Title	TECHNO-ECONOMIC ANALYSIS OF PV BATTERY CHARGING STATION IN KAMPOT, CAMBODIA
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ABSTRACT

This thesis presents the technical and economic analysis of PV battery charging stations in Kampot, Cambodia's situation. The solar radiation reflected by the air molecules, clouds and ground was obtained from the satellite data. The absorption of solar radiation due to water vapor was calculated from precipitable water derived from ambient relative humidity and temperature from Cambodian meteorological stations. The annual solar radiation from January to reach a peak in the summer months of March and April each year and the yearly map showed the features of a high solar radiation pattern in the southeast part of the kingdom of Cambodia. The average value is about 5.20 kWh/m^2/day can be observed in the southeast of the country. With the highest values of solar radiation, solar PV battery charging stations (PVBCS) will be installed in each village, where is not electrified by national grid or mini-grid projects by the year 2020, and where no battery charging stations are currently operating in.

According to the highest values of solar radiation in the southeast parts of the country, Kampot province has a priority selected for installing PV battery charging stations in order to analyze and propose the most suitable techno-economic factors from this study to people who are living in remote areas and can help meet the Royal Government of Cambodia's political objective of 100% village having electricity supply by 2020 from different sources of energy.

With capacity of 10 kW_p PV battery charging station in Kampot was calculated to evaluate and compare the technical and economic evaluation of c-Si PV modules and diesel battery charging station under the Kampot climate.

In this study, there are separated into two main objectives, namely 1) to analyze the technical and economic assessment of solar PV battery charging station in Kampot, Cambodia and 2) to propose the most suitable technical and economic from this study to all users.

Based on the present electricity price in rural areas is about 0.27 US$/kWh for PV battery charging station, the results of this study showed that c-Si PV modules present not only high NPV (7,340 US$), EIRR (1.91%), BCR (1.14) but shorter simple payback period (10.57 years) than the diesel battery charging station of original electricity price is about 0.34 US$/kWh with the NPV (1,892 US$), IRR (2.15%), BCR (1.03) and simple payback period (11.72 years) values. As a result, the technical and economic evaluation of c-Si PV battery charging station with capacity of 10 kW_p, in fact, pointed the most suitable technology for people in rural areas in the Kingdom of Cambodia.

Lastly, the Royal Government of Cambodia should be providing the capacity building, subsidy, exemption taxes, incentive costs and loans/grants with lowest interest rate to all users and stakeholders, because most of these are more attractive and actively rapid develop in near future soon.