurne** (Belgium) was looking for a private partner to put solar PV-panels on a public building and to set-up a local campaign that would trigger solar investments by citizens. Allowing the local citizens to participate in the project ended up being an important topic in the call for tenders and resulted in a collaboration with the cooperative <u>Beauvent</u>. The cooperative will now install 500 kWp and help the municipality in saving 5-10.000 euro per year. The municipality is now actively supporting the fund-raising campaign.

Some more inspiring examples of collaborations between REScoops and local authorities

Back in 1999, Ecopower won a public tender in the city of Eeklo (Belgium) and got the chance to invest in its first 3 big wind turbines. The city council explicitly requested in their tender procedure that local citizens should get the chance to participate and co-own the installations. Together they informed and evolved a wide range of local stakeholders (citizens, environmental organisations, advisory committees, the municipality council, etc.) which resulted in a 'sustainable energy and climate action plan "avant -la-lettre" that was highly supported within the community. Cooperative wind turbines were part of that plan and generated revenues that could then be used to finance the wage of a part-time energy expert. This person now works on behalf of the municipality and initiates new RES projects or EE measures (district heating network) in public buildings. He also supports local citizens who want to save energy in their private homes. A similar model was put in place in Asse (Belgium) that got technical support from Ecopower to write their sustainable energy and climate actions plans. This resulted in the construction of 4 wind turbines. This model has considerable replication potential

EnerGent, a local cooperative from Ghent (Belgium) also took action on energy efficiency and teamed up with the city to execute the sustainable energy and climate action plan. Back in 2015 the co-op provided a 50,000 € loan to finance double glazing in an important monument right in the historic city centre. With financial support from the city, EnerGent also initiated a programme to enhance collective energy retrofits in private homes. Energy experts help citizens to identify the needs, prioritize, compare offers and follow up on the construction works. Through Gent Zonnestad (Ghent Solar City) they are now maximizing the production of renewables in a neighbourhood by installing solar PV-panels on public buildings and private homes. Through "Buurzame Stroom" they are also investigating whether citizens can share solar energy with one another. The latter is also linked to the WiseGRID Horizon 2020 project that tries to develop wide scale deployment of integrated smart grid solutions in four EU countries in order to proof that the decentralized energy system with citizens at its core is actually feasible and economically viable.

Last year, Ecopower was named strategic partner of the city of Leuven (Belgium) after winning a public tender procedure to find a strategic partner to accelerate the energy transition. Ecopower teamed up with a consortium of local organisations and companies and signed up to help local citizens, authorities and companies save energy and produce energy from renewable sources. An essential part of the proposal was that Ecopower would offer local citizens the chance to participate in the projects by means of joining a local energy community (REScoop). LICHT-Leuven was founded as the project development unit (PDU) to put the plans to action in Leuven. With support from the province of Vlaams-Brabant, the PDU now develops a holistic approach for the entire province by composing a sound investment portfolio of RES and EE projects that will be introduced as an ELENA project to the European Investment Bank. In an attempt to maximize RES production, the unit identifies suitable roof-tops to install solar PV-panels and efforts will be made to save energy in private homes and public buildings. The city of Leuven won the European Leaf Award 2018 for its ambitious and participative approach.

Another interesting case is the collaboration between four cooperatives from **Flanders** (Belgium); <u>EnergielD</u>, <u>CORE</u> (a student's cooperative from Leuven) and *Educatief Centrum Paddenbroek* are teaming up with Efika in what is referred to as the "<u>CAVES project</u>". This ambitious project aims to develop a methodology to engage a whole range of local stakeholders (cf. parents, school management, neighbours, etc.) in a cooperative that can



implement energy efficiency measures and finance energy retrofits in local schools.

Another REScoop, <u>BronsGroen</u>, recently conducted energy audits in five public primary schools in the city of **Tongeren** (Belgium). They made observations, gathered consumption data and provided solutions to lower their levels of consumption on water, heat and electricity.

