



Mapping Italy's Renewable Energy Communities: Main Reports and Data Sources

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Introduction: proximity and open participation

Renewable Energy Communities in Italy, as defined by the [European Directive RED II \(2018/2001\)](#) and implemented nationally through DL 162/2019 and Legislative Decree 199/2021, are entities characterized by open and voluntary participation. The principle of open participation highlights the importance of raising awareness about their existence and geographical location, as this is essential for citizens to have the opportunity to join such communities.

These communities are intended as forms of self-organization by local citizens to produce and consume energy—ideally from renewable sources. They potentially and ideally represent a shift towards a new energy model, where citizens are no longer passive consumers but active participants who produce, manage, and consume their own energy. In doing so, they also contribute to the broader objective of the green transition.

The role of self-production and self-consumption is closely linked to the concept of proximity-based energy consumption. Under the Italian framework for Renewable Energy Communities (RECs), energy is considered self-consumed only if it is produced and consumed within the same geographical area. This area was first defined by Law Decree 162/2019 as that served by a secondary voltage substation and later expanded by Legislative Decree 199/2021 to include broader zones covered by the same primary voltage substation.

The proximity requirement for energy self-consumption implies the potential emergence of numerous small-scale RECs, in which—following the principle of open participation—citizens have the right to join. However, beyond the [issue of economic sustainability](#), the success of these communities also depends on the level of public awareness regarding their existence and the right of individuals to participate.

Understanding RECs diffusion: Key Reports

Since RECs were only introduced in European legislation in 2019 and subsequently transposed into national laws, their diffusion is still in progress, with ongoing developments in recent years.

However, to gain a better understanding of the phenomenon, we can refer to reports that analyzed their spread and examined how mapping and tracking efforts have evolved over time. One of the leading organizations reporting on Renewable Energy Communities (RECs) in Italy is Legambiente, a prominent Italian environmental association known for its work in sustainability, ecological transition, and environmental advocacy. Their annual reports (Legambiente [2020](#), [2021](#), [2022](#), [2024](#)) are a key resource for both identifying the most significant REC experiences in the country and observing how attention to this topic has evolved over time.

In the [2020 report](#), Legambiente urged the government to approve the delegated Ministerial decree. The following year, in [2021](#), the association was already monitoring 30 RECs. The report also identified the first two RECs to be actually realized in Italy: [Magliano d'Alpi](#) and [Napoli Est](#). The [2022 edition](#) introduced new examples such as [CER Nuove Energie Alpine](#), the first community to overcome the legal constraint of being connected to a primary substation; the project in [Ventotene](#), designed to meet the island's needs and leverage its unique potential; and the [Ripalimosani](#) initiative in Molise, which represents a business-led energy community model. Finally, the [2024 report](#) focused on the evolution of the legal framework for RECs in Italy and, based on data from GSE, reported that as of the end of 2022, there were 67 operational configurations already in place nationwide.

Another key reference is the 2021 [Vademecum published by ENEA](#) (the Italian National Agency for New Technologies, Energy and Sustainable Economic Development), which focuses on both national and international REC experiences. Notably, it highlights the [Melpignano](#) project in southern Italy—an early example of a community-based energy initiative launched back in 2011, well before the formal legal recognition of RECs in Italian legislation. Further valuable insights into the status of Renewable Energy Communities (RECs) in Italy are provided by the [“Orange Books” authored by RSE \(Ricerca sul Sistema Energetico\)](#), the research center of GSE—Italy's state-owned energy services manager. In its 2022 edition, RSE mapped approximately 20 REC initiatives across the country, offering a more formal overview of their development.

Useful Maps to Explore and Engage with RECs in Italy

A more visual approach to understanding the diffusion of Renewable Energy Communities (RECs) in Italy involves exploring the interactive maps developed in recent years. One of the earliest and most relevant examples is the map published by GSE (Gestore dei Servizi Energetici) in [September 2023](#), aimed at helping citizens understand the geographical eligibility for participating in a REC. The map outlines the boundaries of primary electrical substations, which define the technical perimeter within which participants must be located to form or join a REC.

However, this map only displayed the areas covered by the substations and did not indicate whether any RECs had actually been established within those areas. As a result, while it was useful for understanding technical eligibility, it did not help potential participants identify existing communities they could join, thus limiting its effectiveness as a tool for promoting open and informed participation.

A noteworthy private initiative for mapping Renewable Energy Communities in Italy is [RiCER](#), an open-source database launched in May 2024. It is the first Italian platform entirely dedicated to Renewable Energy Communities, with the aim of mapping, connecting, and enhancing the various CER models emerging across the national territory. While this project represented an important step forward in terms of visibility and knowledge-sharing, it was not an official registry. Instead, it relied on data voluntarily provided by researchers and individuals directly involved in the initiatives. As such, RiCER proved useful as a privately managed and well-organized tool, but it did not fully replace the comprehensive and authoritative information that an official list could have provided.

In October 2024, as part of this [research project](#), we conducted a survey of Renewable Energy Communities (RECs) in Italy, drawing on feedback from regional governments, lists of public grants, and gray literature. Our analysis identified 98 RECs already established, along with 1,549 REC initiatives at various stages of development across the country, for which we found at least a formal notice of intent to launch. This report underscores the crucial role of regional governments in regulating and promoting RECs. At the same time, municipalities—particularly through the involvement of mayors in small towns—often play a key role in initiating and supporting the creation of local energy communities.

In [November 2024](#), however, GSE updated its interactive map, incorporating for the first time official data on self-consumption configurations and Renewable Energy Communities (RECs). This update marked a significant step forward, as it fulfilled the role of an official registry, providing greater transparency regarding active projects across the country and allowing citizens and stakeholders to identify existing initiatives more easily.

Another important initiative was published in [March 2025 by RSE](#) (Ricerca sul Sistema Energetico), the research center affiliated with GSE. RSE released a national map of RECs based on information collected through a combination of institutional sources (including websites of Regions, Provinces, Municipalities, Unions of Municipalities, Mountain Communities, and Universities) and other public sources (such as REC promoters' websites and local newspapers). While RSE clearly stated that it does not take responsibility for any inaccuracies or omissions, the project still represents a key reference for understanding the diffusion of RECs in Italy, especially given that it was developed by a major institutional player in the national energy research landscape.

Conclusion

The diffusion of Renewable Energy Communities (RECs) in Italy has attracted growing attention since the early stages of national legislation on the matter. Starting in 2020, both Legambiente and various public institutions began monitoring and mapping these initiatives, highlighting key examples across the country. While these reports have been valuable in offering an overall understanding of the phenomenon, they have not fully met the informational needs of citizens, particularly in helping them identify which RECs they could join within their local areas.

A major step forward came only recently, in November 2024, with the official publication of the [GSE's interactive map](#), which now serves as the most useful tool for identifying active RECs throughout the country. Given the highly local and fragmented nature of many of these

communities, an accurate and reliable mapping process can only be ensured through official data.

Looking ahead, further developments may focus not just on mapping, but on analysing the most innovative REC business models, their governance structures, and the criteria that citizens might consider when deciding whether to join an existing REC or establish a new one. This evolution will be key to supporting informed participation and scaling the impact of energy communities across Italy.