

Editorial

Collective Action Initiatives as a Tool for a Peaceful Energy Transition

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In recent years, collective action initiatives in the energy field, such as energy communities and cooperatives, have been gaining relevance both in the policy and in the social research domains as primary actors of energy transition. In terms of policies, they represent a primary solution to engage and empower citizens in order to expand their role in the design and implementation of energy transition strategies. In terms of research, they have become one of the most prominent objects of investigation for those social scientists mostly concerned with the climate crisis and interested in investigating its dynamics and interactions with the current socio-economic model as well as in exploring potential solutions. In fact, hundreds of articles have been published in recent years, all having aimed to investigate the way in which energy communities and cooperatives arise from civil society and, at the same time, their contribution not only to energy transition but also to the mechanisms through which they seem able to trigger wider forms of social innovation.

While global energy transition is becoming more and more necessary due to the fact that “fossil wars” are becoming a plausible landscape to forcefully shift away the energy transition future, it is also worth to highlight that this transition should not be only considered as a technical exploitation of Renewable Energy Sources (RESs). Our consideration of this transition also must take wider social aspects into consideration. Sustainable energy transition must rely (and actually relies) not only on technical aspects such as the use of digital dispositives, sensors, AI, blockchain, and new electric lines, but also on how these technologies are designed and promoted and by which actors they are delivered and governed, to what extent they are socially co-produced, and what impacts they (and the transition itself) might have on many social aspects and dynamics such as, to name a few, the satisfactory provision of energy for all (including marginal groups), a solution to the energy poverty challenge, the protection and promotion of fair jobs, the governance of the energy system, and the resulting power distribution.

Considering this complexity, the concept of transition applied to energy deserves a more accurate definition that can be usefully adopted in the design of policies and actions aimed at real transformation. Transition is a different concept to transformation or change. Change is an adaptive evolution of a system to new configurations of productive forces, to new trends in the international division of labour, to new social demands, and perhaps to new socio-ecological configurations. In comparison, transition is a very particular phase in the evolution of a society. It is the phase in which it encounters increasing difficulties, internal and/or external, in relation to reproducing the economic and social system on which it is based and begins to reorganize itself, essentially quickly and violently, on the basis of another system, which finally becomes, in turn, the general form of the new conditions of existence.

Collective action initiatives can play a role in shaping these new conditions, and the research agenda that is going to be drawn in this field of research is creating interesting



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new horizons regarding energy transition policies towards a zero-carbon energy system. Given the criticality we are all facing, the goal of this body of research needs to be not only conceived as a crucial advancement in the scientific field of SSH, but it should also try to gain due attention from EU institutions, national governments, enterprises, and global and local policy makers regarding the fundamental roles that energy communities and suchlike can play in the energy transition.

Here, we present seven articles that had very relevant research objectives and were designed with the aim to enrich or to challenge the current research regarding energy transition, providing new topics, tools, and epistemological frames led by SSH competences. The richness of the topics surveyed by the authors is undoubtedly interesting, providing a huge horizon of research pathways for the future. These papers present innovative content in terms of the methodology adopted and the themes of the research collected. We tried to avoid the common conventionality that marks the literature concerning energy community, in that is often delivered to the reader without effective criticisms, for example trying to challenge individual or market approaches by proposing a holistic approach. The papers included in this Special Issue provide different contributions from different disciplinary areas, which aimed to provide a better understanding of transitions to renewables-based energy systems.

The aim of the contribution from Sciullo et al. [1] was to deliver a thorough comprehension of enabling factors in the diffusion and scaling up of the Energy Community (EC) model. It did so by analysing the evolutionary trajectories of six EU countries (Belgium, Estonia, Italy, The Netherlands, Poland and Spain) regarding three dimensions: energy systems (i.e., energy mix and market structure); institutional and policy landscape (i.e., regulatory frameworks and the historical evolution of ECs); wider social attitudes towards environmental issues and cooperation among citizens. The authors examined the relationship between the liberalization of the electricity sector and the energy transition, showing how the different degree of liberalization in each country has strongly affected the market structure and the related opportunities for innovative actors. They also underlined the role of societal attitudes towards the cooperative model. In the Mediterranean countries of Italy and Spain, and more so in Belgium and the Netherlands, the cooperative movement has an old and well-established tradition, which made people both familiar with the legal structure and aware of its benefits. In Eastern European countries (in this case, Estonia and Poland), the cooperative movement invokes a connection with former state-run socialism and may explain the negative view of collective ownership among citizens.

Focusing on the same six EU countries, Lupi et al. [2] reported the results of a survey administered to energy-CAIs (Collective Action Initiatives). The survey aimed to investigate four key dimensions: dynamics of creation; organizational structure; financing; activities carried out. Regarding the latter, the results showed that CAIs have a much wider scope than energy supply and efficiency alone. They are evolving and expanding towards socially innovative activities, raising awareness on environmental issues, promoting citizens' mobilization, and fostering social inclusion, all of which make them a strong driver of social innovation within energy transition. Some common features could be found within the surveyed countries (e.g., size; predominantly local focus; legal forms often based on the cooperative model; the key role of citizens and municipalities; PV or wind-based renewable energy generation). Nonetheless, the results also showed a heterogeneity of situations that allowed the authors to identify three different stages of evolution of energy-CAIs and related contexts: "mature" in Belgium and the Netherlands; "developing" in Italy and Spain; "new" in Estonia and Poland.

