

Community Transformation Office (OTC) role in the deployment of Energy Communities in Spain

Summary

Energy communities (ECs) are emerging as tools for a fair energy transition through shared renewable energy. Hence, the European Union (EU) has positioned ECs as key elements of its energy transition strategy, by creating a regulatory framework that defines them as Renewable Energy Communities (RECs) and Citizen Energy Communities (CECs). However, EC initiatives face regulatory and financial barriers related to legal compliance, initial investments, establishment, the implementation of energy projects, and the subsequent data management. In this context, support mechanisms, such as Community Transformation Offices (OTCs) in Spain, have emerged to guide and assist citizens, supporting them throughout the process of creating and consolidating ECs. This paper shows the current development of ECs in Spanish rural and urban areas and the role of one OTC in their deployment, achieving thirteen consolidated ECs, more than three hundred consultancies and sixty dissemination actions.

Keywords: energy communities, shared renewable energy, regulatory barriers, financial barriers, Community Transformation Offices

*Field of application for the findings: **Sustainable and Solar Energy Transition**: Renewable Energy Strategies, Scenarios, Financing and Policies, Renewable Energy Education, Citizen Participation / Empowering Consumers, Carbon Neutral Regions, Sustainability and LCA*

Addressed audience: scientific community, general public

1. Introduction

Renewable Energy Communities (RECs) and Citizen Energy Communities (CECs) (Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources, Directive (EU) 2019/944 on common rules for the internal electricity market), introduce the concept of energy communities as legal entities based on open and voluntary participation, controlled by citizens, local authorities or SMEs. Energy communities' main objective is to deliver environmental, economic or social benefits to their members or local areas rather than financial profit, while enabling collective participation in energy activities such as generation, consumption, sharing or supply. These initiatives are gaining momentum across several European Union countries as mechanisms to make energy systems more accessible, open, and democratic. In addition, they promote the deployment of clean and renewable energy solutions, among which, solar photovoltaic self-consumption has become one of the most widely adopted models.

Within this European framework, the Spanish regulatory context regarding ECs remains limited to the transposition of both Directives concept, establishing the conditions for collective self-consumption, but undefining how these communities can manage their energy or operate as market participants within the electricity system. Despite these barriers (Khorrami et al., 2025; Yiasoumas et al., 2023), a growing number of ECs have been constituted in Spain in the last decade (Gallego-Castillo et al., 2021), reaching more than 200 initiatives, according to the Spanish Institute for Energy Diversification and Saving (IDAE). In parallel, some initiatives have emerged to support the development of these projects, such as Community Transformation Offices (OTCs), a support mechanism promoted by IDAE. These offices follow the one-stop shop model, providing citizens with free access to technical, legal and administrative guidance and information in order to consolidate ECs.

This work shows how one OTC has played a key role in the establishment and development of EC initiatives,

which are increasingly relevant for sustainable development, energy transition and collective energy activities, in heavily depopulated rural (Alonso et al., 2024) and urban areas in the region of Aragón, Spain.

2. Approach

The OTC is designed to address key barriers commonly faced by ECs, including the lack of a specific regulatory framework, challenges related to governance and collective decision-making, limited financial resources, and difficulties in behavioural change and user engagement. Additional challenges include the need for viable business and contracting models, improvements in energy efficiency and consumption reduction, as well as technical and environmental constraints. To tackle these challenges, the OTC has implemented a comprehensive methodology based on four main pillars:

Territorial engagement and initial diagnosis.

A preliminary assessment is conducted in each territory to identify existing initiatives, key stakeholders, organisation level, and potential interest from the local population, as well as relevant socio-economic and contextual factors.

Participatory facilitation and governance support.

The OTC organized participatory workshops focused on defining the collective vision and mission for the EC, improving internal organisation, and strengthening governance structures. This included decision-making processes, conflict prevention tools, coordination mechanisms, and inclusive participation strategies to ensure effective and resilient group functioning.

