

Article

The Role of Organised Civil Society in the Implementation of the Renewable Energy Transition and Renewable Energy Communities: A Qualitative Assessment

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Abstract: The study aims to understand the relationship between organised civil society and the energy transition. It is carried out by using a mixed qualitative method combining a systematic literature review, identifying the role of organised civil society within the energy transition internationally, and 18 interviews focusing on the development of Renewable Energy Communities in Italy and the potential position held by organised civil society in these collective actions which are transforming the energy system. The results demonstrate that such actors can contribute to the transition process as well as to the establishment of a new virtuous ecosystem.

Keywords: renewable energy communities; third sector; drivers; organised civil society; decentralized energy; energy transition



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1. Introduction

The link between energy systems and global warming caused by the use of fossil fuels is a widely recognised issue by the European Union and necessitates a transition to a low-carbon society [1]. This is fertile ground for the emergence of new sustainable solutions and socio-environmental initiatives. Indeed, the transition to climate neutrality cannot be achieved through technology and markets alone. It involves a transformation in which civil society will also play a crucial role [2]. Although citizens' active participation in energy projects will transform and, to some extent, is already transforming the traditional energy system, it is only recently that its configurations have been formally included within European regulations. Specifically, the "Clean Energy for All Europeans" (or "Winter Package") is a package of eight legislative proposals presented by the European Union on 30 November 2016. Notably, among these measures, the European Directive 2001/2018 (RED II) [3] introduces the concept and a formal definition of the "Renewable Energy Community" (REC) for the first time. According to article 2(16) of the aforementioned directive, "Renewable energy community means a legal entity: which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity; the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities; the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits" [3]. Therefore, a REC can be conceptualised as a crucial innovation which has the potential role of reshaping the traditional energy system. In fact, if the organisation of the electricity sector has traditionally been based on vertically integrated electric power companies, which produced, transported, and distributed energy through a unidirectional flow from generation to end-consumers, the new models of collective prosumerism are transitioning citizens away from being passive consumers and are pushing them to take an active role in distributed energy systems [4]. It is expected that

264 million European citizens will join the energy market as prosumers in 2050, generating up to 45% of the renewable electricity of the grid [5]. RECs can be considered as modes of collective prosumership and are included in those energy initiatives that Sciullo et al. (2022) [6] work on in their contribution called Collective Action Initiatives (CAIs). In particular, the aim of this relevant study is to deliver a thorough comprehension of enabling factors in the diffusion and scaling up of the Energy Community model comparing different European countries. Within this framework, one of the dimensions that are analysed is social attitudes and cooperation among citizens. The same dimension has been recently considered by Trevisan et al. (2023) [7], which identifies the social pillar (inclusive of the Third Sector) as one of the three main pillars characterising the effective implementation of Renewable Energy Communities. What emerges from the analysis of Sciullo et al. (2022) [6] is that in the Mediterranean countries, the cooperative movement has an old and well-established tradition, which made people both familiar with the legal structure and aware of its benefits. Indeed, in Italy, the first energy community initiatives date back to the early 20th century and nowadays, it turns out that most CAIs are formally organised while only 5% are defined as informally organised. On the contrary, in Eastern European countries, the cooperative movement invokes a connection with former state-run socialism and may explain the negative view of collective ownership among citizens.

Considering this, if Renewable Energy Communities are a way to demonstrate the strength of the cooperative culture and communitarian tradition that characterises several populations in the European Union, the Italian case turns out to be interesting to investigate further.

However, at the same time, one of several factors that may influence the shape and diffusion of RECs is the transposition process.

In terms of regulatory provisions, the RED II has been transposed differently, both in the timing and in the manner, by various European countries, leading to the development of various pilot projects on RECs throughout Europe. In particular, a relevant factor in the process of creating the national regulatory framework can be found in the ‘identification’ of heterogeneous actors who can potentially be part of a REC and support the energy transition. Indeed, the few contributions that the literature provided on the matter are relevant in this research since it was demonstrated that relevant actors in the Member State are not only able to influence the mere transposition process but are also relevant when policies are realised. As stated, the EU Directive states that RECs can include a set of individuals, SMEs, and local authorities, including municipal governments. The Legislative Decree 199/2021, which transposes the RED II at the Italian level, makes it explicit and expands the scope of RECs participation, stating that “shareholders or members exercising power of control may be individuals, small and medium-sized enterprises, local governments or authorities, including, municipal governments, research and educational institutions, religious, third sector and environmental protection entities as well as local governments contained in the list of public administrations disclosed by the National Institute of Statistics.” [8]. The new documentation from ARERA, released on 27 December 2022 (TIAD—Testo Integrato Autoconsumo Diffuso, within the Resolution 727/2022/R/eel), confirms increasing the arena of potential stakeholders who can take action to establish an energy community.

This paper aims to analyse the potential role of stakeholders identifiable as part of the organised civil society in the energy transition, with particular attention paid to RECs. As Italy is going to be used as a case study for what concerns the data collection through interviews, it might be useful to first provide a quick insight into the current main features of the Italian organised civil society.

Today, the ‘non-profit sector’, as analysed by ISTAT (the Italian National Institute of Statistics), is composed of a total amount of 363,499 organisations and 870,183 employees. ISTAT identifies fourteen sectors where a non-profit organisation could be inserted, as follows: culture and arts; sports; leisure and socialisation; health; social assistance and civil protection; environment; economic development and social cohesion; rights protection and

political activity; philanthropy and volunteering promotion; international cooperation and solidarity; religion; trade union-related activities; other.

Today, sports are by far the main activity of a number of organisations (119,476), while social assistance and civil protection are by far the most relevant in terms of employees (421,356). Environmental institutions, identified as organisations working on “environmental protection” and “animal protection”, are appraised to be a minor niche, accounting for just 6316 organisations and 2145 employees. However, such data does not provide relevant insights on the specific field of the energy transition, as its implementation might well be identified as part of other sectors of activities (e.g., economic development and social cohesion and education and research), and internally applied by any third-sector organisation, independently of the subject of their main field of activity (ISTAT, 2022) [9].

Anyway, it is likely that the role and inclusion of such institutions should be enhanced to meet the required change of paradigm in the energy sector described above. This aspect has so far been generally overlooked by the literature. Moreover, most of the existing studies have focused on Northern/Central European countries, while the international literature explicitly stresses that Southern European countries lag behind in the involvement of civil society in the energy transition. Starting from these considerations, the first objective of this article is to contribute to filling the gap in the literature on the role of organised civil society in the energy transition, hence identifying the kinds of contributions this set of organisations provide, their development through time, and some insight into their potential predispositions regarding future challenges. Additionally, following this outcome, the second purpose is to try to explore the potential relationship between organised forms of civil society, using Italy as a case study, and the development and implementation of RECs, which has not yet been considered in the literature, also because of the novelty of the topic. For this purpose, the rest of this paper is developed as follows: Section 2 explains the methodological approach; Section 3 reports the results, which are discussed in Section 4. Finally, the paper ends with concluding remarks in Section 5.

2. Materials and Methods

The aim of this contribution is to provide a qualitative overview of the relationship between the organised civil society, energy transition, and development of renewable energy communities.

The Research Questions (RQs) and the Sub-Research Question (SRQ) provided in this section are developed to facilitate the investigation:

RQ1: Is there a recorded role of organised civil society within the energy transition? What specific activities on behalf of this branch of society have been recorded internationally?

SRQ1: Is there an identifiable focus on behalf of organised civil society on some specific sets of activities? Does it provide us with useful insights into the role of organised civil society within the energy transition and its potential in the implementation of renewable energy communities?

