

Support from all sectors is needed for the successful diffusion of energy innovations, says researcher

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Renewable Energy Technologies (RETs) are often considered disruptive innovations as they transform current market structures that prioritize

state-owned, fossil fuel-based energy giants. According to Oskar Juszczyk's doctoral dissertation from the University of Vaasa, Finland, the diffusion of renewables needs to be supported by interest groups from all sectors of society to overcome numerous challenges, such as ineffective policies, limited financing options, obsolete infrastructure, and low levels of societal acceptance.

"An enhanced collaboration between government, industry, academia, and society is critical for the prosperity of environmentally-friendly technology solutions," says Juszczyk, who will publicly defend his dissertation in industrial management on Monday 19 June.

Juszczyk's dissertation in the field of industrial management explores the impact of regulatory, technological, and socio-[economic factors](#) on the successful diffusion of RETs. The study highlights the importance of a supportive regulatory regime as well as inter-sectoral collaboration to foster the implementation of RETs.

When it comes to energy, there is always politics involved

The dissertation adopts a problem-solving approach, which required the initial determination of the most challenging barriers to the diffusion of RETs. The evidence based on interviews with executives of RET companies shows that unsupportive, overly complicated, and dynamically changing [energy](#) policies and legal procedures are key obstacles to the prosperity of renewables.

Therefore, Juszczyk recommends more comprehensive, simplified, entrepreneur-driven, and renewables-oriented regulations as prerequisites for implementing more RETs. Strategies with a long-term perspective are required to effectively fulfill the [ambitious goals](#) stated

in the official government reports and to achieve the targets of the legally-binding international regulations.

Multi-sector contribution is needed

Collaborative input from all sectors of society is critical to support the diffusion of RETs. "Indeed, university-industry collaboration is more often than not a source of innovative solutions that push the whole energy industry forward. This could be achieved through the formation of collaborative networks, such as energy ecosystems, or energy hubs and clusters," claims Juszczak.

Furthermore, the study firmly underlines the need for strengthened efforts to increase the societal acceptance of renewables, which would ultimately result in enhanced adoption of RETs. This could be accomplished by organizing various education programs, conferences, workshops, and other awareness-raising actions, which would result in increased environmental consciousness and customer trust.

The empirical analysis of the dissertation is based on evidence gained through interviews with experts in Finnish and Polish RET sectors. It addresses the most challenging barriers in the practical and eye-catching form of a roadmap. In addition to the prerequisites and main findings shown above, the study proposes smart specialization of local communities, venture capital investments in RET start-ups and SMEs, as well as blockchain technology as a catalyst for the widespread [diffusion of renewable energy technologies](#).

More information: Dissertation: osuva.uwasa.fi/handle/10024/15754

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