

## Exploring how leadership and collaboration in multi-stakeholder energy initiatives are aligned with overarching sustainability challenges

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**Abstract** Multi-stakeholder energy initiatives are often promoted as contributing to sustainability. However, little is known about how leadership and collaboration in the initiatives align with holistic sustainability, such as across planetary boundaries.

Our study addresses the research gap on complex energy initiatives' impact on overall sustainability through 2 cases of community-based energy initiatives in Sweden and Greece. These energy communities (EC) were studied in 2025 through 9 semi-structured interviews of around 1–1.5 hours each. The Swedish EC is in a semi-central area in a major urban area and includes solar panels, heat pumps, and battery storage, connecting around 1000 flats. The Greek EC is in a region containing a major urban area, and the EC uses a virtual system to connect around 50 members, mostly households, to solar panels. Both ECs are since the last few years officially registered, non-for-profit organisations.

Our preliminary results indicate that leadership and collaboration in complex energy initiatives can face challenges in but also support addressing sustainability holistically. Creation of economic value for the members is the found starting point in the studied ECs. Sustainability is also an identified value for members, but its definition is unclear. This limited definition can be conditioned by four aspects. First, the leaderships are found to have a general struggle in keeping creating value for members. Second, leading persons with personality traits that enables the needed community building can typically move on to other projects. Third, leadership is found to need to create vague goals due to varying interests across members. Fourth, considerable policy landscape changes are identified to be difficult for the self-trained leadership to foresee and well address. However, the second and the fourth aspects may also be partial reasons for multi-stakeholder energy initiatives to be promising in addressing sustainability holistically. In the Swedish case, a socially engaging key person was at the time of the study considering considerably spreading the EC concept by assisting other emerging EC initiatives. For the Greek case, a drastic policy change may be the catalyst for transforming the EC from focusing on change of energy supply to energy efficiency, with more absolute sustainability improvements since also renewable energy has environmental and social challenges from for example a supply chain perspective.

The results provide indications of sustainability effects stemming from leadership and collaboration in complex energy initiatives, but the overall impact is found difficult to assess. Therefore the policy and research recommendation so far is to be aware of this difficulty and be open for unexpected effects, while acknowledging that leadership and collaboration in general can be challenging in ECs and comparable initiatives.