

Abstract

Solar photovoltaics (PVs) play a vital role in the global shift towards renewable energy to combat climate change. With its potential to meet CO₂ reduction targets, solar PV stands out as a promising market within renewables. However, as solar PV installations increase, so does the concern over managing end-of-life panels. Projections indicate a significant rise in solar PV waste, emphasising the need for a circular economy approach to ensure sustainability. This study aims to explore the internal managerial aspects by delving into dynamic capabilities as well as barriers and enablers that affect the circular transition in the Solar Power sector. This study has focused on Skagerak Energi, a prominent Norwegian energy corporation expanding its solar investments. A qualitative case study analysis involving six semi-structured interviews and three email correspondences was conducted. The results found that dynamic capabilities such as strong leadership, an innovation-driven culture, and supportive regulatory frameworks are key enablers in the solar circular transition. However, significant barriers include technological integration challenges, internal resistance to change, financial resource constraints, and mismatches between company offerings and market expectations. To effectively implement circular economy principles in its solar PV projects, Skagerak Energi must enhance their internal dynamic capabilities, address gaps in circular economy knowledge among leaders and employees, and foster a culture grounded in sustainability and adaptability. This involves cultivating a collaborative work environment, reallocating more resources towards CE projects, and embracing experimentation to overcome challenges such as closed office layouts and risk-averse funding approaches. Leveraging enablers such as regulatory mandates, market demand, internal commitment, and an innovation-oriented culture will be crucial in addressing regulatory, market, cultural, and technological barriers. By adopting these strategies, Skagerak Energi can position itself to effectively address the growing global challenge of solar PV waste while establishing itself as a leader in sustainable energy practices.



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The path to circularity in Solar PVs: A look into Skagerak Energi

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