

Newsletter #2

December 2020

Increasing RES uptake through Microgrids in the Alps

Dear Reader,

Welcome to the second edition of the ALPGRIDS Newsletter. In these pages, we would like to introduce you to the sustained work of our project partners despite the impact of the COVID-19 crisis, share our vision about Energy Communities and the transposition of EU directives and allow you to discover some of our key pilot areas.

This newsletter contributes to the commitment towards a more sustainable and carbon neutral Alpine region and we hope that you find it just as interesting as we do. If your interests lie in the area of renewables, energy autonomy, network resilience, energy communities and microgrid solutions, we invite you to follow us and participate in our project activities.

Follow us on the website www.alpine-space.eu/projects/alpgrids which is also a great source of information of news, updates and project progress on key outputs.

We hope you enjoy learning more about ALPGRIDS!



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ALPGRIDS AT A GLANCE

The general objective is to create a transnational enabling environment to foster microgrid solutions supporting in particular the creation of local energy communities.

DURATION:
01/10/2019–30/6/2022

ERDF: €1,599,511



LOW CARBON

Read more about ALPGRIDS at:

www.alpine-space.eu/projects/alpgrids

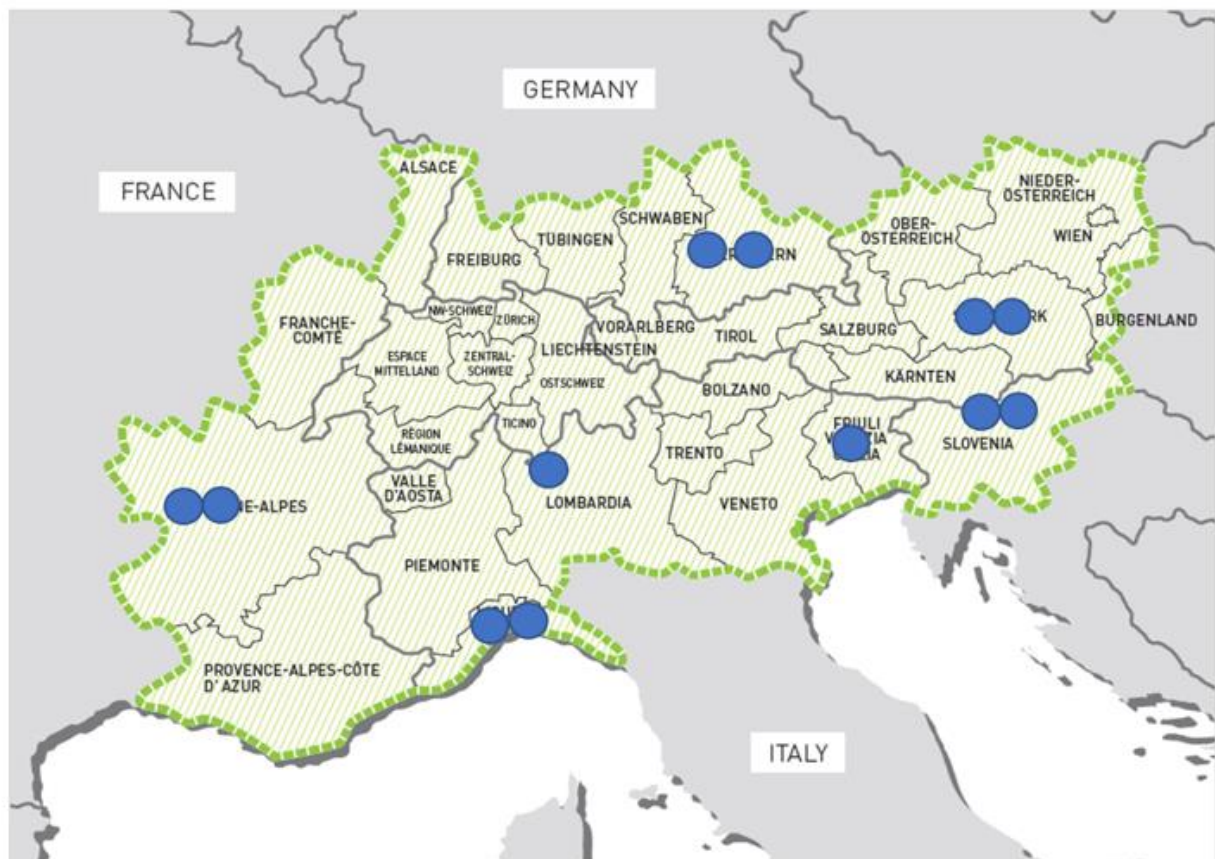
ALPGRIDS during the COVID-19 crisis

Despite the ongoing COVID 19 crisis and its impacts on our day-to day life and the project's activities, ALPGRIDS project partners have managed to adapt their workplan and activities in order to minimise the impacts on the project's outcomes. Due to limited access to external resources, face-to-face meetings and promotional events were replaced by online events and communications. Meanwhile, technical simulations were implemented in order to compensate for delays of some of the pilots' activities. Project Partners remain committed towards developing tools that will support energy community projects in the Alps. Stay tuned and stay safe!



Discover our pilot areas

ALPGRIDS is focusing on creating a transnational enabling environment to foster microgrid solutions supporting in particular the creation of local energy communities. To achieve this, the project is building on 7 microgrid pilot sites in 5 countries. Some of the pilot sites were already presented in the first edition of the Newsletter and you can read about the others here. All pilots are entering in the next stage of implementation. [More](#)



Municipality of Selnica ob Dravi (Slovenia)

The pilot project focuses on the development of a feasibility study of a microgrid of public buildings in the centre of Selnica ob Dravi. Different pilot development steps and activities were split up and will be implemented between two partners, the Municipality of Selnica ob Dravi and Energap.

The aim of the project is to establish a pilot microgrid that serves for modelling and finding solutions for:

- possible self-sufficiency of public buildings and thus reduction of energy costs;
- possible island operation of the microgrid, which would provide energy even at a failure of the public network in the event of natural and other disasters;
- legal formal establishment of an energy community, in which, in addition to the municipality, interested citizens would also participate and would finance the installation of photovoltaic power plants.

When the community is established it will involve the following public sector stakeholders – municipality, school, kindergarten, cultural centre and fire station. The school will serve as a production unit and a user. If possible, the fire station will have a production and a small storage system; others will be users.

Through the pilot, the technical and legal aspect of setting the community will be studied. The pilot will act as a showcase for citizens to see and understand the microgrids. Through measuring the production and use and using the system of net-metering, we will try to produce as much of our own energy as possible. The energy efficiency measures on the user's site will be also implemented to achieve as much self-sufficiency as possible.

