Industrial Energy Cooperation Solutions for Renewable Energy Integration in Spain

Spanish legislation, consistent with the European legislative framework, aims at the enhancement of energy efficiency and increased use of renewable energy sources. The National Energy Action Plan until 2030 identifies renewable and citizen energy communities as a key measure to boost the diversity of stakeholders and implementation of participatory projects as well as to enhance distributed energy generation. Thanks to the experience built in S-PARCS – aimed at providing concrete solutions to overcome barriers to energy cooperation – we provide policy recommendations for industrial energy cooperation in Spain, based on real experiences from our Spanish Lighthouse industrial parks.

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Background

The energy cooperation solutions analysed as real case-studies in Spain foresee the joint exploitation of renewable energy sources for electricity production.

Okamika-Gizaburuaga industrial park (left)

Bildosola-Artea industrial park (below)

The first solution is the installation of a **small hydropower plant** on unused existing river dams located in the proximity of the potential end-users.

Moreover, the project promotes the installation of a **photovoltaic (PV) plant** to provide electricity to multiple companies in the park via shared self-consumption, which turned out to be the most profitable alternative among other energy consumptions schemes assessed.

The policy challenges

Challenges related to the implementation of these solutions are manifold.

Firstly, the **exploitation of existing assets for renewable energy production** is hampered by the difficulties in receiving or renewing the license to make use of existing facilities, which in this specific case are currently subject to an expired license of previous owners. This situation is highly common whenever there are existing facilities or spaces that are not private property or do not have a specific owner.

Secondly, the assessment of the feasibility and design of the PV plant have proven quite challenging due to the **limited data on consumption profiles available for small/medium companies**, as a result of lack of awareness on energy efficiency aspects. Also, it emerges that increasing the size of the plant may not be profitable due to currently low electricity prices and low consumption during the central hours of the day as well as in summer (when solar radiation and plant productivity are at their peak) or to difficulties in finding end-users with complementary consumption profiles.

It is also worth highlighting that **shared self-consumption** of self-produced energy was not authorized (i.e.: only the owner of a renewable energy plant was allowed to use the electricity produced). However, thanks to the most recent legislative developments, shared self-consumption from PV production is now allowed in Spain for plants smaller than 100 kW and for end-users located within a distance of 500 m from the generation plant.

Solutions and Policy Recommendations

The challenges encountered reflect common obstacles to the implementation of energy cooperation solutions.

In order to unlock the licensing process, the park manager has made a great effort to **engage stakeholders** (i.e.: companies of the park, public administration, local environmental authorities, energy agency and investors). The engagement has also been

beneficial for the identification of incentives and subsides.

As for initial findings of the project (cfr. D2.1, see below for further reading), a favourable condition to improve data availability and accessibility is to set up a **centralized approach for energy management** and contracting of electricity supply, for example promoted by the park manager. As a confirmation, in this specific case, data were retrieved thanks to an official request sent to the energy supplier by the park manager, asking for access to the data collected by the electricity meter reading of the companies, upon authorization of the companies.

Finally, recent updates in the Spanish legislative framework (i.e. RD 15/2018, RD 244/2019) **incentivize the investments and facilitate exploitation of renewable energy installations**, by directly affecting the possibilities of SMEs in terms of energy data management, especially when willing to use the electricity surplus. Similarly, measures and investments, such as in energy management systems, distributed electricity generation installations, etc. are eligible for grants from the Energy Agency of the Basque Government.

Owing to the lessons learned in S-PARCS when analysing the implementation of real energy cooperation solutions in Spain**,** the following set of policy recommendations is proposed.

Policy Recommendations

- Assure simplified processes to obtain licenses of use for assets to be dedicated to the realization of renewable energy projects and to the reduction of greenhouse gas emissions, in line with existing European targets of carbon neutrality.
- Promote and facilitate the evaluation of projects, in terms of costs and benefits (economic, environmental, social, ...) as a whole, thus facilitating the comparison of the proposal solutions taking into account the different agencies involved (water, electricity, infrastructure, ...) avoiding partial evaluations and allowing a more efficient decision-making.
- Facilitate companies (especially SMEs) in accessing energy consumption data, also by harmonising the energy bill format including detailed information on their energy mix, prices and demand. Thus promoting the figure of the "Active Client" in line with the European Parliament's directive 2019/944 which puts the figure of the consumer at the center of the new energy scheme. With more information, of higher quality, with a more active role in the market and a greater control of its costs, which generates its energy to store it and even exchange it with other consumers nearby or not.
- Allow and promote shared self-consumption from renewable or efficient energy generation and promote renewable energy communities whose primary purpose is to provide environmental, economic, or social benefits to their member partners or the local areas in which they operate.
- Develop flexible business models to install and exploit renewable energy installations. The business models could combine public, private or community participation on investments and exploitation.

Further reading

The analysis of instruments to tackle non-technical barriers and the complete list of policy recommendations based on the results of the legal, regulatory and standardization analysis was developed in Work Package 2 of the S-PARCS project. Detailed information is included in Deliverable 2.1, Deliverable 2.4 and Deliverable 5.4 is available to download at:

https://www.sparcs-h2020.eu/results/deliverable/

The majority of our project reports are freely available online at https://www.sparcs-h2020.eu/.

S-PARCS policy briefs

We summarize key findings of the S-PARCS project in a series of policy briefs, all of which can be found here: https://www.sparcs-h2020.eu/#results

Contact information

We are looking forward to hearing from you and are happy to discuss with you.

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