RQ2: Using Italy as a case study, is it possible to foresee a role for organised civil society within the implementation of renewable energy communities?

First, it is necessary to clearly define what this study means by ‘organised civil society’, as the literature does not provide a unanimous interpretation of such a concept. According to the associationalist approach, started by Hegel, civil society should be seen as an intermediary step between families and public institutions, conceptually different from both the market and the state [10]. Here is found the use of the expression ‘Third Sector’, which in some countries (e.g., Italy) has even acquired a legal value in defining private organisations whose main purpose is of general interest. Provided more detailed conditions, such organisations can appositely register in the RUNTS (National Unique Registry for the Third Sector), hence acquiring a formal distinction from both public institutions and market-driven ones [11]. The Legislative Decree 2017/117 defines a Third Sector Organisation as “volunteering organisations, social promotion organisations, philanthropic organisations, social enterprises, inclusive of social cooperatives, associative networks, mutual assistance

societies, associations, either juridically or not juridically recognised, foundations and the other private organisations other than companies constituted for the pursue, without profit purposes, of civic, solidarity and social utility purposes ... " [11]. Despite the expression 'non-governmental organisation', it does not explicitly appear within the above 'official' definition; it is mentioned in Article 89 of the Decree and added for recognition with reference to Law 10 August 2014 n.125, which disciplines international cooperation for development and addresses the institutions involved in such a field as 'non-governmental organisations', suggesting a more international characterisation when compared to other bodies locally recognised as 'Third Sector'. When it comes to the academic context, Bebbington and Hickey (2006), while addressing the issue, distinguish the concepts of civil society (identified as a synonym of 'Third Sector' when addressing the associationalist approach) and non-governmental organisations, despite identifying several common features between the two groups of organisations. Coherently, Lewis D. (2014) [12] identifies the two concepts of 'Non-governmental Organisations' and 'Third Sector Organisations' as two concepts often addressed as different on the basis of a different spatial nature (non-governmental organisations are sometimes associated with a more international nature, while the Third Sector is usually addressed to when referring to local organisations) advocating for a more unified approach in identifying the two as one homogeneous sector. Following such considerations and to avoid risks of exclusion, this study is going to adopt the most extensive definition by including both of the two expressions in the systematic literature review that follows. This is not to be interpreted as a choice of the authors to distinguish between the two concepts but merely as a way to reduce the risk of excluding relevant sources just because of their preference towards one of the two expressions. 'Third Sector' is going to be included due to its legal value of representation of organised civil society within some jurisdictions as inclusive of all the juridical forms associated with it, as seen in its 'official' definition within the Italian context. 'Non-governmental organisation' is included because of its similar recognition and to include sources preferring such expression on the potential basis of a more international subject. Finally, it must be noted that all the above-mentioned sources tend to associate such organisations (both when addressed to as 'Third Sector organisations' and when addressed to as 'non-governmental organisations') as characterised by a non-profit attitude. This does not mean that all non-profit organisations are representative of civil society. The lack of profit purposes does not necessarily imply a general interest aim. Yet, it is without doubt very common to address both the 'Third Sector' and 'Non-governmental Organisations' as 'non-profit organisations' [12], as is also the case with ISTAT (Italian National Institute of Statistics) when collecting data about such organisations in the country (ISTAT, 2022) [9]. Even in this case, to avoid the risk of excluding relevant sources and with the provided intention of using an extensive definition of civil society representatives, even the expression 'non-profit' should be integrated within the search on the basis that if other Institutes of Statistics (usually used as references) prefer to collect data on the basis of the lack of profit purposes (as presumably easier to identify) than of other common features of the organisations of interest of this study, they should be included.

A brief definition for each of the three above expressions is provided below:

Non-profit organisation: By definition, an organisation which does not distribute potential surplus deriving from its activity to its associates.

Third sector organisation: Most definitions agree in defining it as an organisation voluntarily initiated by citizens whose activity is primarily aimed at social purposes. Despite the lack of profit purposes that are usually pointed out, it is not always a strictly imposed requisite [13].

Non-governmental organisation: Usually addressed as being most similar to a third sector organisation but characterised by a more international nature [12].

Considering the partial tendency to use these terms interchangeably and to keep the focus as broad as possible at this stage, the systematic literature review that follows is going to be inclusive of all three definitions of 'organised civil society'.

To investigate the potential role of organised civil society in addressing the energy transition and the emerging trend towards the implementation of energy communities, in this study, two main steps of analysis are carried out as follows:

First step: a systematic literature review.

The full potential of organised civil society within renewable energy communities' implementation is assessed starting from a systematic literature review of the evidence on the roles that these kinds of organisations have played in actively promoting energy efficiency and renewable energy inputs.

To identify the available literature on the role of organised civil society within the energy transition, a Scopus search has been run to identify all sources in English containing in their title, abstract, or keywords that both reference at least one of the above-identified definitions of 'organised civil society' and the word 'energy'. Figure 1 presents the basic keywords search process used in the analysis. The words in the figure have been inserted in the search, including all potential spelling options, hence the following: third sector, third-sector, nonprofit, non profit, non-profit, not for profit, not-for-profit, ngo, ngos, non governmental organisation, non-governmental organisation, non-governmental-organisation, non governmental organisations, non-governmental organisations and non-governmental-organisations.

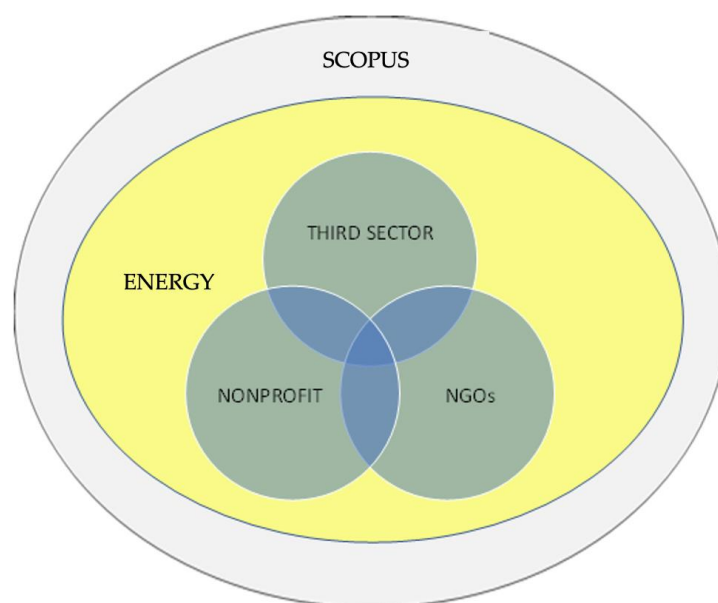


Figure 1. Structure of the Scopus search.

The purpose and content of the search is represented in Figure 1, where the blue set represents the outcome:

The papers that resulted from the literature search have then been further selected through a screening of the abstracts via the following steps:

1. The abstract and/or title makes an explicit reference to the role of non-profit organisations, Third Sector Organisations, or non-governmental organisations within the energy transition;
2. The reference is relevant to the purposes of the source (e.g., not just quickly mentioned within a broad group of actors or potential stakeholders);
3. Activities indirectly or only potentially related to the clean and renewable energy transition (e.g., energy access to the poor; addressing climate change) are discarded unless the energy transition is clearly identifiable as the purpose of the activity.

Sources respecting all the above conditions are collected to form the final sample for further analysis. Afterwards, the filtered papers undergo a deeper analysis involving the full text of the article to identify the main subject of the sources for what concerns the role of organised civil society in the energy transition.

