



REEL Demo – Romande Energie ELectric network in local balance Demonstrator

Deliverable: 5f Energy community activities undertaken
at the Rolle demo site in the frame of the REeLproject

Demo site: Rolle

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Aim

The aim of this report is to briefly describe the activities of the Energy Community undertaken by Romande Energie at the Rolle demo site in the frame of the REeL project. It should be noted that during this period from 2017 to 2020, many people from the institutional communication, marketing, customer relations and SmartLab departments were engaged to maintain contact between the public and the REEL project. In order to extend dissemination to all customers, the digital media teams also constantly created content on social networks and the “Questions d’énergie” blog.

Similarly, many professional quality videos have been created and published on the platform to explain the nature of the project and animate the platform.

Activities

Partnership with local authorities

From the fall of 2017, the political authorities of Rolle, then those of Mont-sur-Rolle were approached in order to present them the main lines of the REeL project, to underline the importance of the participation of their population, and finally to obtain their adherence and support during future public events.

These contacts were established during official meetings with a delegation from the municipality and the energy commission of the municipal council. The first energy planning scenarios were introduced to those stakeholders based on territorial and building data to achieve the objectives described in the municipal energy concept (CEC) established to obtain of the Cité de l’énergie label.

The proposal to associate the image of the municipality with the communication plan of the project was approved by the municipal council of Rolle in February 2018.

Launching of the project to the public

A press release mentions this partnership and the entire population is invited to an official evening at the Casino de Rolle on April 25, 2018.

Speakers present to around a hundred participants, in particular, the energy (Prof. François Maréchal – EPFL-IPESE) and human (Prof. Claudia Binder – EPFL-HERUS/ no project partner but engaged for the project) issues of the transition. Romande Energie explains how the population will be associated with the project and launches the idea of an energy community. During this event, an online survey related to the energy transition was launched by the REeL partners working on social aspects in collaboration with the Cantonal authorities of Vaud related to the energy, namely DIREN-VD.

First community workshop

The first workshop of the energy community took place in two parts on June 6, 2018 at the premises of Romande Energie in Rolle. The first is devoted to the presentation to the owners of the GridSense technology (ex-Alpiq Intech) approached for the conduct of the project’s Demand Side Management (DSM) activities as described in the project proposal. The second is intended to give a more human dimension to the project. Indeed, the REeL project till then was mainly concerning technologies necessary for the operation of networks with a large penetration of intermittent renewable energy which are not of direct concrete interest to the public. An Energy Gaming environment was set-up in the community based on the INES game (Interaktiv Energieszenarien), in collaboration with the EPFL-HERUS laboratory (Human-Environment Relation in Urban Systems – Prof. Claudia Binder) and UCS (Markus Ulrich). About thirty participants have the opportunity to discover through participatory activities the impact of their behavior on energy needs and the emissions associated with it.

Second community workshop

On September 26, 2018, a second workshop was organized on the same premises. Given the relatively little public interest in the energy gaming environment, the EPFL-HERUS lab and UCS are not associated with this evening and a new structure is followed.

Three round tables are proposed during this evening with the themes:

- My feelings about the project and my initial expectations after the first two evenings
- My interaction in the community
- My interest in the project

The key outcomes of this workshop are the following:

- People do not understand what is offered by the DSM experience, they want a solution they can understand, presented as a future product
- People do not understand why it is not the Smart Meter that provides this service, why in the future should they pay to have equipment like GridSense? (NB: without the support of a research project, GridSense is not attributable to the costs of the network)
- The scientific approach of Laboratoire HERUS is not understood: is it a game or a study? What do they have to gain from it? what time investment?
- The web page on the RE site is not suitable for exchanges (everything happens by email when they are not blocked by anti-spam), the information does not seem to be updated

As a result, the following decisions were taken:

- An interactive digital platform for the REEL community with neutral graphics uncorrelated to that of Romande Energie was created.
- A team of product designers developed a non-monopoly business model for a GridSense solution integrated into a DSM program of the GRD. An offer that presents the services provided to customers and to the public network. At the end of the project, apart from the support granted to the volunteers of the REEL project, would the costs be acceptable for new clients? What gains can be expected from the payment of flexibility by the DSO? Is the model viable without subsidy?
- The HERUS-SCS proposal was not retained, the transition awareness part will be carried out through the participatory actions of the REEL platform.

