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The Installation of Solar Panel Plant Based on The Site Selection Assessment, Solar Irradiance and Slope Analysis in Malaysia

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Abstract

Renewable energy sources are superior to fossil fuels because they are often free, abundant, and have little or no environmental effect. Pursuing clean energy is critical for Ampang district in order to diversify their energy portfolios, transition to green economies, and achieve sustainable development. The purpose of this work is to develop a GIS-based model for multi-criteria suitability analysis that can be used to find most suitable solar power plant locations. The suggested model aided in the integration of a number of significant parameters that indicate the potential of different areas between flat and hilly area for solar plant placement. As a result, viable locations for solar energy facilities in Ampang have been identified. The possibility for generating electricity from these more favorable locations was also assessed based on the measurement of solar irradiance. Possibility to install the solar panel on hilly site has been understood by analyzing the factor of safety based on slope analysis. This research potentially exposed to the green technology industry for determining the suitable location for installation of solar panels.

Keywords: Sustainable technology; Insolation; Factor of safety; GIS.