PRESS RELEASE

New study on start-ups in the renewable energy sector shows that start-ups are driving the energy transition

Start-ups in the field of renewable energies are seen as a key driver of the energy transition. In 2024, 1.2 billion euros in venture capital was invested in German energy start-ups, more than in any other technology field. A research team from Fraunhofer FFB and the University of Münster has investigated the factors that determine the success of entrepreneurial initiatives in this field, the hurdles they encounter and how investments can be translated into a measurable climate impact.

Münster. Innovation in the energy sector is crucial for the transition to sustainable, secure and affordable energy, which is essential for tackling climate change. For the study, which was published in the renowned journal Renewable and Sustainable Energy Reviews, the researchers analyzed over 2,600 scientific publications and condensed 142 of them into a systematic overview of entrepreneurial action in the energy sector.

Focus on three types of start-ups

The study identifies three main forms of entrepreneurship: technology-oriented, community-based and rural start-ups. Technology start-ups play a key role in the development and implementation of innovative energy solutions such as battery recycling or AI-supported grid control. Community initiatives in turn promote the local energy transition, while rural start-ups improve access to affordable energy, particularly in structurally weak regions.

"Start-ups open up new fields of innovation and drive economic growth by challenging traditional paradigms and using modern technologies in a targeted manner," says Dr. Florian Degen, co-author of the study and Head of Strategy and Business Development at Fraunhofer FFB. "They thus make an important contribution to the further development of renewable energies and play a key role on the path to a more sustainable energy future."

Barriers to market entry inhibit innovative strength

Start-ups could provide important impetus, particularly in the dynamic environment of the energy transition. For example, through more intelligent solar systems, new battery technologies or the organization of local energy cooperatives. However, market access is often hampered by complex structures and high barriers to entry. "Compared to other industries, the introduction and scaling of new technologies in the energy sector is associated with considerable technical and operational challenges," explains Linda Brüss,

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co-author and research associate at the Institute for Entrepreneurship at the University of Münster. "Especially the integration into existing infrastructures or their replacement poses major challenges for young companies."

Added to this is a complex and frequently changing regulatory landscape. "The energy industry is heavily regulated, and the legal framework differs considerably in some cases depending on the region or country," says Professor David Bendig, co-author and Director of the Institute for Entrepreneurship at the University of Münster.

Political support and strategic networks as success factors

A key finding of the study: start-ups in the field of renewable energies can make a decisive contribution to the energy transition if the political and economic framework conditions are right. However, entrepreneurial innovation alone is not enough: What is needed is targeted political support, a stable legal framework and access to suitable resources. According to the authors, start-ups should actively monitor regulatory developments and get involved in political processes in order to identify opportunities and risks at an early stage. Strategic partnerships, for example with established companies, research institutions or other start-ups, and the adaptation of business models to local conditions are also important levers.

"Our analysis shows that start-ups can play a transformative role not only economically, but also socially," emphasizes Florian Degen. "In order for this potential to be realized, we need mission-oriented funding programs, reliable signals for the future and an acceleration of central decision-making processes."

Caption: Start-ups in the field of renewable energies are driving the energy transition forward: in 2024 alone, 1.2 billion euros in venture capital flowed into German energy start-ups, more than in any other technology field. A research team from Fraunhofer FFB and the University of Münster has analyzed the success factors and challenges that characterize these start-ups and how investments can be translated into concrete climate impact. **Copyright:** Adobe Stock/ Berkah

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