

# 校園光風發電系統營運管理之檢討研究

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## 摘要

In this paper, TUNGHAI University light and wind power generation system operating data are analyzed. The 3kW solar power system has an average daily power generation of 15 degrees with a cumulative generating capacity of 20,357 units; the 3kW wind power has an average daily generation capacity of 8.3 units with a cumulative wind power capacity of 11,074 units. The light and wind power generation system for three years and nine months has a total cumulative power generation capacity of 31,431 units. When comparing the two system with each other, the dynamic trend of solar power is more stable. The cost of solar and wind power is high, at about more than NT \$ 10 per unit of electricity. The monthly average ( $w/m^2$ ) of sunshine intensity of the solar power system and the monthly solar monthly energy unit have a relative coefficient of 0.228, below the level of significance. This is mainly due to the fact that the morning sunshine was blocked by a huge chimney at the location of the solar panels installed, resulting in that the power generation efficiency did not have significant difference. The monthly average of wind speed ( $m / sec$ ) of the wind power system and the wind monthly energy units have a relative coefficient of 0.874, reaching significant correlation. This indicates that wind power generation equipment operation performance and external wind farm environment in a better state. Wind power generation equipment caused by vibration and noise impact of the premises has caused intermittent outages, which indirectly affect the efficiency of the use of wind power generation system.

關鍵字：solar, wind, light, wind power generation system, intelligent energy