Each source is paraphrased by the authors into one general sentence representative of the recorded role of organised civil society within the transition. For example, if a source analyses the ability of an NGO to sensitise a country's population about the use of solar panels in replacement of fossil fuels, that source will be paraphrased with a sentence similar to "Communication, sensibilisation and public awareness of the energy transition". Such sentences are going to be very general and will only focus on the content of the role played by the organisations within the transition. As will be better explained in the analysis of results, they will not specify where, when, or by which kind of energy source (e.g., solar, wind, etc.) the relevance of civil society has been recorded, but only the "what", hence the kind of contribution provided within the transition. Therefore, such contributions will carry the name of 'activities' managed by organised civil society within the transition. Their general nature and the mere focus on the content of the role (and not the time, location, etc.) will make it easier to group the sources and their records in a relatively small amount of very comprehensive activities, suitable to be analysed to develop an initial idea of the role of organised civil society within the clean and renewable energy transition.

In case more than one kind of contribution (from now on, 'activity') is recorded by the same source, the study is going to identify the main subject of the paper. Only when two or more activities have the same relevance within a source, and it is not feasible to identify one of them as 'secondary' or 'functional' to the other, will the same source be recorded for all the analysed activities.

The results are then collected in a table providing the list of activities in chronological order, using the year of publication of the oldest source for each activity as a reference and the number of sources registering each activity within the sample.

The second step consists of interviews in Italy.

Additionally, because of the consistent lack of secondary sources on the potential relationship between civil society and Renewable Energy Communities (RECs) resulting from the systematic literature review, the study has proceeded with a collection of primary information through eighteen narrative interviews (NI).

Each interview lasted about 60 min and was conducted remotely on the Lookback platform on 25, 29, and 30 November and 1 December 2022. This part of the research was undertaken in all the 'Nielsen areas' of Italy (Nielsen is a Market Research Institute based in New York); A Nielsen area is a specific geographical area in which the Nielsen research institute divides a country to carry out an analysis. According to this criterion, Italy is divided into four Nielsen areas: Area 1 includes the regions of Piedmont, Val d'Aosta, Liguria, and Lombardy; Area 2 includes Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, and Emilia-Romagna; Area 3 includes Tuscany, Umbria, Marche, and Lazio, Sardinia; and Area 4 includes Abruzzo, Molise, Apulia, Campania, Basilicata, Calabria, and Sicily. Moreover, to have a diversification of perceptions and perspectives, people involved in the interviews were profiled according to the population density of their municipality of residence:

- 6 participants living in municipalities of 30,000 to 100,000 inhabitants;
- 5 participants living in municipalities of 10,000 to 30,000 inhabitants;
- 7 participants living in municipalities of 2000 to 10,000 inhabitants.

To better understand the relationship with the territories and communities of reference, people living in municipalities with more than 100,000 inhabitants were intentionally excluded, as well as owners of photovoltaic systems, to avoid bias regarding the propensity already developed to use renewable energies. Of the total number of respondents, 10 were women and 8 were men between 30 and 70 years of age. Prior knowledge of the topic of RECs was not a criterion for sample selection.

The qualitative method of narrative interviewing was chosen because, although it can be time-intensive, through this type of research, the person being interviewed can live, relive, and tell his or her life story or autobiography from the experiences that make up his or her social and individual life [14]. Moreover, references to narratives, stories, and storytelling have become more common in energy research and policy [15] following

a ‘narrative turn’ in social sciences more generally, as well as dissatisfaction with the dominance of physical, technical, and economic representations [16]. Since NI is part of discursive interviews, it is considered a form of unstructured, in-depth interview that does not have a pre-planned set of questions, but sometimes the interviewer may have set a series of specific domains to explore from which responses will be requested or required. In the case of the present study, 5 exploration domains were defined by the researchers as follows:

- (1) Citizens’ current energy suppliers;
- (2) Citizens’ knowledge and awareness of RECs;
- (3) Citizens’ motivations, expectations, and fears in relation to RECs;
- (4) Citizens’ value of the community and organised civil society;
- (5) Conveying the RECs: Citizens’ trust and methods of communication.

All interviews, conducted in Italian, were video recorded and transcribed. Then, a narrative analysis was conducted to give a more detailed understanding of each participant’s experiences across all exploration domains of the research. Specifically, the analysis of the interviews was conducted with the tool of affinity diagrams, which is an inductive process often used in a complementary way with brainstorming or other unstructured qualitative data such as these, in order to organize the field data into common issues and themes and to find key insights [17].

Considering the purpose of this article to investigate the potential relationship between organised civil society and energy transition, even if the results of all the exploration domains will be reported, the last two exploration domains (4 and 5) from which relevant evidence and information emerged with respect to the above objective will be discussed in more detail.

Specifically, within the exploration domain ‘*The value of community and civil society organizations for citizens*’, the following subdomains were investigated: How do the interviewees experience the community? What experience do interviewees have with community projects? What experience do interviewees have with associations, non-profit organisations, and organised civil society? How do respondents experience collective effort?

Within the exploration domain “*Conveying the RECs: Citizens’ trust and methods of communication*”, the following subdomains were investigated: Where would the respondents find out about the RECs? Who would respondents inform themselves about the RECs? Who would respondents trust/not trust within society? Who should lead an energy community project, according to respondents?

3. Results

3.1. Results of the Systematic Literature Review

The search for the systematic literature review was run in October 2022 and produced 1970 sources. Titles, keywords, and abstracts were then analysed one by one to identify how many sources would respond to the above-mentioned prerequisites. Only 162 sources were filtered through the whole sample for further analysis. All these sources explicitly mention in their abstract an activity or role played by non-profit, third sector, or non-governmental organisations within the energy transition.

Therefore, the filtered sources were then analysed to properly categorise and paraphrase the main content of the activity or role played by ‘organised civil society’ as defined in the methodology.

The analysis provided 180 records of organised civil society’s involvement in the energy transition out of a total of 162 sources. These are the initial results of the systematic literature review, shown in Table 1 below.

Table 1. Main outcome of the systematic literature review.

Number of Relevant Results within the Source	Number of Sources
1	147
2	12
3	3
TOTAL	180

The analysis of each source in the literature was then provided with two main outcomes for this part of the research. First, despite the literature being enriched by an abundance of material on specific case studies and roles of organised civil society in the energy field (especially inclusive of energy access), it has not been possible to identify a paper in the sample comprehensively providing a census of all the roles played by organised civil society, as defined in this study, in the field of the energy transition. Second, it has not been possible to filter sources in the sample specifically addressing the role of such organisations in the implementation of renewable energy communities. About this last point, only three papers were identified in the initial sample that are useful for a broader discussion on the topic, but they do not match the necessary parameters to be identified as proper results. All of them were discarded while filtering proper sources as organised civil society was only quickly mentioned as potential stakeholders within a broader general list. Some implications of these partial results will be discussed at the end of this section.

To face the first gap, this section is going to order the collected results in a proper table (Table 2) providing a map of the main features characterising the role of organised civil society in the energy transition, using the activities identified by the authors by paraphrasing the main subject of the sources in the sample.

As anticipated by the methodology, the content of the analysed sources was paraphrased by the authors to determine the core of the contribution on behalf of organised civil society and provide a list of activities collected in Table 2 below.

Table 2 collects the outcome of this step of the analysis by showing the 12 activities identified by the authors, chronologically ordered by using the year of the oldest identified source. The table also shows the chronological range of the activity by adding the most recent source for each of them. It then shows the total amount of sources for each activity and the percentage weight of each activity over the total sample (by the number of total sources). Finally, it specifies the ‘type’ of organisation as mentioned by the sources, hence non-profit organisations (NPO), third sector organisations (TSO), or nongovernmental organisations (NGO). As also mentioned in the methodology, this does not consider potential (even consistent) overlaps between the different definitions of ‘organised civil society’ but only collects them as they were dominantly used by the source. An integrated table is available as Appendix A, which also includes the sources associated with each result and activity.