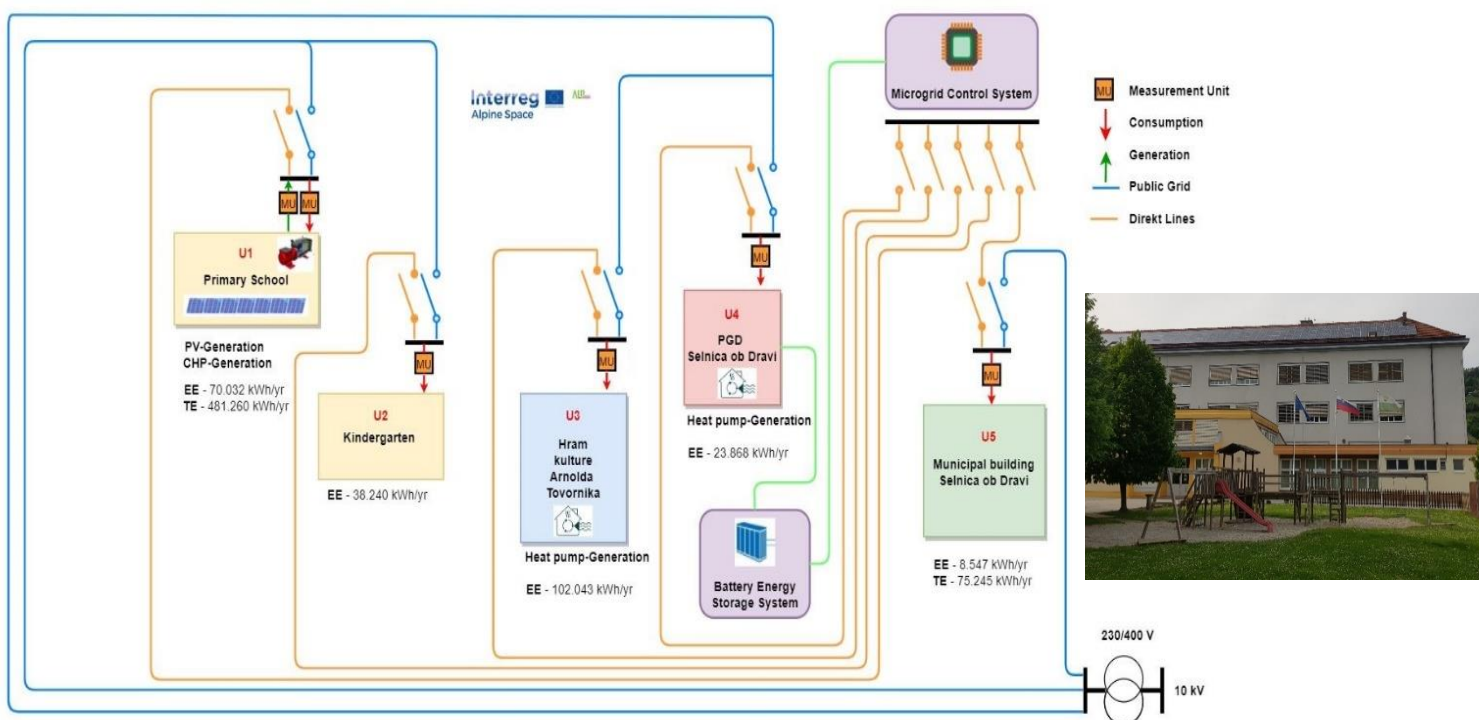


Illustration of the connection scheme of the pilot site in Selnica ob Dravi

City of Udine (Italy)

The pilot project aims to apply the recent Italian regulation on renewable energy communities to three public buildings, a school, a kindergarten and a museum, and four social housing buildings, all organised in a microgrid.

High-efficiency CHPs, in a partial replacement of the existing gas-fuelled boilers, are envisaged at the school and the kindergarten, with the related benefits of a reduction in primary energy consumption, carbon emissions and overall energy bill of the Municipality.

The electricity generated by the existing PV plants and by the CHPs will be shared into the microgrid, contributing to its greater energy self-sufficiency. It will verify the convenience of a complete entry into the network of the electricity coming from renewable sources, as provided for by the new regulation on energy communities, compared to a real local consumption.

For the purpose of optimal sizing and operation of CHPs, an annual campaign for continuous monitoring of heat and energy exchanges, as well as the generations of PV systems, will be carried out on the buildings involved. The processing through a simulation model of the acquired data will define the most effective configuration of the local energy community in terms of energy and economics.