Through <u>Klimaatscholen 2050</u>, a consortium of five REScoops from **Flanders** are assigned to help the catholic secondary schools to save vast amounts of energy in their buildings by initiating energy efficiency measures and by putting solar PV-panels on their roofs. The funds that are needed to make these investments will be raised from local citizens (e.g., parents). The REScoops will be responsible for the project exploitation, so that the participating schools get a reduction on their energy bills.

Pajopower was founded in 2014 as a Belgian cooperative that aims to support sustainable development in the Pajottenland & Zennevallei (Belgium). In collaboration with the NGO Kyoto in het Pajottenland they sensitize local citizens for a more rational use of energy in their private houses. The cooperative provides consultancy services by means of independent energy experts who conduct energy audits upon request. The audit report prioritises the measures that are needed to improve the energy efficiency of the homes. Measures typically include rooftop insulation, double glazing, heat pumps, pellets, solar PV, etc. The energy experts calculate the investment that is needed, as well as the foreseen savings. This allows the expert to calculate the pay-back time for the initial investment. The expert also helps the citizens to find good contractors and leads them to potential subsidies for their investment. The expert finally monitors the construction works. Note that it's the citizens themselves who finance the investment, the facilitation service is subsidised.

In the city of **Halle** (Belgium), Pajopower recently replaced 445 traditional public street lights by LED. The investment (euro 225.000) was financed by the cooperative and helps the city to save both energy and money.

How REScoop MECISE will foster Public Private Partnerships

REScoop.eu has been operational since 2013 and throughout the years it identified some bottlenecks when it comes to financing an energy transition that would lead to energy democracy: -We noticed that renewable energy projects typically require large investments at the beginning, making it hard for starting REScoops to launch their first projects. Our experience is that local citizens come on board more easily once the project is operational and people can actually touch/see it. Established REScoops - on the other hand - often raise funds easily but sometimes they lack good projects, leaving them with unused funds in their bank accounts.

-We noticed that individual REScoops often lack the financial means to raise sufficient equity to reach the financial closure when doing big projects. As a consequence, they are often forced to disclose part of the projects to limited companies. This has been the case for Zeeuwind and Deltawind for instance, two local REScoops who managed to develop a 102 MW wind project in the Netherlands worth EUR 215m (cf. Krammer). The two cooperatives were initially forced to sell 50% to the wind turbine manufacturer simply because they could not raise enough equity themselves. Now that the project is actually constructed and the wind turbines are there, the two cooperatives organised a second financing campaign. In only two days, they managed to raise over EUR 10m to buy-out the wind turbine manufacturer. Most cooperatives are not that lucky and either lose their part of the project or they have to buy-back their share at a considerably higher price thus losing important value that could otherwise be used for local development. Doing local and thus smaller projects typically leaves REScoops with less economies of scale, less power in negotiations with suppliers and considerably higher interest rates for their loans.

-We noticed that local authorities – especially municipalities - face difficulties in writing, executing and financing sustainable energy action plans despite their political engagement and good intentions. An evaluation of the Covenant of Mayors clearly shows that local authorities lack technical expertise, financial resources and public support for sustainable energy projects.

With support from the Executive Agency for Small and Medium Sized Enterprises (EASME) of the European Commission, the European federation of renewable energy cooperatives managed to come up with a solution that can answer these challenges.

With <u>REScoop MECISE</u> – which stands for European Mutual for Energy Communities Investing in a Sustainable Europe – the European federation of renewable energy cooperatives (REScoop.eu) will launch mid 2018 a European Cooperative Society (SCE) which will be open to energy cooperatives, as well as municipalities and institutional investors.



REScoop MECISE will gather funds and take ownership in local RES and EE projects. Once these projects are up-and-running, REScoop MECISE will support a local energy community to raise funds from local citizens and replace the Mutual. That is how the REScoop MECISE SCE will maintain its revolving character.

By aggregating funds from cooperatives, municipalities and institutional investors, citizens will finally get the chance to do big projects. Upscaling will automatically lead to economies of scale and gains on purchasing power. Upscaling projects to over EUR 25m will also make them eligible to soft loans from the European Investment Bank.