The outcome of the systematic literature review is useful in developing a picture of the general and main roles of organised civil society institutions in the energy transition. To simplify the overview, Figure 2 is provided below and extrapolates the main results, showing the recorded activities in chronological order (using the year of publication of the oldest source for each of them) and by a number of sources.

Table 2. Detailed results from the systematic literature review.

Chronological Order	Activity	Chronological Range		N. of Sources	% Over Total Sources	Frequency (Average Number of Sources per Year)	Type of Organization		
		First Published Source (Year)	Last Published Source (Year)				NPO	TSO	NGO
1	Partnership and cooperation in specific projects held by the energy private sector for the purposes of implementing energy savings, energy efficiency, renewable energy plants, and schemes	1982	2021	15	8.33%	0.375	8	0	7
2	Direct promotion, commercialisation, and management of clean and/or renewable energy and related plants (except for energy access purposes, which are included in macro-activity number 5)	1984	2019	13	7.22%	0.361	10	0	2
3	Internal energy reduction plans within self-managed activities and buildings	1984	2022	17	9.44%	0.435	16	0	1
4	Education and training on clean and renewable energy transition, energy efficiency, and energy savings practices	1986	2020	12	6.67%	0.342	10	2	1
5	Integrating energy access with the energy transition through technology and knowledge transfer, financial incentives (e.g., microcredit), and direct implementation of energy efficiency schemes and renewable energy plants and practices in developing countries, off-grid, and rural areas	1987	2021	39	21.67%	1.114	3	2	34
6	Research and development for renewable energy and energy efficient innovation and implementation	1988	2022	16	8.89%	0.457	12	0	4
7	Pressure, consultancy, and active participation within the development procedures of environmental law, influencing the energy transition and the development of energy efficiency regimes	1992	2022	25	13.89%	0.806	2	4	19
8	Communication, sensibilisation, and public awareness of the energy transition	1992	2013	4	2.22%	0.182	1	0	3
9	Data collection, monitoring, and assessment activities over energy efficiency, renewable energy use, and related quality/efficiency	1998	2019	5	2.78%	0.227	3	0	2
10	Opposition to the development of clean and/or renewable energy fuels, plants, and related infrastructures rising concerns for other environmental priorities (e.g., biodiversity loss), landscape or social issues	2001	2020	8	4.44%	0.4	0	0	8
11	Coordination, facilitation, and mediation within energy-efficiency and clean/renewable energy implementation projects managed by a group of different stakeholders (private companies, public authorities, local communities), except for partnerships with private companies only, included in macro-activity number 1.	2003	2021	22	12.22%	1.158	6	2	14
12	Energy efficiency and renewable energy labelling and certification	2006	2009	4	2.22%	1	3	0	1
TOT.				180	100%		74	10	96

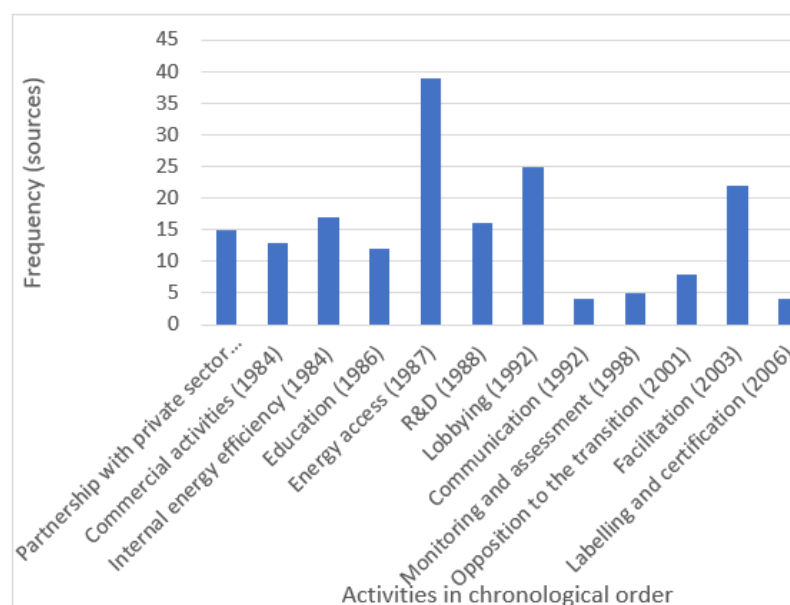


Figure 2. Activities in chronological order and related frequency in the sample (sources). See Table 2 for further details.

As will be better clarified later, RECs, which are characterised by a broad and integrated nature, might be able to benefit from several of the identified roles already played by such institutions. However, results explicitly addressing the role or qualitative potential of organised civil society within Renewable Energy Communities and their implementation are minimal in the initial sample and absent in the final filtered sample, showing a limited concern over this specific topic in the published academic literature. Three sources were identified by the whole search: (Mutani G. et al., 2019 [18]; Mutani G. et al., 2020 [19]; and Mutani G. et al., 2022 [20]). All three of them resulted in the initial outcome of the search as providing a definition of energy community as a ‘cooperative/partnership/non-profit organization of final customers (municipalities, public and private entities, and citizens) aimed at achieving energy independence to guarantee energy security, low environmental impact, and affordable energy costs’ (the same definition is included within the abstracts of all the three papers). Standing by the adopted methodology, being the ‘non-profit organisation’ citation only part of a theoretical definition in a broader list of possibilities, the sources were not admitted to further analysis and inclusion in the final sample. Interestingly though, it is worth noticing that the papers, beyond sharing a common author, were all developed with the participation of an Italian institution, thus suggesting Italy to be a potentially interesting case study. The study then proceeds with showing the results from the interviews in Italy, aimed at developing a first insight into this niche of research. Apart from these considerations on the specific matter of renewable energy communities, further features and trends from an interpretation of the results collected in Table 2 are presented in the ‘discussion’ session.

3.2. Results of the Interviews

Here, the potential relationship between the organised civil society, energy transition path, and development of RECs in Italy is discussed using the results of the interviews. The use of narrative interviews allowed people’s beliefs and opinions to be expressed, capturing the multiple interpretations one can have about the dynamics, drivers, and influencers in relation to the topic of energy communities.

The first domain of exploration, *Citizens’ current energy suppliers*, was conceived as an introductory one and was aimed to investigate the scenario regarding what respondents look at and evaluate about the suppliers currently chosen, which turned out to be quite articulated. The scenario of chosen suppliers by the interviewees turned out to be quite

articulated, and it includes the following: Enel energia (5); Eni (3); Servizio elettrico nazionale (2); A2A (2); Edison (1); Sorgenia (1); E.On (1); NeN (1); Illumia (1); Camer (1); WeKiwi (1); Dolomiti (1); and Vivigas (1). It is important to emphasise that most of the participants stated that they had signed a single contract with the same operator for the supply of electricity and gas. In this respect, the single bill (electricity and gas) is a valid solution, as it can guarantee several advantages such as streamlining the processes of activation, monitoring consumption, and reporting faults or malfunctions or the possibility of accessing preferential tariffs when signing a single contract for both supplies: *“The fact that only one bill arrives is handy.”* (Raffaele).