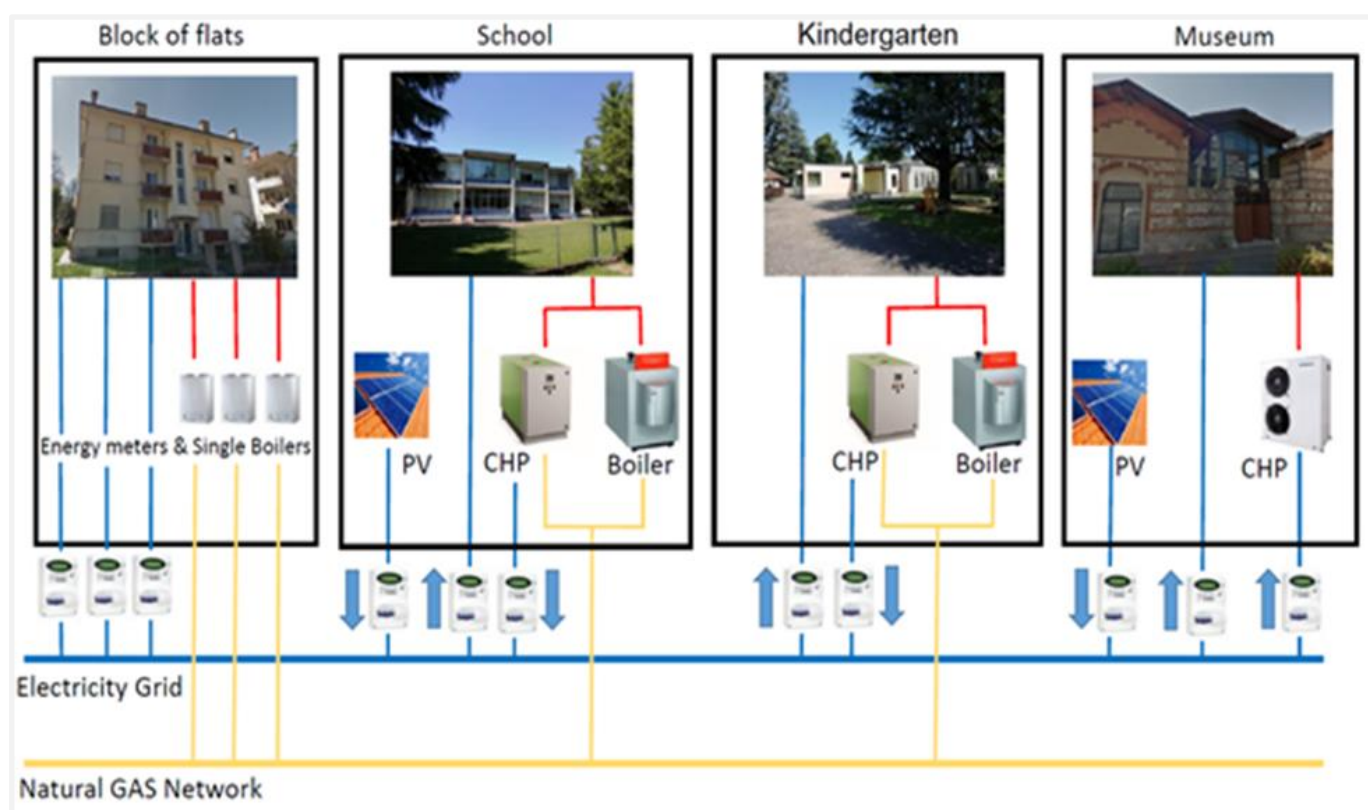


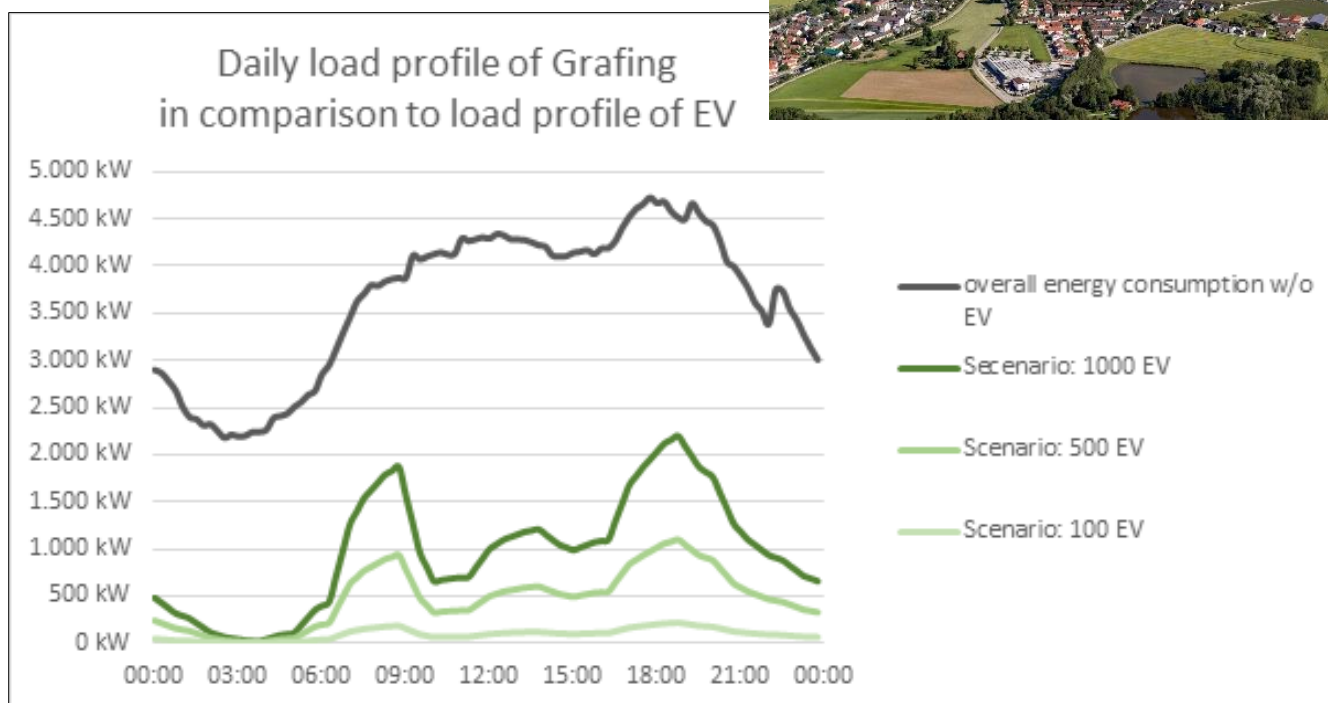
Illustration of the pilot City of Udine made by DEMEPA

