




**FEASIBILITY STUDY ON SOLAR POWER
STRENGTH AND DISTRIBUTION IN UNIVERSITI
TEKNOLOGI MARA (UiTM) PULAU PINANG**

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“I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.”


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ABSTRACT

Malaysia is a country that has the advantages of strength in harvesting solar power energy due to its location in the equatorial zone. The electricity demand in UiTM Pulau Pinang is about 1.5 million kWh monthly. Due to the high amount of electrical consumption, the dependency on non-renewable energy was high. This study was aimed to identify the solar power strength and distribution in UiTM Pulau Pinang and has the potential to reduce the dependency on non-renewable energy by at least 15%. A general commercial, Panasonic HIT+ VBHN335SA17 PV module was used as a reference to determine the number of panels needed in order to reduce 15% of electrical energy from non-renewable energy. The important parameters involved were the power strength and distribution of solar radiation. Factors considered were the temperature, humidity, cloud cover and shadowing. Analysis of the average of daily solar radiation considering the factors affected the plant location of solar was performed. The highest solar radiation was generated during moderate temperature range between 30⁰C and 35⁰C on the peak hour duration between 1100 until 1400, the clear and sunny day, the free-shadow cast and lower relative humidity condition.