ENERGY BUSINESS MODELS

When community meets finance

Community energy projects may be pivotal in low-carbon transitions, yet little empirical evidence exists about their financing. Now, research sheds light on the financial mechanisms and performance of community energy projects in the UK.

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Community energy projects are initiatives where citizens come together to tackle diverse aspects of low-carbon energy transitions, including renewable energy generation. They have been argued to play potentially key roles in transition processes[1]. They have also been associated with a greater democratization and fairness of decision-making and more active citizen participation in energy systems. Furthermore, evidence shows that they may have a positive impact on the social acceptance of controversial technologies such as wind turbines[2,3]. Community energy approaches appear increasingly relevant with the development of decentralized storage and other small-scale technologies, peer-to-peer trading platforms and local energy markets, as well as with the growing involvement of the demand side in stabilizing renewable energy generation. They have been on the rise across Europe, North America and in other regions[4]. Yet, little is known about community energy financing and business models. But now, a paper by Tim Braunholtz-Speight and colleagues scrutinizes the financing mechanisms and financial performance of community energy projects in the UK, relying on a large-scale, cross-sectional quantitative survey of the sector[5].

Based on a cluster analysis, the researchers first highlight the diversity of business models within the sector, pointing to variations in the means of accessing finance and other resources and in the customer value propositions. This suggests that community energy initiatives have refined and adapted their business models to make projects viable, possibly due to the frequent policy changes in the UK context. The findings also underscore the importance of project size to explain the type of financing: larger projects have become more professionalized and rely more heavily on commercial loans, while smaller organizations running rooftop solar photovoltaic projects are small enough to be mainly funded through community share issues.

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A major finding of this study is that community shares turn out to be the cheapest financial instrument in the sector. Indeed, looking at the statistical relationship between the cost of finance and the instrument type, the researchers find that community shares charge an interest rate that, on average, is 2 percentage points lower than loans. This discrepancy between financial instruments may reflect different investor motivations and return expectations. It is also consistent with studies showing that people investing in community energy projects are not purely driven by financial motives, but may do so for environmental and social reasons[1,6]. This shows that while a community energy approach faces challenges of its own, it may also bring some financial advantages.

Yet, Braunholtz-Speight and colleagues also highlight that the growth potential of community energy in the UK is being threatened by decreasing and unstable policy support. Indeed, previously introduced

price guarantee schemes for small-scale renewables in the UK, such as feed-in tariffs or renewable obligation certificates, have been substantially cut down. To assess the impact of this evolution on the profitability of projects, the researchers subtracted the price guarantee scheme revenue from total project revenue. For the single year snapshot examined in the study, over 90% of the projects in the sample made a financial surplus. However, this falls to just 20% when income from price guarantee mechanisms is removed. This finding supports previous claims regarding the high reliance of community energy projects on government support schemes and regulations, which can be seen as a weakness, since these schemes and regulations heavily shape how and where communities can own and manage renewables[7]. But this finding also shows that some community energy business models may be viable in this increasingly unfavourable policy environment.

These policy changes reflect a broader evolution of support mechanisms in Europe. Indeed, policies that have previously supported the deployment of small-scale renewable projects are being withdrawn across several European countries, including pioneers like Denmark and Germany, where shifts from feed-in tariffs to more market-based instruments have progressively taken place[8,9]. These developments raise questions about the future viability of the community energy sector and put citizen participation in renewables at risk. Renewed policy support would be needed to generate the potential co-benefits of community energy for low-carbon transitions.

Two main reactions from the community energy sector to this new policy landscape can be identified. First, as Braunholtz-Speight and colleagues' study pinpoints, there is a tendency towards making community energy projects — which have to become increasingly agile and resilient in the face of policy changes — more professional and commercial. This involves, among other things, diversification of their revenue streams by proposing other offerings on the top of renewable energy generation, for example electric mobility services, energy efficiency models and demand side management[10]. Second, this evolution has spurred the emergence of collaborative dynamics among initiatives, as well as the creation of networks and intermediary organizations, both at national and European levels, which help existing and aspiring communities with various aspects of project development and advocacy work[11,12].

These evolutions will have a profound impact on the nature of community participation in renewables. Previously, community action was rooted in environmentally driven collectives of citizens working cooperatively to share benefit and to challenge incumbent energy systems. It remains to be seen whether this increased professionalization of the community energy sector will impede less experienced communities from developing projects. Similarly, whether these new networks and intermediary organizations will be able to ensure the participation of a broader diversity of communities is an open question. While the findings reported by Braunholtz-Speight and colleagues are a welcome effort to study the economics of community energy, further empirical research is needed to understand how these changes in policies and business models are shaping the forms of, and motivations behind, community energy participation. ❐

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