

The role of community energy in mediating sustainable energy transitions

Community energy engages people directly in advancing sustainable energy transitions, providing communities with a sense of ownership, control, and autonomy over energy infrastructures. The research project called Community Energy Systems and Sustainable Energy Transitions in Ethiopia, Malawi, and Mozambique (henceforth CESET) examined how community energy can advance a Just Energy Transition. The project found that the current conditions of energy development prevent the development of community energy. Changes in policymaking and access to finance can bring about a step change in the development of community energy.

The research

CESET is a collaborative multi-institutional research partnership funded by the UK Global Challenges Research Fund to explore the potential of community energy systems to accelerate inclusive, just, and clean energy transitions in Ethiopia, Malawi, and Mozambique. Learning from previous work on community energy by the International Renewable Energy Agency (IRENA),¹ CESET approached community energy as heterogeneous systems involving technological solutions from mini-grids to localised solar for community infrastructures.

Figure 1: Map of CESET countries

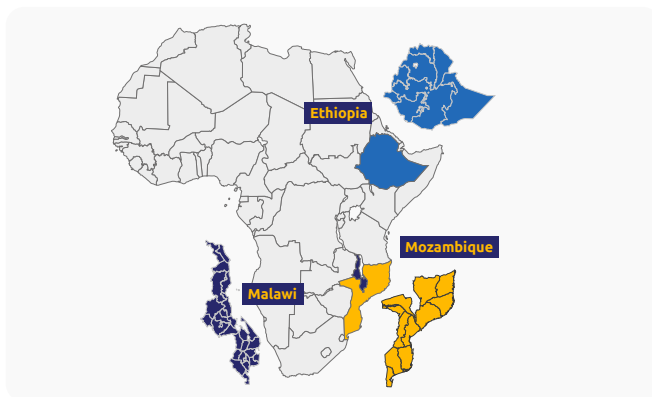


Figure 2: Areas of study in CESET



- ✓ Community energy projects are growing across Ethiopia, Malawi and Mozambique
- ✓ Community energy projects are more inclusive and more effective in meeting the needs of poorer communities than large-scale, top-down energy projects
- ✓ Financial and institutional support can accelerate community energy development for a Just Energy Transition

Policy Messages

Message 1: The development of community energy projects at scale requires the support of a wide range of regional and local institutions that can mediate the gap between global opportunities and local implementation, but capacity and skills need to be improved at the local level.

CESET's quantitative assessment of the governance of energy access demonstrates that an appropriate regulatory framework is necessary but not sufficient to develop community energy at scale. For example, projects in Ethiopia, where a comprehensive body of electricity regulation facilitated pioneering community energy projects, have their progress compromised by an excessive centralisation of the approval system. In Malawi, the government's regulatory support is not matched with sufficient capacity at the local level. In Mozambique, stakeholders who welcomed the new off-grid regulation in 2020 now find that the control of the hinders the development of new projects. CESET's qualitative research shows that decentralization facilitates community energy development. For example, Community Energy Malawi (CEM) piloted a District Energy Officers programme that built

¹ <https://www.irena.org/Publications/2021/Nov/Community-Energy-Toolkit-Best-practices-for-broadening-the-ownership-of-renewables>

capacity for energy planning and has facilitated the rapid growth of microgrids. In addition, various other social actors foster community energy and could benefit from additional support. In Ethiopia, for example, religious institutions may act as community-dynamising institutions, facilitating the inception of community energy projects.

Message 2: Donors could develop a dynamic finance landscape to integrate community energy projects in the energy transition.

Community energy entrepreneurs report that current levels of investment are not appropriate to sustain a sufficiently large network of community energy projects to facilitate an energy transition. Most funding comes in the form of limited-time grants for individual projects. Moreover, private funding is scarce. There is a need to finance relatively small projects emphasising stability, for example, by providing contingency funds for shocks and service disruptions. The most effective forms of financing rely upon long-term partnerships between donors and service providers, enabling them to share financial costs and burdens over time. Donors could emphasise, for example, the social return on investment, a method to account for a wider range of values than those considered in traditional financial statements, including social, economic and environmental benefits such as those provided by community energy (Table 1).

Message 3: Measures to maintain supply chains promote community energy development because most projects depend on technology and resource imports.

Tax exemptions encourage the development of off-grid renewables. They have been widely applied in Malawi and, partially, in Ethiopia and Mozambique. However, an energy transition will require developing endogenous technological resources and fostering industrial capacity. In addition, circular economy policies to facilitate reusing and recycling materials and technology (such as initiatives to recycle batteries in Mozambique) can help stabilise the challenges of the supply chain.

Message 4: Community energy's outcomes often target specifically marginalised or vulnerable groups, such as those suffering discrimination due to gender, origin, race, level of ability, or sexual orientation, which would not be reached otherwise.

For example, community energy has more potential for delivering gender equality outcomes than larger electrification projects because women have more opportunities to influence decision-making

and shape the project's benefits. Thus, community energy projects tackle the tangible gender gap in technical skills, evident in the energy transition. Some community energy projects foster reciprocity and solidarity within the community, increasing its resilience. For all those reasons, community energy is suited to meet the needs of a just energy transition.

Table 1: Community energy benefit

Economic	<ul style="list-style-type: none"> • Energy Access • Financial benefit for the community • Services for marginalised areas or communities • Higher employment • Social inclusion • Support of other community activities & services
Education and acceptance	<ul style="list-style-type: none"> • Knowledge about energy-saving • Understanding how to run community projects • Examples that can inspire other communities • Improving trust and acceptance towards renewable energy
Participation	<ul style="list-style-type: none"> • Higher level of political participation • Collective financial management • Self-organisation
Climate protection and sustainability	<ul style="list-style-type: none"> • Awareness and lifestyle changes • Provision of low carbon supply of energy
Community building and self-realisation	<ul style="list-style-type: none"> • Community upgrading • Social cohesion and more robust governance • Pride, joy, and other emotions related to collective material action
RE generation targets	<ul style="list-style-type: none"> • Increase the share of renewables in the energy supply • Level the playing field for market entrants • Building supply chains to facilitate RE adoption
Innovation	<ul style="list-style-type: none"> • Endogenous innovation • Generation of new societal norms