As described in the methodology, the study excluded owners of solar panels but instead investigated the respondents' evaluation and willingness to adopt them. According to some participants, the installation of a photovoltaic system requires a lot of bureaucracy, especially to take advantage of existing state tax benefits. For these participants, the main disadvantage of adopting these technologies coincides with the need to incur onerous costs for the installation and maintenance of the systems: *“Facing the expense alone . . . I don't know. With subsidies from the state, it would already be more feasible.”* (Donatella); *“It takes courage, because the initial outlay is expensive.”* (Raffaele)

Going into the core topic of the interviews explored by the domain *“Citizens' knowledge and awareness of RECs”*, even if all interviewees showed a fair amount of knowledge about renewable energy and the benefits of adopting renewable energy, only a few of them knew about RECs, and only by hearsay. Specifically, only three participants had heard of them. However, all respondents were given a formal definition of the concept of a renewable energy community based on the requirements of national regulations to allow for minimal bias. Following the appropriate explanations provided by the interviewers competent in the field, in the perception of 12 out of 18 participants, the link between the establishment of energy communities and the concept of energy transition was significant. In this regard, according to these participants, energy communities play a salient role in the transition towards the adoption of renewable energy: *“The energy transition is the goal. Energy communities could be the cornerstone on which this transition process is set”* (Raffaele). Generally, for the participants, the term ‘community’ evoked concepts such as interdependence between community members, democratic management, and belonging to a reality based on the values of cohesion and collaboration.

It is significant, in this regard, to point out that within the third explored domain, *Citizens' motivations, expectations and fears in relation to RECs*, one factor that would induce participants to abandon a REC is the perception that the initial values may have changed in favour of the pursuit of economic ends: *“If the initial intent was lost, if there was a mismatch between the idea and the realisation, the disappointment would probably be so great that I would reconsider the project.”* (Sandra). A further hindering factor is the perception that supplier companies may omit information or lack transparency to pursue economic ends.

Concerning the domain *‘The value of community and civil society organizations for citizens’*, cross-sectional evidence is that in the areas in which the participants are acting, there are phenomena of social exclusion as well as a strong individualist component. Nonetheless, during the sessions, most participants reported doing volunteering activities aimed at reducing social hardship and enhancing their local area, while none of the subjects involved reported carrying out activities on behalf of organised civil society in the specific area of the energy transition. Some participants said they serve at oratories or local associations, while others said they espouse nationwide causes: *“We are part of an association that organizes events on the territory. It is a group that organizes nature walks within the Sabine territory. [. . .] My husband is a catechist”* (Donatella).

The perceived benefit of participants in operating volunteering activities coincides with the opportunity to provide selfless help to those in need as a source of value both to others and to themselves: *“I feel it as a valuable duty, and it makes me feel good. Offering one's availability, each for the means one has, should be a pleasure.”* (Sandra). On the contrary, those who stated that they do not carry out volunteering activities or do not belong to

some form of organised civil society identified the lack of time to devote to these activities and the absence of a real connection with their local area as the main hindering factor to participation in these activities: *"My wife is more actively involved in volunteering work. She is not working at the moment, so she has more time."* (Giorgio); *"Here everyone lives on their own. Everyone makes their own life."* (Erika). Analysis of data on respondents' predisposition to participate in collective life allowed the authors to infer a positive correlation between this factor and the propensity to join a REC. In this regard, participation in voluntary activities in the area turns out to be a significant predictor of willingness to join a REC. Above all, those who espouse values such as "solidarity", "collaboration", "altruism", and "social justice" were found to be willing to join a community and, in some cases, even to constitute it: *"Collaboration among people brings value to the community"*, (Gloria)

Concerning the domain *"Conveying the RECs: Citizens' trust and methods of communication"*, it is important to state at the outset that trust is associated with voluntary behaviours and proves to be fundamental to a REC's dynamics, the outcomes it can achieve, and its process of setting up [21], which from a normative point of view takes place by the voluntary decision of its members. It is interesting to note, for the purposes of this research, that some participants reported that they had turned to trusted associations or organisations for information on renewable energy devices. These types of information sources were perceived by the participants as 'authoritative' in that they were able to inform and guide consumers in their purchasing choices. *"I would go to Altroconsumo⁸ first. I know how much I can trust them."* (Fabio). Many participants cited the possibility of interfacing with people who have already had a similar experience as their primary source of information on RECs. According to these participants, direct confrontation with these individuals would allow them to highlight the strengths and weaknesses of the communities, the results achieved in terms of energy efficiency, and possible solutions to persistent problems in this area. *"I would turn to people who are going through a similar experience. They can give you more information on how they are. I would trust them because their judgements are impartial."* (Emanuele); *"A good source of information could be people who have already activated a community. I would have direct information from those who have no interest."* (Nietta). Thus, third parties in the society or parties considered to be 'peers' were found to be more reliable than, for example, energy suppliers.

As far as the leadership of energy communities is concerned, the insight analysis inferred that the role of promoter should be entrusted to the mayor or a representative of the local authorities, while the role of guide should be entrusted to a competent technician. Indeed, with respect to the promotion of RECs on the territory, the idea of most participants is that the role of promoter should be entrusted to the mayor or to representatives of the local authorities, such as assessors or city councillors. In the participants' perception, entrusting this role to a figure such as the mayor would make it possible to reach many people and give reliability to the conveyed information. Other participants reported that it would be advisable to entrust this role to the parish priest since he is the head of an existing community. In this regard, if the parish priest were to take on the role of promoter of an energy community, he would be able to reach broad and diverse targets. The participants' judgement of who should assume the role of guide and operational management of a community appeared unanimous. Indeed, almost all the participants indicated that they would entrust this role to a technician, someone who is operational and competent in the field and who has already gained experience in this area.

Considering these findings, ensuring a triangular relationship between local authorities, organised civil society, and the private sector could be effective for the involvement of citizens within RECs.

4. Discussion

The results from the Systematic Literature Review offer a comprehensive mapping of the role of organised civil society within the energy transition that provides several

new insights into its historical trend and content, plus the confirmation of some previous considerations from the literature on the topic from an organisational perspective.

From a chronological perspective, assuming the literature properly follows operational development, it might be the case that the sector practically acquired technical and direct involvement (the first three activities in chronological order are indeed forms of support to or direct implementation of energy plans) before using related experience and skills in more educational and socially related actions (education, energy access and research). Soon after, the sector actively became involved in activities characterised by a more political approach (lobbying and public communication campaigns in favour of the energy transition or opposed to it). More recently, there appears to be a growing acknowledgement of roles that see organised civil society as an active stakeholder within more comprehensive partnerships for projects generally identified as of public or social relevance (facilitation and coordination). It is hard to say whether this chronological order is due to the effective evolution of organised civil society within the energy transition or the evolution of the attention of the literature to the different spheres of activities independent of organised civil society.

From a content perspective, the most relevant activity in terms of the number of sources addressing it refers to actions that integrate the energy transition with energy access in rural and/or poor areas, followed by lobbying for political decision-making and partnership with multiple stakeholders. The least relevant activities in terms of the number of available sources appear to be also among the most recently addressed by the literature, hence data collection and monitoring, labelling, and, more unexpectedly, communication. This classification might also be due to the adopted methodology. Communication might be easily identified as a secondary activity in support of a primary one (e.g., a communication campaign in favour of commercial promotion or for education purposes). However, the chosen methodology opted for the exclusion of consideration of secondary activities functional to primary ones.