The contribution of Pietrzak et al. [3] and that of Spasova and Braungardt [4] focused on two Eastern European countries, Poland and Bulgaria, respectively. Both studies enriched the description of the national contexts with primary data taken from surveys and interviews. Pietrzak et al. [3] assessed the (high) possibilities of renewable energy development in Poland, along with the potential socio-economic consequences (e.g., job creation and air quality improvement). They identified three determinants (legal, physical

and mental), which they suggested should be addressed by: simplifying and improving the relevant legislation acts; developing solar, wind, and biomass energy; improving general public education about using and obtaining energy.

Meanwhile, Spasova and Braungardt's [4] contribution focused on Bulgaria—the peculiarities of which were made more evident through a comparison with the first-in-class Germany case. The purpose of this study was wider, as it consisted of providing scientific evidence to support the development of a policy framework for renewable energy communities (RECs) in Eastern European Member States. The recommendations the authors provided pointed to the need for policy makers to rapidly deal with the almost complete lack of legislative and support framework for RECs. They also stressed the need to tackle the lack of trust and acceptance that characterizes the cooperative model in post-socialist states. To do so, they suggested developing and implementing, at both the EU and national levels, a more tailored method of creating awareness about the benefits of community energy. Finally, as Eastern European countries have only received marginal interest to date, they asked scholars to more extensively and deeply cover the understanding of drivers and barriers for RECs, as well as to adapt successful strategies to the context of these countries.

A paper by Grignani et al. [5] investigated the suitability of a specific model for the implementation of RECs: the Community Cooperative (CC) model. The CC is a specific type of cooperative that has been emerging in the Italian socio-legal context and which, more so than other forms of legally recognized grassroots initiatives, is characterized by a very strong connection with the territory in which the activities are located. Each Member State is free to adopt a different discipline to establish which legal form RECs may take. The similarities the authors found between the CC and RECs made them suggest that, at least in Italy, CCs may be adopted as a tool to implement RECs.

Ouariachi's [6] contribution focused on energy transition at the local level. It was built on the premise that energy transition process is embedded in a complex stakeholder network with highly interdependent actors, and that if these actors have to collaborate to enable efficient transition, they must initiate a dialogue about their roles and interests. A way to achieve this goal, the author suggested, is via serious gaming. The We-Energy Game was used as a case study. For this paper, data were gathered from six game sessions, involving 125 participant stakeholders, from six different small municipalities belonging to the northern region of the Netherlands. The game was evaluated very positively by participants for all the three main dimensions that were investigated: cognitive, emotional, and behavioural. Finally, the author also suggested ways to make the game (as well as, in general, other serious games) even more effective and engaging.

The paper by Kanngießner [7] and colleagues dealt with the barriers connected to sector coupling and, more specifically, to local (including regional) implementation projects. The authors introduced the reader to a highly detailed inter and transdisciplinary approach that aims to enable local actors (municipal planners or local energy suppliers) to identify and evaluate different Power-to-X (PtX) paths, and to design a business model for the most suitable (for the respective local context) one. The integrated research approach, which consists of four closely interwoven steps, and which allows for existing drivers and potential hurdles to be taken into consideration early on, was successfully applied to a use case in the city of Wuppertal, Germany.

Therefore, the ambition of this Special Issue is to underline the idea that the transition to renewables has to be understood as a deeply social process, implying a process of phasing out from the fossil energy system or, in other words, fossil capitalism. This topic has been poorly tackled in the literature, or at best, it has only been analysed from the technical perspective of the decline in existing technologies. Even if it is acknowledged that this is an emerging theme in energy research, research regarding the exit strategy from the fossil system is usually not well accounted for. Our assumption is that energy transition implies a much more intense social change than changing technologies. The loss of jobs and the drastic decrease in fossil rent will have strong consequences on the national

welfares and social organizations of many countries whose economies are based on oil, coal, and gas exports, generating unpredictable consequences such as conflicts regarding the geo-politics of energy sources' control, global and local conflicts, migrations, and so on. We think that the fossil regime of energy organization deserves more analysis using new tools of investigation, as well as new tools to understand the ways to go beyond the fossil lock-in represented by capitalism.

We would like to consider this Special Issue, and the collective action perspective, as the starting point for a debate and a research trajectory focused on the different models of capitalism that are emerging from the transition process itself—fossil and green capitalism. This trajectory will represent one of the main horizons for our research in the coming years, with the ambition of contributing to shifting this perspective from being an urgent object of research to a crucial component of a concrete policy strategy.

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