

Success factors of civic energy

The global energy landscape is changing. Local, decentralised and community-driven renewable energy projects are playing an increasingly important role in a traditionally centralised energy market. The role of small, decentralised energy projects and their transformative potential has increased in recent years.

Local citizen participation leads to more popularity and acceptance of community projects, decentralised energy production and the possibility to develop innovations. Under certain conditions, it can also accelerate the local energy transition (by increasing the engagement of citizens and other social groups through changes in thinking, acting and organising). There is an opportunity to offset the disadvantages for local residents associated with energy projects (e.g. noise from wind turbines) through democratic participation in renewable energy and other infrastructure. This transformation of the energy system is seen as an "unprecedented but potentially unrepeatable opportunity" to weaken the influence of the fossil industries and their industries and their financial and political allies on the legislature.

The European Union (EU) completed a comprehensive update of its energy policy framework in 2019 with the EU legislative package on energy and climate policy - the Clean Energy for All Europeans package. One of the building blocks of this package is the active participation of citizens through the concept of CE initiatives. The EU project on the democratisation of the energy sector aims to contribute to the increase of energy end-user CE. Citizen energy (CE) includes all types of local (energy) cooperation. CE initiatives are decentralised, non-governmental initiatives at the local or regional level that involve broad citizen participation to promote renewable energy production and consumption.

The cooperative is one of the most common forms of CE initiatives in Europe. CE cooperatives (CECOs) act according to the cooperative principles of the International Cooperative Alliance. According to these, a cooperative is "an autonomous association of persons who have voluntarily joined together to meet their common economic, social and cultural needs and aspirations through an enterprise under common ownership and democratic control." [1]. The organisations are highly democratic, as

each member has equal voting rights regardless of the amount of capital contributed. Yildiz et al [2] point out the great importance of CE initiatives as they represent a synthesis of technological and social change.

To successfully shape the energy transition (greater share of renewable energies and democratisation), active CE initiatives are necessary.

In order to activate CE initiatives and to keep them active, factors that favour this are important. Five success factors will be described based on citizen energy cooperatives: The overview shows 5 categories, which are summarised below as 3 success factors.

Category	Explanation
A. Low-risk business models	The business model chosen is designed to be easy to master. The financial flows are easy to predict and an investment in this business model is considered economically
B. Productive exchange with relevant stakeholders	The CECOs are successful when they collaborate with other stakeholders. This requires support from communities and
C. Social cohesion	Sustainable local social networks are necessary for establishing and running energy communities. Successful CECOs operate in a clearly defined geographical
D. Principles for the organizational model	Certain values are conveyed through the concepts of civic energy and cooperativism. Thus, it seems that trust and environmental
E. Commitment of individuals	The CECO and its members (current and future) share a common 'vision.' The commitment of individuals with different skills must be high for a successful CECO. Motivation is based on the desire to actively

Figure 1 Overview of success factors

Low complexity

The importance of internal structures indicates that the low complexity of the business model is a key success factor for CECOs.

CECOs' business models should be manageable by the volunteer, dedicated individuals on the CECOs' board. Less complex business models should not be understood as simple in the strict sense. Rather, the business models should be kept in such a way that they can be fully mastered by the CECOs' managers. An integrated electricity and heat supply for an entire neighbourhood, for example, is already one of the most complex things CECOs can offer.

- Low complexity means, on the one hand, that the framework conditions, such as legislation or the willingness of authorities and municipalities to cooperate, are designed in such a way that the business models are understandable and manageable even for laypersons.
- Incorporate core competencies of the members. These competences can be around project planning and financing, the operation of distribution grids, the sale of regional electricity or other areas of value creation.
- Less complex business models can also mean serving niches (e.g. digital solutions) that are not yet covered by traditional energy service providers or producers. However, it is questionable to what extent "less complex" can be achieved.
- Business models from other sectors (e.g. marketing business models that can have a lasting impact on customer opinion, for example) can also be adapted here.

However, the need for less complex business models shows the limits of CECOs as actors in the complex and long-term process of the energy transition.

Find and support committed individuals

Engaged employees are at the heart of all CECOs. This finding is supported by Category E of the empirical research and is frequently cited as an internal success

factor in the literature review. CECOs often operate with volunteer boards, which often makes it more difficult to find committed individuals to do this volunteer work in their spare time.

One problem is to reconcile the different preferences of CECO members. In the cooperative literature, the heterogeneity of members is often mentioned only in passing, reduced to a few dimensions and seen as a disadvantage for cooperatives. However, member heterogeneity seems to bring some problems with increasing membership. These must be moderated by "key people". CECOs need two types of committed members.