From an organisational perspective, it has already been noted that non-profit, third sector, and non-governmental refer to different concepts that might likely (and often are) integrated into the same organisations [12,13]. However, distinguishing the three concepts here is still useful to develop a map showing in which set of activities they appear to be more pronounced. Table 2 shows that organised civil society is dominantly mentioned under the form of NGOs, particularly in activities 5, 7, 10, and 11, hence suggesting a more international nature of such activities, which is in line with Lewis et al. (2014) [12]. Activity number 5, given its inherently international nature (many of the analysed sources addressed international organisations supporting energy access in developing countries) and the being the highest ranked in terms of the number of sources, seems to confirm the assumption also noted by Lewis et al. (2014) [12] and Bebbington and Hickey (2006) [10] that NGOs are associated with an international and transnational sphere of action. Non-profit organisations, despite being less frequently mentioned in the total sample, appear to be dominantly mentioned in all other activities, showing high confidence in the lack of profit purposes on behalf of organised civil society for these activities but less confidence with regard to other factors, such as independence from the public authority or the exclusive involvement in public interest activities. The minor reference to Third Sector Organisations might be due to several reasons, such as a simple lack of use of the term against more consolidated definitions.

When it comes to the interviews, the preliminary outcomes contribute to enriching existing behavioural theories on actor motivation to join collective energy actions. In particular, our findings line up with those studies that take into account trust or collective values as crucial drivers to consider in the development of these initiatives, such as Karkbrenner and Roosen (2016) [22]. The results happened to be also complementary to the findings from the Systematic Literature Review, facing the lack of sources specifically addressing the organised civil society-RECs nexus and providing some initial insights into the interrelation between the two subjects. This also supports the choice on behalf of the

Italian legislator to include the Third Sector as a stakeholder in the implementation of RECs, initially overlooked by the European Union legislator. First, the findings showed that reducing bureaucratic burdens at all scales could ease the successful operation of the energy transition. It might be relevant to the degree to which it might generally be harder for civil society organisation bodies (as usually smaller and less structured) to deal with complex bureaucratic issues than for a company with its own legal department.

At the same time, cognitive barriers, such as low knowledge of the RECs, also represent a key obstacle faced by respondents. This issue opens a reflection on the importance of analysing, defining, and systemising the roles of the different stakeholders involved in a multi-actor perspective which could be crucial for the success of a community project [23], considering also that the results of the interviews themselves show that, throughout the whole REC process different actors may be perceived as best suited to play different roles. This perception is certainly influenced by the element of trust, which already emerged as a crucial factor in projects promoting renewables locally in Walker et al.'s study [24].

In this respect, as mapped in the systematic literature review, having education and training on clean and renewable energy transition is identified as one of the activities on behalf of organised civil society in the energy transition. Strengthening the competencies of these entities in the specific area of RECs could reinforce the development of these initiatives and consequently support citizens' participation and engagement in the energy system.

An important function could here be played by entrepreneurial networks, universities and research centres, and foundations of banking origin, which could create specific training courses on the subject dedicated to training less competent organised civil society bodies to enhance their role.

Another crucial point that emerged from the interviews was that there would seem to be "elective affinities" between the perceived idea of the REC and the nature or the characteristics of organised civil society. Indeed, another insight from the interviews is that the group-based character of many organised civil society bodies on the ground is particularly conducive to the establishment of favourable behaviours for the development of RECs. Civil associations, for example, could contribute to the reproduction of social norms, values, and practices on which the new decentralised energy systems, of which energy communities are emblems, are based, as also suggested by the behavioural economics literature on the positive correlation between, for instance, NGO membership and prosocial behaviour [25].

Therefore, in several respects, organised civil society can be an important source of reflexivity in the development of RECs and in the energy transition path. Decentralisation and territorialisation of energy production focus on responsibility not only for the kind of energy but also on the achievement of the objectives of social justice, inclusion, socio-economic equality, and governance. RECs represent a framework of examples that are particularly attentive to the issue of fair transition where it is crucial to observe the role played by organised civil society with interests that consequently could direct the mobilisation of both financial and intangible resources. Unlike the previous system focused more on the big energy industry and their interests, in this new context, it is functional to involve citizen associations, relevant NGOs, and third sector entities in the energy policy-making process, which is also the second most recorded activity within the systematic literature review's outcome (7th in chronological order).

Following these considerations, despite a comparison of similar roles by other actors (e.g., for-profit companies) that should be considered to have a full picture, the results show at least a high proportional presence of such organisations where energy management is associated with more strictly social issues, which well suits with the integration of the social and environmental spheres associated with energy communities by Sciuillo et al. (2022) [6] and the importance attached to the social pillar of RECs implementation on behalf of Trevisan et al. (2023) [7]. It is also fair to assume such circumstances are also characterised by fewer market opportunities, where for-profit corporations might be less interested in getting involved, such as poor or off-grid communities that might not be able to face the

market price of renewable energy plants. Especially in such cases, public administrators willing to implement renewable energy access strategies (inclusive of RECs) characterised by a high social content might be willing to consider the involvement of such organisations. This involvement might be multifaceted and refer not only to the implementation of plants for the development of energy access policy but also to the project development, coordination, and facilitation in the implementation of strategies, as organised civil society appears to also have a proportionally relevant experience (respectively, activities 2 and 3, as classified by the number of sources, together account for 26.11% of the total available sources), that might be particularly useful in the case of RECs, given their novelty and general lack of specific experience of their implementation on behalf of stakeholders. Finally, organised civil society might also consider the beneficial effects of incentivising the transition or promoting and/or joining a REC through their own self-managed buildings, where they can autonomously decide and grant a higher resilience for themselves and other potential beneficiaries, especially in the case of social housing (the activity ranked 4th by a number of sources).

The study is subject to some limitations. For what concerns the mapping of all groups of activities through the systematic literature review and related analysis, two main limitations were identified. First, despite English increasingly becoming the dominant language, especially in academic literature, there might be relevant sources simply excluded by the analysis because they were published in a different language. Secondly, there might be other ways to refer to organised civil society apart from the ones considered in the search, or they might have been relevantly considered in sources not mentioning them directly in the abstract, title, or keywords (e.g., by addressing the private sector in general in the abstract but then proposing relevant research in the branch referring to organised civil society). Connected to this second limitation, the lack of homogeneity in clearly defining what organisations should be representative of civil society and the differences due to legislation or terminological habits inevitably include the risk of including results of sources claiming to address such kinds of organisations, while the claim would not necessarily be supported unanimously by the specialised academic community. Nevertheless, for this piece of research, the authors have chosen to prefer a highly inclusive concept of ‘organised civil society’ that might be easier to potentially adapt to more stringent definitions or niches in further research.

For what concerns the interviews, this section was related to a few individual cases that do not represent the entire category of Italian households. This may limit the generalisability of the results that are intended to be just the beginning of a yet unexplored topic. It is, of course, possible that further insights might be gained by a quantitative study.

5. Conclusions

The study provides a comprehensive map of the recorded role of organised civil society within the energy transition challenge. To the authors’ knowledge, this is the first comprehensive assessment of this kind addressing organised civil society internationally.

The outcome of the systematic literature review shows this niche of society has already collected a multi-faceted experience in the transition, positively answering the first research question, and suggests its contribution to be present both where environmental concerns are coupled with more social ones and where environmental ones are the primary or only concern, hence answering the first sub-research question while providing its overall contributions and related weight, given the available sources. Despite the differentiation among third sector, non-profit, and non-governmental organisations must be treated and interpreted with caution (as explained, they do not necessarily refer to different kinds of organisations, but often to different concepts included within the same organisations); the study also provides some insights about what activities are more likely to be undertaken by what kind of organisation and indirectly about the tendency on behalf of each activity to be locally or internationally oriented. This might be encouraging for many potential third sector, non-profit, and non-governmental organisations willing to provide their

contribution within the challenge, which appears to be already met by organisations with different aptitudes, concerns, and specialisations, plus providing some inherent suggestions on what contributions they might be more likely to provide.