Pilot site in the City of Grafting (Germany)

Grafting is a city in a semi-rural environment 30km east of Munich. With around 13,600 inhabitants and around 6,100 grid connection points, Grafting has a total yearly consumption of electric energy of approximately 24GWh. Out of this, 10GWh is produced locally. This results in a self-sufficiency rate at city level of around 40%.

In Grafting, the increasing number of EV will sooner or later provide challenges for the electric grid. The pilot will focus on one area of Grafting, Schönblick, which can be described as a microgrid.

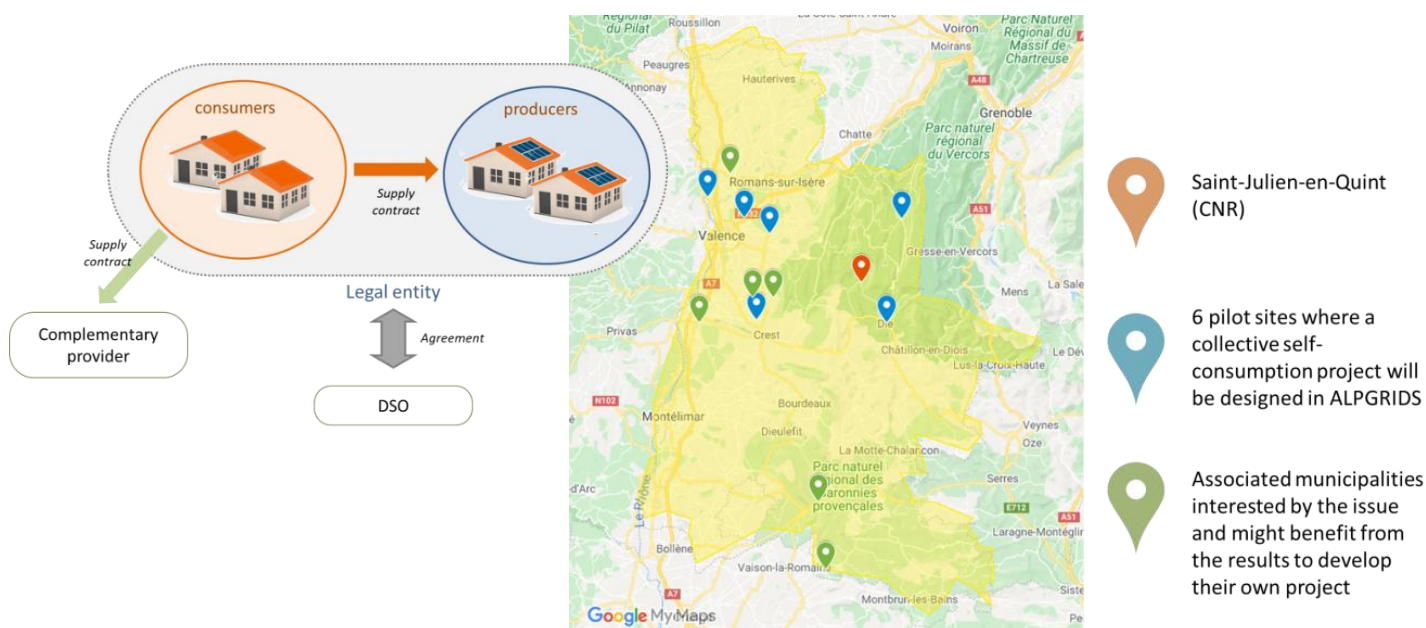
Effects of EV charging will simulated for this microgrid. Different measures to avoid load peaks are compared. This includes an investigation into whether energy communities or local PV production can help to avoid load peaks. Load profile measurements at transformer stations and EV charging points will help to understand the current situation and different future scenarios.



