Environmental Engineering and Management Journal

March 2024, Vol. 23, No. 3, 487-501
http://www.eemj.icpm.tuiasi.ro/; http://www.eemj.eu
http://doi.org/10.30638/eemj.2024.038

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TOWARDS SUSTAINABLE ENERGY TRANSITIONS: RANKING LOWER-MIDDLE-INCOME ECONOMIES ON THE ACCESSIBILITY TO AFFORDABLE AND CLEAN ENERGY

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Abstract

As the world copes with increasing geopolitical tensions, energy crises, and environmental challenges, the imperative for affordable and clean energy transitions is clearer than ever. Lower-middle-income economies, home to a significant portion of the global population, are particularly impacted. Addressing their unique energy challenges requires an understanding of their specific contexts, barriers, and potential solutions. This study brings a novel perspective to this critical issue, introducing a robust ranking system for these economies based on their accessibility to affordable and clean energy. Utilizing the Entropy method for criteria weighting and the technique for order of preference by similarity to ideal solution (TOPSIS) method for final ranking, the study unravels the complex interplay of factors influencing energy transition in these countries. International financial flows and renewable capacity per capita emerge as crucial determinants, accentuating the need for global policy focus in these areas. This research is driven by the urgency to bridge the gap in energy access among lower-middle-income countries, recognizing that their progress is vital for global sustainability. By providing a clear ranking, our study not only highlights the disparities but also aims to catalyze immediate international intervention and policy adaptations, making the pursuit of clean and affordable energy a tangible and urgent goal. The ranking reveals an Asian predominance in the top tier, with Bhutan leading, followed by India and Pakistan. In contrast, nations from geographically distant islands and Africa find themselves at the lower end of the spectrum. The study underscores the urgent need for concerted global action towards achieving sustainable development goal- 7 (SDG-7) and accelerating the transition towards affordable and clean energy across lower-middle-income economies.

Key words: affordable energy, clean energy, entropy, sustainable development goal, technique for order of preference by similarity to ideal solution

Received: August, 2023; Revised final: November, 2023; Accepted: January, 2024; Published in final edited form: March, 2024

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