The multi-faceted role and the coupling of social and environmental concerns within the transition on behalf of organised civil society revealed by the systematic literature review seems to be particularly coherent with the inherent nature of Renewable Energy Communities, whose role might consistently increase in the coming future. As the final sample of sources did not contain any specific contribution addressing this specific but potentially relevant topic, the study collected and analysed the primary data from the narrative interviews to households to face this gap and verified this hypothesis using Italy as a case study. Sticking to the authors' knowledge and to the outcome of the systematic literature review, this is the first primary data collection of this kind, providing an insight into the organised civil society/RECs nexus.

The outcome of the interviews complements the systematic literature review well, answering the second research question while showing a good potential of organised civil society in different implementation steps of RECs as potential providers of mediation and facilitation towards civil society's involvement (also one of the most recorded activities in the sample with regard to the energy transition in general) and because of an inherently social and cohesive aptitude that relates well to the nature of RECs, which appears to be confirmed by a higher tendency to join a REC on behalf of respondents that have direct experience in organised civil society bodies. Moreover, it appears RECs themselves have so far been set up under the legal form of a non-profit association.

Coupling the systematic literature review and the interviews' results, the study provides an initial and comprehensive framework of the role of third sector, non-profit, and non-governmental organisations in enhancing the next generation of prosumers, considering both their acquired experience in coherent activities within the broader energy transition and the expectations proposed by potential prosumers towards such organisations. While doing so, the analysis also indirectly suggests what functions these organisations might be better or worse suited to undertake among the group of main stakeholders and might be a useful complement to similar studies developed on other actors as the main subject of analysis, such as private companies and public authorities.

Finally, despite further research being needed to confirm the results and their interpretation, the study might be of help and inspiration for these alternative stakeholders that might be willing to promote or implement a Renewable Energy Community or other coherent projects in support of the energy transition, especially when they might be interested in or favoured by the involvement of organised civil society bodies in those steps of the implementation that they might be better placed to pursue. This appears to be particularly the case where the environmental concern is coupled with the social one, where comprehensive and inclusive policymaking is suggested, or where trust and facilitation in involving civil society are needed to grant the project a successful outcome.

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Appendix A

Activity (by First Recorded Source)	Sources (in Chronological Order for Each Activity)	Nature of the Organisation(s)
1. Partnership and cooperation in specific projects held by the energy private sector for the purposes of implementing energy savings, energy efficiency, renewable energy plants and schemes	Egel, K.S., 1982 [26]	NPO
	Jones, T., 1997 [27]	NPO
	D’Addario, P.J., 2000 [28]	NPO
	Fletcher, S., 2003 [29]	NGO
	Rondinelli, D.A., and Morrison, J.P.A., 2005 [30]	NPO
	Krieger, K. and Rogers, M.B., 2010 [31]	NGO
	Kranhold, M., et al., 2010 [32]	NGO
	Schöning, M., 2013 [33]	NGO
	Bruce, A.B. and Shwom, R.L., 2015 [34]	NPO
	Shwom, R., 2015 [35]	NPO
	Maclean, L.M., and Brass, J.N., 2015 [36]	NGO
	Weisbrod, A., et al., 2016 [37]	NGO
	Batruch, C., 2017 [38]	NGO
	Lyakhov, A., and Gliedt, T., 2017 [39]	NPO
2. Direct promotion, commercialisation, and management of clean and/or renewable energy and related plants, except for energy access purposes, which are included in activity number 5.	Vigurs, C., et al., 2021 [40]	NPO
	Luster, S.G., and Shirley, L.E., 1984 [41]	NPO
	Hester, S., and Bensley, W., 1999 [42]	NPO
	Kinsman, J.D., et al., 2000 [43]	NPO
	Crommelin, G.A.K., and Crommelin, W.F., 2004 [44]	NPO
	King, A., 2009 [45]	TSO
	Pastore, T., and Ignatova, M., 2010 [46]	NPO
	Osterwood, K., et al., 2011 [47]	NPO
	Robertson, R.S., and Burton, L., 2013 [48]	NPO
	Berry, D., 2013 [49]	NPO
	Ranalli, A., and Borean, C., 2013 [50]	NPO
	Schöning, M., 2013 [33]	NGO
	Pitt, D., and Congreve, A., 2017 [51]	TSO
	Vaidyanathan, G., et al., 2019 [52]	NPO
3. Internal energy reduction plans, within self-managed activities and buildings	Zachar, S., 1984 [53]	NPO
	Aldrich, R.A., and Owens, D.K., 2004 [54]	NPO
	Sami, V., et al., 2005 [55]	NPO
	Givler, T., et al., 2006 [56]	NPO
	Tinker R.R., and Lowstuter, B., 2007 [57]	NPO
	Milligan, V., et al., 2009 [58]	NPO
	Cheek J. et al., 2011 [59]	NPO
	Nicol, L.A., et al., 2012 [60]	NPO
	Nieboer, N. et al., 2014 [61]	NPO
	Matisoff, D.C. et al., 2014 [62]	NPO
	Post, N.M., 2015 [63]	NPO
	Filippidou, F., et al., 2016 [64]	NPO
	Filippidou, F., et al., 2017 [65]	NPO
	Fastenrath, S., 2018 [66]	NPO
	Escribano-Escribano, A. et al., 2019 [67]	NGO
	Van Der Bent, H.S., et al., 2019 [68]	NPO
	Van der Bent, H.S., et al., 2022 [69]	NPO

Activity (by First Recorded Source)	Sources (in Chronological Order for Each Activity)	Nature of the Organisation(s)
4. Education and training on clean and renewable energy transition, energy efficiency and energy savings practices	Wiesehuegel, R.E., 1986 [70]	NPO
	Andersen, N.T., 1986 [71]	NPO
	Winters, K., and Dickinson, P., 1999 [72]	NPO
	McLaughlin, M., and Riley, D.N., 1999 [73]	NPO
	Neuwirthová, P., 2000 [74]	NGO/NPO
	Ibrahim, K. and Hilme, K.R.A., 2006 [75]	NPO
	Safieh, J., et al., 2011 [76]	NPO
	Fontaine, J.-M., et al., 2016 [77]	NPO
	Smith-Nonini, S., 2016 [78]	NPO
	Barker, D.C. et al., 2017 [79]	NPO
	Mairinger, M., 2019 [80]	NPO
	Pimmer, C., et al., 2020 [81]	NGO
5. Integrating energy access with the energy transition through technology and knowledge transfer, financial incentives (e.g., microcredit) and direct implementation of energy efficiency schemes and renewable energy plants and practices in developing countries, off-grid, and rural areas	Moore, B., 1987 [82]	NGO
	Thornbloom, M. et al., 1997 [83]	NGO
	Dutta, S. et al., 1997 [84]	NGO
	Balakrishnan, L., 1997 [85]	NGO
	Jacobson, A., et al., 2000 [86]	NGO
	Biswas, W.K. et al., 2001 [87]	NGO
	Otieno, D., 2002 [88]	NGO
	Musaffer, N., 2005 [89]	NGO
	Ahmed, F.U. et al., 2005 [90]	NGO
	Balint, P.J., 2006 [91]	NGO
	Patlitzianas, K.D., et al., 2007 [92]	NGO
	Muñoz, J., et al., 2007 [93]	NGO
	Commene, M., 2009 [94]	NGO
	Baruah, B., 2010 [95]	NGO
	Nfah, E.M. and Ngundam, J.M., 2012 [96]	NGO
	Platonova, I., 2012 [97]	NGO
	Platonova, I., 2013 [98]	NGO
	Kemeny, P. et al., 2014 [99]	NGO
	MacLean, L.M., et al., 2015 [100]	NGO
	Subramanian, R., 2015 [101]	TSO
	Maclean, L.M., and Brass, J.N., 2015 [36]	NGO
	Kummitha, R.K.R., 2018 [102]	TSO
	Kruckenberger, L.J., 2015 [103]	NGO
	Munro, P., et al., 2016 [104]	NGO
	Fontaine, J.-M., et al., 2016 [77]	NPO
	Simmet, H.R., 2018 [105]	NGO
	Ahlborg, H., 2018 [106]	NGO
	Cristiano, S., and Gonnella, F., et al., 2019 [107]	NGO
	Cholez, C., and Trompette, P., 2019 [108]	NGO
	Dauenhauer, P. et al., 2019 [109]	NPO
	Escribano-Escribano, A. et al., 2019 [67]	NGO
	Lo, K.W.K. et al., 2019 [110]	NGO
	Agarwal, S.K., et al., 2020 [111]	NGO
	Pimmer, C. et al., 2020 [81]	NGO
	Budiman, I. and Smits, M., 2020 [112]	NGO
	Sharma, A., 2020 [113]	NGO
	Riva, F., 2020 [114]	NGO
	Barnes, K. et al., 2021 [115]	NGO
	Duran, A.S., and Sahinyazan, F.G., 2021 [116]	NPO