Actual electric load and projected future EV load profiles (Grafting)

Pilot sites followed by AURA-EE (France)

AURA-EE has chosen to work on several pilot sites in the Drôme department for all of which a collective self-consumption scheme will be set up. Collective self-consumption means that a local PV producer can sell its electricity directly to local consumers. Previous studies have shown that business models of collective self-consumption are difficult to implement in France, and that their profitability is highly dependent on the load profile of the consumers involved. By working on a wide range of situations, AURA-EE hopes to identify the best conditions under which such projects can be implemented, so as to help municipalities and energy communities develop more easily their future projects.



Collective self-consumption scheme in French legislation and location of the 6 pilot sites followed by AURA-EE and other sites associated to ALPGRIDS implementation in Drôme department

The six pilot sites (Saint Marcel-les-Valence, La Roche-de-Glun, Die, Montélier, La Chapelle-en-Vercors, Eurre) have been selected thanks to a call for interest sent to all the municipalities of the Drôme department. They are mainly small villages, either in rural or semi-rural areas. On all these sites, potential PV projects are already identified, some energy communities sometimes already exist and all the buildings are equipped with smart meters, which makes it easier to collect some data.

The project starts with the collection of the load curves of each building during one year. Overall, about 50 buildings are concerned. These load curves, that is the average power over short time intervals as a function of time, will be provided by the existing smart-meters at a 10- or 30-minute timestep (depending on the power subscription). Then, we plan to simulate the PV production curve at a 30-minute timestep on the basis of meteorological and satellite data. The power of the PV plant will be adjusted to the building perimeter so as to reach a high self-consumption rate (> 90%).

Various scenarios will be designed according to building perimeter (ultimately, we might only keep the buildings whose load curve best suits the PV production periods), the PV capacity and different financial schemes. At the end, the data analysis will assess, on each pilot site and for each consumer, what share of local production can be self-consumed and when. Then, adding the financial hypothesis, the aim will be to find out the best PV electricity price structure, fitting both the producer and the consumers so that we get a well-balanced model over time.

Energy Communities and the transposition of EU directives: What is at stake?

ALPGRIDS aims at fostering the uptake of RES through microgrids in the Alpine regions, in close relation with the advent of Energy Communities. The timing of the policy work carried out during the project and the ongoing transposition of the EU Directives is ideal to advance suggestions to shape a common understanding of energy communities but yet more, an optimal framework in which all alpine actors may thrive.

Citizens Energy Communities (CECs) & Renewable Energy Communities (RECs): differences and similarities

As defined in the directives, CECs and RECs are very similar and both agree on several points such as voluntary participation and the effective control distributed among each member of the community and are not exclusively profit-centred.

However, the definitions given by the directives still differ on four points and may lead to different implementation by Member States:

- **Members' status:** The participation in RECs is more restrictive and reserved for citizens, territorial communities, small and medium-sized companies, whereas CECs are open to any type of stakeholders.
- **Ownership and control:** Ownership and control of RECs is based on geographical criteria and is limited to local stakeholders whereas CECs *"should be limited to those members or shareholders that are not engaged in large-scale commercial activity and for which the energy sector does not constitute a primary area of economic activity"*¹.
- **Governance:** RECs' internal decisions have to be made through democratic governance and guarantee the discretion of the community (out of the reach of external shareholders and influence).
- **Energy scope:** RECs address all types of renewable energies (electricity, gas, heating and cooling), while CECs are limited to electricity regardless of whether it is renewable or fossil.