Finally, REScoop MECISE will foster collaborations between energy cooperatives and local authorities, particularly by helping the latter overcoming the challenges they face. By aggregating RES and EE projects at the local level, municipalities and REScoops could reach the EUR 30m threshold that is required to apply to ELENA and get grants for technical assistance on the implementation of energy efficiency, decentralised renewable energy and urban transport projects and programmes. Through ELENA, REScoop MECISE will support the set-up of Project Development Units (PDU) all over Europe. Once these projects have reached the final stage of development, REScoop MECISE can support them in setting the right Public Private Partnership and apply for soft loans from the European Investment Bank.

Recommendations for EU Policy makers

Prosumers such as renewable energy cooperatives still face significant legal obstacles throughout the European Union including explicit legal restrictions, disproportionate administrative and planning procedures and punitive tariffs. With the right EU legal framework, they could flourish and deliver a significant share of Europe's renewable energy and provide important flexibility to the energy system through demand response. By 2050 half of the European citizens could become prosumer, either by investing in solar PV-panels at home or by joining a REScoop.

Already today, cooperatives have transformed the energy market in many European countries while contributing significantly to revitalising the local economy and creating local jobs. They deliver a significant share of renewables investment and promote their local development and public support. The energy transition will require a considerable investment that will be paid for by citizens: as



Citizens should be encouraged to think beyond their own energy needs and care for their local community. The benefits of activities of citizens and REScoops to the local energy system, society and the environment should be properly valued and remunerated.

All citizens, particularly those that are vulnerable or who are experiencing energy poverty, should have access to clean renewable energy at transparent and fair prices.

Citizens and REScoops should be encouraged and guaranteed a right to produce, store, supply and use energy from local renewable energy sources, and to access markets on an equal playing field with larger actors.

Citizens and REScoops should be encouraged to own and operate distribution grids [and transmission lines].

Energy prices never include hidden (social) costs, and potential risks that are passed on to future generations. Those aspects are easily forgotten when having discussion on the prolongation of old nuclear and coal plants.

Rules on priority grid access for renewable energy should be maintained, in particular for smaller actors (including REScoops), and should be properly implemented and enforced.

Above all, REScoops and their role in the social economy, employment, social cohesion, regional and rural development, and environmental protection objectives should be widely acknowledged and reflected in a favourable EU legislative framework. EU policy makers need to provide a level playing field for new business models that adopt alternative governance and ownership principles (like REScoops) that protects against power abuse by incumbents. A clear and stable legislative framework could reduce complexity, costs and risks of investment in renewables and energy efficiency. That includes EU rules and guidelines on public procurement. Innovative public private partnerships with local energy communities need to be identified and best practises need replication.



Recommendations for local authorities

REScoops have many things to offer to local authorities. Therefore, the regions, provinces, cities and municipalities support promotional efforts and make the cooperative business model more known and convenient. If we want to empower our citizens and keep the transition fair, affordable and local, we will need to identify the existing initiatives, learn from them, empower them, foster inter-regional & international collaborations and replicate the best practises.

Although the transition is accelerating and a large number of local actors are taking steps to translate the Sustainable Development Goals into climate action plans, the need for sustainable development with a clear role for citizens should be even more recognised and adopted by actors at all levels: EU institutions, Member States, regions, provinces, cities and municipalities. Although the choice for local energy communities makes sense from a financial, social and environmental perspective, these benefits are often not recognised or taken into consideration when writing public tenders. Local authorities should foster collaborations with REScoops and at least create an equal level playing field for local energy communities to participate in public tenders. This can be done by considering more than just financial criteria and by putting direct citizen participation as a prerequisite.

If we really want the transition to succeed, we need to mobilise the local authorities and aggregate the RES and EE projects that they identified in their sustainable energy and local energy action plans. Through REScoop MECISE, local authorities can then apply to ELENA and get technical assistance to develop these projects and engage with local energy communities. Once the projects have reached the financing stage, equity can be raised from local citizens and the European Investment Bank can provide soft-loans.

http://publications.jrc.ec.europa.eu/repository/bitstre am/JRC92694/ldna27110enn.pdf

^{III} <u>Towards 100% renewable energy in Belgium by</u> 2050



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