Activity (by First Recorded Source)	Sources (in Chronological Order for Each Activity)	Nature of the Organisation(s)
6. Research and development for renewable energy and energy efficient innovation and implementation	Rogers, L.J., et al., 1988 [117]	NPO
	Burnett, W.M., et al., 1989 [118]	NPO
	Gregor, J.G., and Griffis, C.H., 1991 [119]	NPO
	Lennard, D., 1993 [120]	NPO
	Manzella, A. and Dickson, M., 2003 [121]	NPO/NGO
	Tanzil, D., et al., 2004 [122]	NPO
	Paulson, L.D., 2005 [123]	NPO
	Jaeger, H., 2005 [124]	NPO
	Quale, J., 2006 [125]	NPO
	Ibrahim, K. and Hilme, K.R.A., 2006 [75]	NPO
	Lo, K.W.K. et al., 2019 [110]	NGO
	Lopez, C.W., et al., 2019 [126]	NPO
	Pellow, D.N., et al., 2022 [127]	NGO
	Sanders, F., and Overtoom, M., 2022 [128]	NGO
	Tonge, T., 2022 [129]	NPO
	McGookin, C., et al., 2022 [130]	NPO
7. Pressure, consultancy, and active participation within the development procedures of environmental law, influencing the energy transition and the development of energy efficiency regimes	Dooge, J.C.I., et al., 1992 [131]	NGO
	Sands, P., 1992 [132]	NGO
	Welp, M., 2001 [133]	NGO
	Kravchencko, S., 2005 [134]	NGO
	Brown, J.W., 2008 [135]	NGO
	Dick, K., 2008 [136]	NGO
	Grenier, L.L., et al., 2008 [137]	NGO
	Pilgrim, S. and Harvey, M., 2010 [138]	NGO
	Hauger, J.S., et al., 2014 [139]	NGO
	Steffek, J., and Romeiro, V., 2016 [140]	NGO
	Pitt, D., and Congreve, A., 2017 [51]	TSO
	Argyriou, I., et al., 2017 [141]	TSO
	Grant, D., and Vasi, I.B., 2017 [142]	NGO
	Lyakhov, A., and Gliedt, T., 2017 [39]	NPO
	Ince, R., 2019 [143]	TSO
	Bentsen, N.S. et al., 2019 [144]	NGO
	Živčič, L., and Tkalec, T., 2020 [145]	NGO
	Hilpert, J.-M., and Scheel, O., 2020 [146]	NPO
	Budiman, I., and Smits, M., 2020 [112]	NGO
	Van der Waal, E.C., et al., 2020 [147]	NGO
	Brauers H. et al., 2020 [148]	NGO
	Leiren, M.D., et al., 2021 [149]	NGO
	Sillak, S., et al., 2021 [150]	TSO
	Böhler, H., et al., 2022 [151]	NGO
	Hielscher, S., et al., 2022 [152]	NGO
8. Communication, sensibilisation and public awareness of the energy transition	Tinker, J., 1992 [153]	NGO
	Silvi, C., 2007 [154]	NPO
	Hossain, M.S., et al., 2011 [155]	NGO
	Lin, S.-P., 2013 [156]	NGO
9. Data collection, monitoring and assessment activities over energy efficiency, renewable energy use and related quality/efficiency	Van Der Plas, R.J., and Hankins, M., 1998 [157]	NGO
	Nambiar, R.O., et al., 2009 [158]	NPO
	Moore, B., et al., 2014 [159]	NPO
	Schaeffer, G.J., 2015 [160]	NGO
	Dauenhauer, P., et al., 2019 [109]	NPO

Activity (by First Recorded Source)	Sources (in Chronological Order for Each Activity)	Nature of the Organisation(s)
10. Opposition to the development of clean and/or renewable energy fuels, plants, and related infrastructures rising concerns for other environmental priorities (e.g., biodiversity loss), landscape or social issues	Li, F., 2001 [161]	NGO
	Bartle, A., and Isambert, F., 2001 [162]	NGO
	Svensson, B.S., 2004 [163]	NGO
	Mathews, J.A., 2008 [164]	NGO
	Delicado, A., et al., 2014 [165]	NGO
	Rodela, R., et al., 2017 [166]	NGO
	Langerman, K.E., 2019 [167]	NGO
	Fajri, H., et al., 2020 [168]	NGO
11. Coordination, facilitation and mediation within energy-efficiency and clean/renewable energy implementation projects managed by a group of different stakeholders (private companies, public authorities, local communities), except for partnerships with private companies only, included in macro-activity number 1.	Sundhararajan, S., et al., 2003 [169]	NPO
	Mapako, M.C., 2005 [170]	NGO
	Blumstein, C., et al., 2005 [171]	NPO
	Patlitzianas, K.D., et al., 2007 [92]	NGO
	Miranda, M., et al., 2007 [172]	NGO
	Muñoz, J., et al., 2007 [93]	NGO
	Schöning, M., 2013 [33]	NGO
	Basaev, B.B., et al., 2016 [173]	NPO
	Osti, G., 2016 [174]	NPO
	Picciotti, A., 2017 [175]	TSO
	Carrión, D. et al., 2018 [176]	NGO
	Simeoni, F., and De Crescenzo, V. 2018 [177]	NPO
	Bruce, A. and Shwom, R., 2018 [34]	NGO
	Kivimaa, P., et al., 2019 [178]	NGO
	Lo, K.W.K. et al., 2019 [110]	NGO
	Pimmer, C. et al., 2020 [81]	NGO
	Živčič, L., and Tkalek, T., 2020 [145]	NGO
	Qudrat-Ullah, H. et al., 2020 [179]	NGO
	Argyriou, I., 2020 [180]	TSO
	Lee, Y., et al., 2020 [181]	NGO
	Van der Waal, E.C., et al., 2020 [147]	NGO
12. Energy efficiency and renewable energy labelling and certification	Carley, S., et al., 2021 [182]	NPO
	Muse, A., and Plaut, J.M., 2006 [183]	NPO
	Cidell, J., 2009a [184]	NPO
	Cidell, J., 2009b [185]	NPO
	Rohracker, H., 2009 [186]	NGO

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