The transposition of EU directives in the national legislations: concerns and perspectives

Member states are tasked to transpose these directives by January 2021 (*Directive on the promotion of the use of energy from renewable sources*² defining RECs) and June 2021 (*Directive on common rules for the internal market for electricity*³ defining CECs) and to create an enabling legal framework for the development of energy communities. However, several concerns remain:

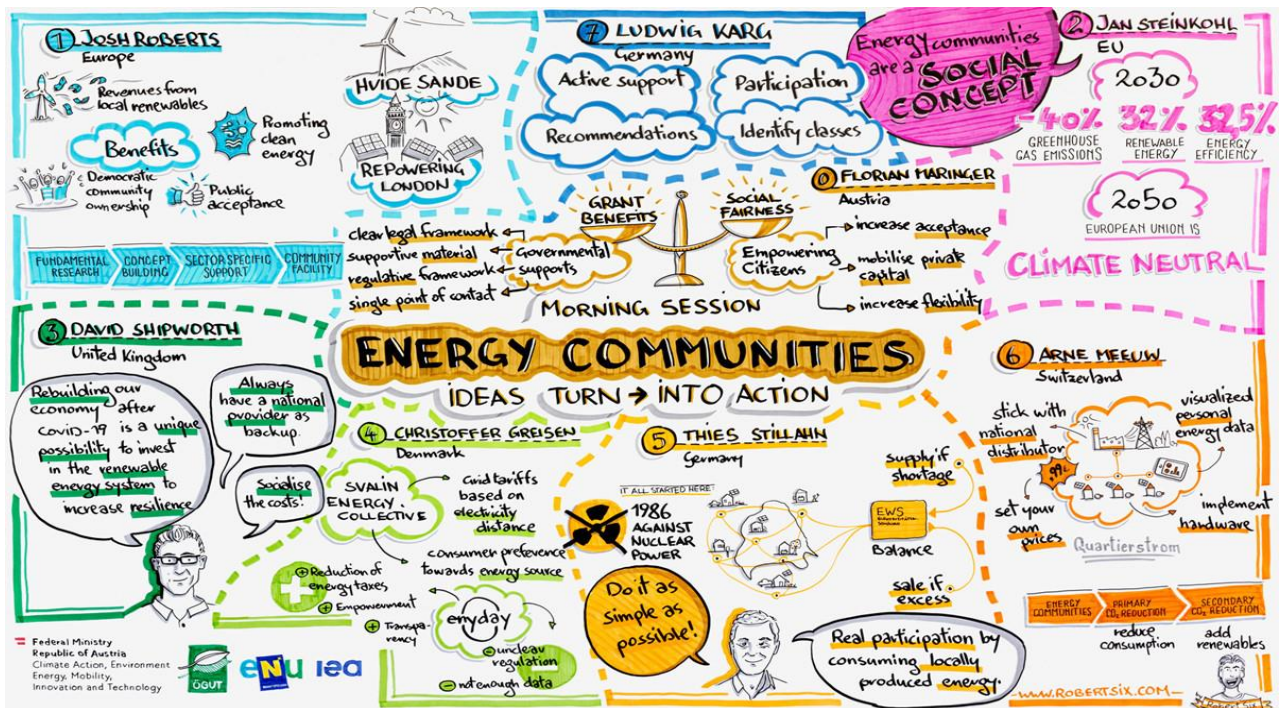
- **Geographical perimeter:** Stakeholders willing to join RECs are required to be established within a specific area. This condition seeks to keep benefits and governance at a local level (out of the reach of external stakeholders and influence). In France, energy experts and NGOs have proposed to limit participation at Department level (EUROSTAT NUTS 3 level). In Austria, the current draft for the legislation aims at a technical definition of the proximity based on grid levels.
- **Governance:** The EU directives give Energy Communities flexibility when defining their internal organisation and most national legislations are equally lenient. In time, this perspective will be improved through trial and error.
- **Legal:** Measures to mitigate the investment risk generated from the unrestrained capacity of community members to join and leave the communities are needed.
- Finally, Member States presented with the option to allow Energy Communities to become distribution operators. For example, in Austria, under the current draft of the legislation, both CECs and RECs should be able to operate grids on their own. In Italy, Energy Communities are not currently able to operate as

¹ [Directive \(EU\) 2019/944 on common rules for the internal market for electricity](#)

² [Directive \(EU\) 2018/2001 on the promotion of the use of energy from renewable sources](#)

³ [Directive \(EU\) 2019/944 on common rules for the internal market for electricity](#)

distributors, even if this option is being studied by the energy regulation authority. They are currently able to sell, buy, share and store energy by using the existing low voltage distribution network.