A critical size was set for achieving the objectives, including:

- 30 members per collaborative workshops
- 100+ members for the REEL community
- 50 to 60 owners for the DSM (must be operational Q3 2019)

Interval September 2018 – March 2019

Product design and UX teams assessed the technical feasibility and desirability with community members.

Since the ability of GridSense to meet the requirements of DSM academic activities was questioned, other market products were evaluated. Pilot installations at early adopters of smart grid solution was carried out with Tiko and Voltalis solutions given their experience in the European market. Tiko seems the most suitable, but the developments for controlling heat pumps and batteries are not yet mature.

The flexible resource capacity of Rolle neighborhoods equipped with smart meters has been assessed but remains low. Despite the presence of heat pumps in some recent residential neighborhoods, their potential for flexibility is low in relation to the consumption and power of the neighborhood stations. Electric heaters and boilers in PPE buildings are difficult to access and contribute little to the integration of PV.

Despite the installation of 700 smart meters in six urban and residential networks, technical (SAP) and legal reasons (secure identification of the beneficiary) make it impossible to provide load curves via the Romande Energie customer portal.

Solutions are being sought on the market (such as Swisscom Home/mystrom) to enable participants to obtain follow-up monitoring of their consumption curve, whether they are owners or tenants.

SESAME meetings

The next collaborative workshops took place at the socio-cultural youth center of the city of Rolle (outside the RE premises deemed too decentralized by the public) after having approached the inter-municipal association Enfance & Jeunesse (ENJEU).

The first event in March 2019 presented interested parties with the proposals imagined within the framework of the project by the Product design and UX team, in particular to make the management of their heating or production of domestic hot water intelligent and useful to the network and allow them to get intelligent monitoring of their consumption. Despite the efforts of communication, the participation remains equal to the average of the previous events. The couples present are mainly owners, mostly elderly. There is a real interest around the stands (a lot of questions), but also the fear of getting involved even if everything is made available free of charge by the project.

Partly recreational, a conference by Damien Friot (Ecometrics) explains to the members present as well as to the teenagers of the center the principles of carbon assessments and carbon accounting. Given the success of this conference, several families are expressing their interest in participating in a carbon coaching experience and their mode of consumption.

Interval April 2019 – September 2019

During the weeks following this meeting, despite the relay on the REEL community platform, it was noted that it will not be possible to recruit enough owners to obtain significant flexibility in the neighborhoods concerned.

Decisions:

- The academic activities for the DSM are moved to Chapelle-sur-Moudon where the project is already present with DEPsys and where an agreement exists with a large landowner for the installation of community batteries and networks which will make it possible to simulate the flexibility of 80 customers. We thus obtain a system where 260 kVA (380 kWh) of batteries are significant in relation to the power of the network (250 kVA) and 300+ kWp PV distributed in the district.
- For educational purposes, the REEL community's interactive platform will offer a coaching experience to interested families and collective action to promote responsible consumption patterns with merchants in the town of Rolle.
- The Rolle site remains the benchmark for academic activities based on measurements from PMUs deployed in MV and LV, as well as data from smart meters

The second event at SESAME is therefore organized as a premium for people from the REEL community (120 more or less active members) in the form of a conference by Marc Muller and Jonas Schreiner based on the RTS program "Aujourd'hui" and the book "Ecolo à profit" followed by a presentation on a Vaud experience of permaculture.

The goal is to disseminate as much as possible the notions of social, economic and technological transformation necessary for the decarbonization of all human activities.

December 2019 – invitation to the EPFL SmartLab Romande Energie and presentation of the coaching results.

In order to maintain this dissemination effort with the public, members of the community and participating families are invited to discover Romande Energie's activities to promote the energy transition. The families participating in the carbon coaching experience comment on their experience and discover the results of the behavioral changes adopted during the coaching. The assembly realizes that everyone's action is necessary and of the impact of buildings and transport on their personal balance sheet.

Epilogue

The COVID crisis of early 2020 highly affected the REEL community and no more public events took place.

While the public interest was real, the technology and perceived complexity of the whole project was an obstacle for many people. For example, collective action with local businesses came up against the simple fact that scanning a QR code was necessary for validation on the platform of responsible consumption actions.

Another lesson is that the population today does not have enough time to devote to understanding the energy problem of the decarbonization of society. Since then, the situation may be different today given the threat of shortages and soaring prices.