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The Perspective of Renewable Energy Applications in UAE: A Detailed SWOT Analysis

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Abstract

Renewable energy (RE) is rapidly booming globally due to various innovations that have made it possible to bring down the cost of energy production, and more importantly, to save the Earth's environment. The UAE has not been left behind and presently the country is ramping up its renewables contribution to 10% of the country's energy mix. Interest has been particularly shown in diversifying the nation's energy sources to attain 25% total energy generation through RE by the year 2030. The Implementation of the national set strategies regarding RE projects is observed to have obvious inconsistencies between various parts of the country. Accordingly, the current research utilized a system of experts to apply the SWOT analysis mechanism to investigate the major factors which can empower or hinder the implementation of RE projects in the UAE. The analysis covered numerous types of RE including solar, wind, tidal, wave, nuclear, waste-to-energy, green hydrogen, and combined cycle gas turbines (CCGT) technologies. The current findings confirmed that the variation in the RE strategy implementation is due to variations in economic, regulatory, social, and geographical aspects of the diverse emirates of the country. The analysis further listed a set of internal and external factors to the concerned authorities that influence the introduction and spread of RE projects nationally. A set of recommendations are thus provided to enhance the RE adoption in relation to the set national energy strategies.

Keywords: Challenges to technology adoption, Electricity, Power Supply and demand, Public policy development, Strategy Implementation