Graphical summary of the online event Mission Innovation Austria: Energy Communities, created by Robert Six

The transposition of these directives is the first of many steps to come before the wider rollout of Energy Communities. The project ALPGRIDS is an opportunity to put the Energy Communities model to the test through the seven pilots and put forth recommendations to facilitate the fostering of this model to the Alpine regions and across Europe. Thanks to this work, other potential Energy Communities and decision-makers will be able to carry this effort onward.

The content of the title about Energy Communities and the whole content represents the views of the author only and is his/her sole responsibility. The European Commission does not accept any responsibility for use that may be made of the information it contains.

ALPGRIDS News & Events

ALPGRIDS Project Meeting and Transnational Workshop Online

On 6 and 7 October, Project Partners met online to review the progress of the project in particular pilots and communication activities. On the second day, Project Partners shared their views and experience during a transnational workshop on local energy communities. All project partners were present online.



Annual EUSALP Energy Conference in Chamonix, France

In September 2020, the ALPGRIDS project was presented at the EUSALP Energy Conference which took place in Chamonix, France and online. The event was highlighting the experiences of Alpine territories in the management of natural risks, and their needs to adapt to climate change and develop advanced sustainable energy strategies leading to carbon neutrality in the Alps. LocalEnergy communities and microgrid solutions were presented as key enablers and solutions in the energy transition. More than 150 people attended the event in Chamonix and online.



4ward Energy Research Ltd join the European Forum Alpbach 2020

In the European Forum Alpbach Talk, pioneers of the energy communities discussed about their experiences and expectations for the implementation of the Renewable Expansion Law in Austria. Thomas Nacht from 4ER was also there, to contribute and share his experience from the research projects LEC-Steyr, SchaltWerk2030 and ALPGRIDS. [More](#)



We cooperate

Both ALPGRIDS (Alpine Space) and SHREC (Interreg Europe) projects address the challenge of the transition to a low carbon economy, in particular the involvement of citizens in renewable energy projects. Our joint ambition is to multiply opportunities to work together in a complementary way in order exchange experience and cross-promote project's activities and results AURA-EE is involved in both projects and will facilitate this cooperation.



Both projects were presented at the EUSALP Conference in Chamonix. This event was an opportunity to exchange ideas on the possibilities to shift towards and increase the uptake of renewable energies. Some learning opportunities that SHREC project partners can benefit from through ALPGRIDS relate to the operational approach through pilots of creating local energy communities and implementing microgrid solutions. In turn, SHREC can provide some learning opportunities in the models to involve local communities, public actors and consumers, as well as policy-related instruments.

Partners & Contacts

- Auvergne-Rhône-Alpes Energy Environment Agency (AURA EE)
- Regional Agency for Infrastructure, Building Renovation and Energy of Liguria (IRE spa)
- Energy and Innovation Centre of Weiz (W.E.I.Z.)
- Energy Agency of Podravje - Institution for Sustainable Energy Use (ENERGAP)
- 4ward Energy Research Ltd. (4ER)
- Design and Management of Electrical Power Assets (DeMEPA)
- B.A.U.M. Consult GmbH München (BAUM)
- Rothmoser GmbH & Co. KG (ROTH)
- Compagnie Nationale du Rhône (CNR)
- Municipality of Udine (UDINE)
- Municipality of Selnica ob Dravi (SELNICA)
- University of Genoa (UNIGE)



LET'S STAY IN CONTACT!



<https://www.linkedin.com/groups/8910047/>

Patrick Biard - Auvergne-Rhône-Alpes Energy Environment Agency (Lead partner)
patrick.biard@auvergnerhonealpes-ee.fr



Nina Maschio Esposito - Auvergne-Rhône-Alpes Energy Environment Agency
nina.maschio-esposito@auvergnerhonealpes-ee.fr

Vlasta Krmelj – Energy Agency of Podravje (Communication leader)
vlasta.krmelj@energap.si