

## **Renewable Energy and Entrepreneurship: Towards a Sustainable Future**

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Renewable energies, such as solar, wind, and hydropower, are emerging as key drivers for modern entrepreneurship, significantly influencing environmental sustainability and economic development. The rise of these technologies is creating new market niches, allowing entrepreneurs to enter various fields, including manufacturing, installation, and maintenance of energy systems. For example, the company Vestas, founded by Henrik Stiesdal, has not only revolutionized the wind energy sector but also positioned Denmark as a global leader in this field (Lemaire, 2020). Vestas has been able to innovate by developing increasingly efficient turbines adapted to different environments, increasing energy production and reducing operational costs.

Investments in research and development in this sector have led to significant innovations, reducing the production costs of solar panels by almost 90% over the last decade, making these technologies more accessible to a greater number of users, whether households or businesses (IRENA, 2021). This development is supported by major technological advances, such as the improvement of photovoltaic cells and the optimization of manufacturing processes. Furthermore, the integration of energy storage systems, such as lithium-ion batteries, helps overcome the intermittency of renewable energies, increasing their attractiveness and reliability. This cost reduction and improved efficiency increase the attractiveness of renewable energies, allowing companies to benefit from greater financial stability. This context promotes increased resilience to fluctuations in fossil fuel prices, facilitating long-term planning and encouraging sustainable growth (Pessey, 2022). Companies that invest in these technologies can establish long-term contracts with customers, ensuring a stable revenue stream, especially crucial in an uncertain economic climate where market volatility can affect company profitability.

Exemplary initiatives, such as those of Ayla Bajwa in Pakistan, illustrate how renewable energy entrepreneurship can play a crucial role in combating energy poverty. These projects contribute to the electrification of rural areas and strengthen the social fabric by creating economic opportunities within communities (Bajwa, 2023). By providing access to electricity, these initiatives enable small local businesses to thrive, promoting entrepreneurship and job creation.

However, notable challenges persist. The initial installation cost remains a major obstacle for many entrepreneurs, as does the need for specialized training for workers. Companies must recruit and train qualified personnel, representing an additional cost. Furthermore, entrepreneurs must navigate a complex regulatory framework that varies considerably from country to country. Energy policies, tax incentives, and environmental standards play a crucial role in project viability. Competition from traditional, often subsidized energy sources further complicates the situation for new companies, making it difficult for renewable solutions to compete in the market (Charlez, 2020).

The significance of this research lies in providing practical and theoretical insights into the role of renewable energy in entrepreneurship. By identifying best practices and analyzing public policies, this study can contribute to formulating recommendations aimed at supporting entrepreneurs in this rapidly expanding sector. Furthermore, it could inform policymakers on the importance of a favorable regulatory framework, facilitating the energy transition and sustainable economic development. Despite the rise of renewable energy and its potential for economic transformation, many entrepreneurs encounter significant obstacles in implementation, raising the question: how can they navigate a complex environment marked by high installation costs, varied regulations, and increased competition, while taking advantage of the opportunities offered by these energies? The objective of this research is to analyze the impact of renewable energy on modern entrepreneurship, examining how these technologies influence environmental sustainability and economic development, while evaluating public policies that promote or hinder their growth. Renewable energy represents a strategic lever for innovation and sustainable economic growth, requiring a proactive and collaborative approach to overcome existing obstacles and maximize the opportunities offered by this energy transition.