- On the one hand, members who take responsibility for the CECOs and the projects are important. These people are often found on boards and supervisory boards. They are usually the driving force in finding funding and realising new projects. If possible, these members must be positioned to master economic and technical problems. In the past, too little importance was attached to the disciplines of marketing and public relations. However, these management skills are core competencies that are of great importance for future business models.
- On the other hand, members are needed to support board decisions through democratic processes. This second group of members promotes CECOs through further financial contributions or simple ideational support.

One solution may be to extend the networks to environmental and climate movements (e.g. FridaysForFuture). Communication with these movements can lead to the acquisition of the necessary core competencies.

Maintain and strengthen the social-ecological credibility

CECOs are fundamentally bound by democratic principles in decision-making. Social-ecological credibility is a key success factor for CECOs. Social-ecological in this context means that CECOs must pursue both social and ecological goals in their activities. This means that the activities are for the benefit of the members and for the benefit of the ecological environment.

An important social factor is the "sense of community". There are various definitions of this in the relevant literature. McMillan and Chavis [3] examined the concept of "sense of community" and came up with four components:

- Membership (the feeling of paying a price for belonging to the community and thus having a right to belong),
- Influence (the extent to which individuals can influence the actions of the group),
- Integration (the sense of belonging to a community that is rewarding for its members and positively reinforces their participation), and
- Need satisfaction (sharing the same story in terms of identification with the community).

Members of a successful CECO need to share a common vision, where maximising return on investment is not the main objective of all members. A shared vision can be based on "common needs and goals, a sense of common good, a shared life, a shared culture and worldview, and collective action".

Social action can be defined as "participation in social issues to influence their outcome for the benefit of people and the community". Ideally, these core community values are also reflected in the principles of energy cooperatives. According to the International Cooperative Union, "concern for the community" is one of the seven principles. This can mean that cooperatives pursue community purpose as a fundamental principle.

This assertion is summarised in categories C and D.

Social principles include democratic voting in CECOs and the use of capital for specific projects that meet the objectives of each CECO's bylaws.

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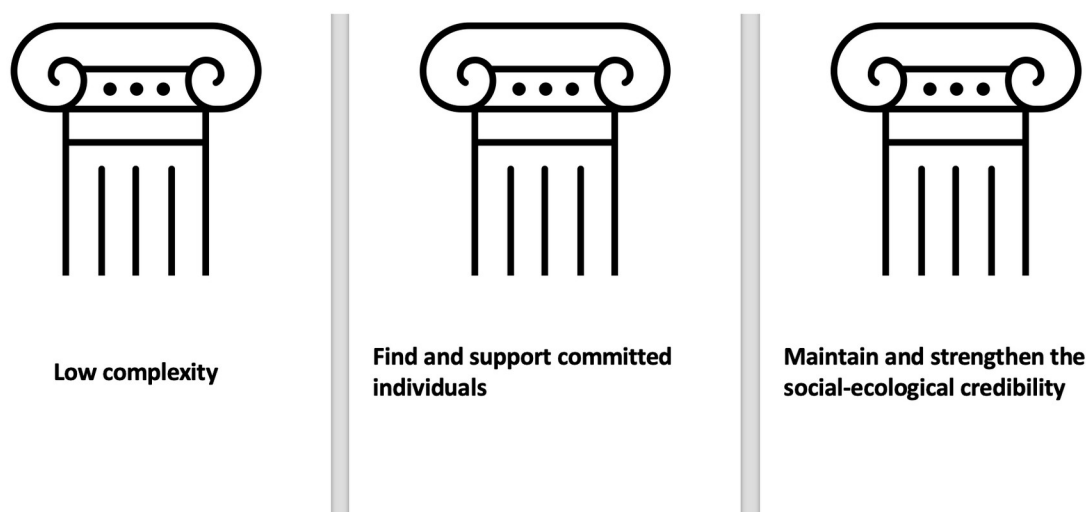


Figure 2 Three pillars for success

[1] International Cooperative Alliance. (2018) Cooperative identity, values & principles. <https://www.ica.coop/en/whats-co-op/co-operative-identity-values-principles>. Accessed 30 Jan 2022.

[2] Yildiz Ö, Rommel J, Debor S, Holstenkamp L, Mey F, Müller JR, Radtke J, Rognli J (2015) Renewable energy cooperatives as gatekeepers or facilitators? Recent developments in Germany and a multidisciplinary research agenda. *Energy Res Soc Sci* 6:59–73. <https://doi.org/10.1016/j.erss.2014.12.001>.

[3] Mcmillan D, Chavis D (1986) Sense of community: a definition and theory. *J Community Psychol* 14:6–23. [https://doi.org/10.1002/1520-6629\(198601\)14:13.0.CO;2-I](https://doi.org/10.1002/1520-6629(198601)14:13.0.CO;2-I).