Multidisciplinary advisory services.

Targeted support is provided through workshops and consultancy services covering legal, technical, economic, administrative, and social aspects. Particular attention is given to the selection of the most suitable legal structure for the EC, being these primarily non-profit associations or consumer cooperatives, by analysing their respective legal, fiscal, administrative, and financial implications. Technical advisory activities include energy consumption analysis, system design proposals, energy sharing schemes, optimisation strategies, and basic engineering for collective self-consumption systems. Economic advisory focuses on investment analysis, financing mechanisms, cost allocation among participants, and payback assessments based on expected savings. Administrative guidance supports ECs in meeting legal obligations and navigating bureaucratic procedures, reducing potential barriers, time, and costs during the establishment process.

Dissemination and awareness-raising.

Energy communities are promoted as citizen-led initiatives through public talks, social media, and conventional communication channels, increasing visibility and engagement at the local level.

This integrated approach enabled the OTC to effectively support the creation and consolidation of ECs, particularly in heavily depopulated rural areas, by addressing social, technical, and economic dimensions in a coordinated manner.

3. Results

The activities implemented by the OTC have yielded significant results in terms of dissemination, stakeholder engagement, and the creation of Energy Communities (ECs) across the target regions.

Regarding dissemination activities, a total of 51 outreach events were conducted between December 2023 and September 2025, targeting the general public, local authorities, and the business sector. These activities included the development of communication materials, social media management, participation in public events, and contributions to press and radio, thereby increasing awareness and visibility of ECs at the local level.

Regarding territorial engagement and participatory support, the OTC carried out 62 accompaniment actions and 35 social advisory sessions across 28 groups. These actions focused on facilitating group organisation, supporting participatory processes, and strengthening governance structures, in line with the methodological

approach described. Most of the initiatives supported were launched with direct involvement from the OTC, although some were already in early stages of development.

In terms of multidisciplinary advisory services, specialised workshops and consultancies were delivered in legal, technical, economic-financial, and administrative domains. These activities provided practical tools to accelerate project development and reduce barriers to implementation. In particular, direct communication channels were established with regional registries of associations and cooperatives in Aragón and Guadalajara, facilitating administrative procedures and shortening the time required for formal constitution.



Fig. 1: OTC consultancy activity (left) and consultancy services statistics (right)

As a result of this integrated approach, 13 energy communities were formally established (Fig. 2), with an additional 8 initiatives in the process of constitution by the end of the OTC activity in 2025. These results highlight the effectiveness of support mechanisms in fostering the development of ECs, especially in rural contexts.



Fig. 2: Aragón map representing energy communities formally established

4. References

Alonso, M.P., Gargallo, P., Lample, L., López-Escolano, C., Miguel, J.A., Salvador, M., 2024. Measuring the relationship between territorial exclusion and depopulation – A municipal classification proposal to guide territorial balance. *J. Rural Stud.* 111. <https://doi.org/10.1016/j.jrurstud.2024.103421>

Gallego-Castillo, C., Heleno, M., Victoria, M., 2021. Self-consumption for energy communities in Spain: a regional analysis under the new legal framework.

Khorrami, S., Falvo, M.C., Pompili, M., 2025. A Review on Energy Communities Development, Opportunities and Challenges in Germany, Spain, and Italy. *IEEE Access*. <https://doi.org/10.1109/ACCESS.2025.3579336>

Yiasoumas, G., Berbakov, L., Janev, V., Asmundo, A., Olabarrieta, E., Vinci, A., Baglietto, G., Georghiou, G.E., 2023. Key Aspects and Challenges in the Implementation of Energy Communities. *Energies* (Basel). <https://doi.org/10.3390/en16124703>

DIRECTIVE (EU) 2019/944 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL - of 5 June 2019 - on common rules for the internal market for electricity and amending Directive 2012/27/EU.

DIRECTIVE (EU) 2018/2001 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 on the promotion of the use of energy from renewable sources (recast) (Text with EEA relevance).