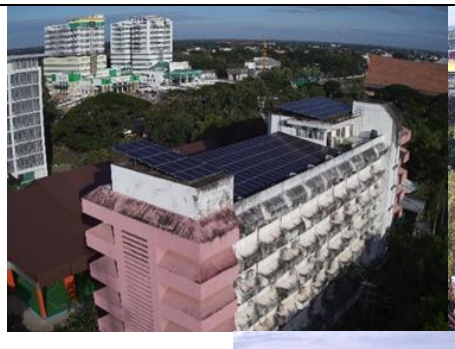
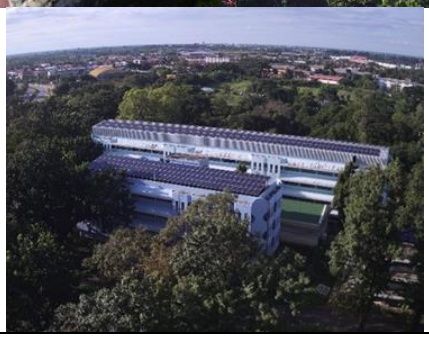
Template for Evidence(s)
UI GreenMetric Questionnaire

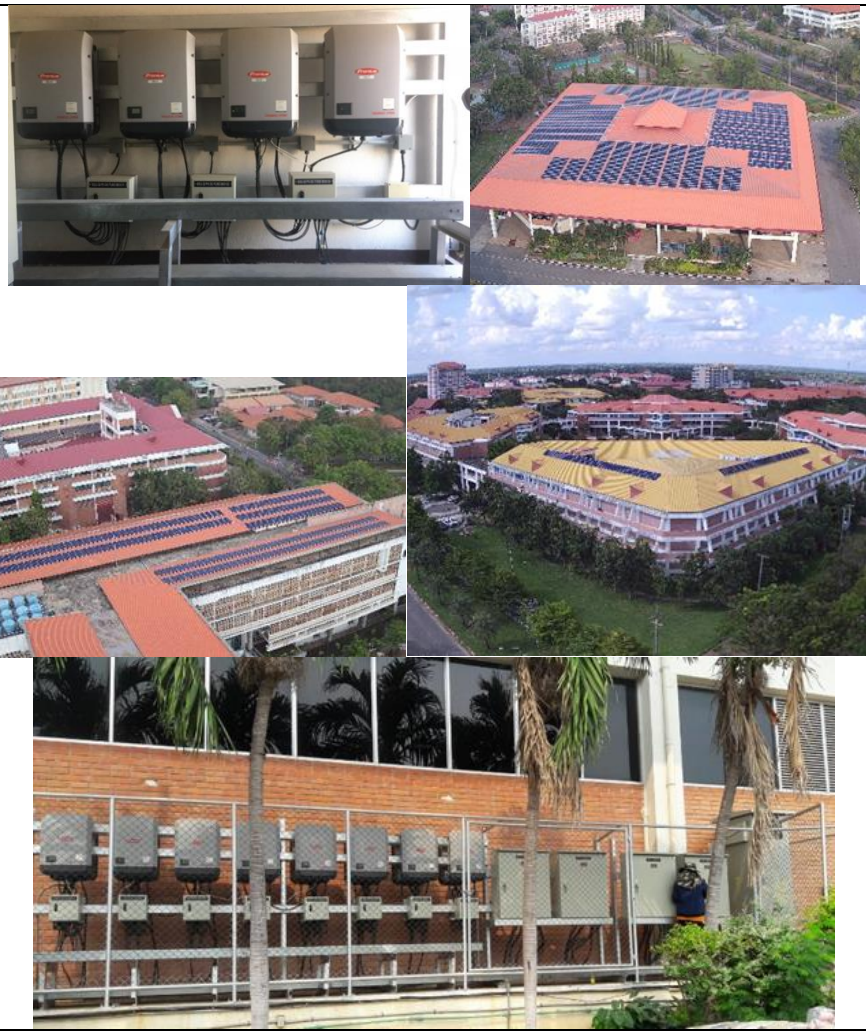
University : Mahasarakham University
Country : Thailand
Web Address : MSU green university l Mahasarakham University

[2] Energy and Climate Change (EC)

[2.8] ratio of renewable energy production divided by total energy usage per year







Solar Power

Biomass

Wind Power

Description:

Mahasarakham University had policy to renewable energy for the university's activities which the solar cell on the 6 buildings roof. The energy of the solar cell on the 6 roofs with a capacity of approximately 1MW, energy consumption of 2,880,000 kWh per year. Both 2 campuses: city campus and Khamriang campus was setting solar cell on the roof with 12 buildings: Gymnasium building, College of Music, the building of the Faculty of Informatics, the building of the Faculty of Education I, the building of Academic Resources Center (old building), the building of the Faculty of Science IV, the building of A and B. The generation system consists of a set of crystalline solar panels which is a

new technology. And its high electrical efficiency (more than 18%) makes it suitable for roof mounting. The installed capacity of approximately 1 megawatt (DC) uses 2,857 solar panels, which are the source equipment used to generate electricity from the sun. And the electricity produced by the solar panels will be DC power and will be sent to Inverter to convert from DC power to AC electricity. AC electricity will convert the 22 KV to connect to the high voltage system within the university. Switch to suit the 400/230 VAC power supply

Mahasarakham University has Inverter system and electricity system which control by the Provincial Electricity Authority. All the electricity generated by the university had the prevent flowing back.

In 2023 – 2024 Mahasarakham University has been allocated funds from the Electricity Development Fund for the promotion of the use of renewable energy and technologies used in electricity business with low environmental impact in accordance with Section 100 of the Electricity Development Fund. 97 (4) in the budget amount of 18,180,000 baht (eighteen million one hundred and eighty thousand baht net) to generate electricity with solar rooftops of 660 kilowatts for use in hospitals under Mahasarakham University. Wishing to make use of the space on the roof of the building. For installing solar rooftop power generation system 660 kW capacity to create electricity security Reduce greenhouse gas emissions (t CO2 E/year) and develop hospital personnel under Mahasarakham University to have knowledge and experience in utilizing energy with solar cells (Solar rooftop) according to the policy of the Office of the Energy Regulatory Commission.

Wind power generated 900 w and useful for the project tanks.

No	Renewable Energy	Production (in kWh)
1	Solar Power	4,068,000.00
2	Wind Power	900.00
	Total	4,068,900.00

The electricity comsumtion in 2023 is 26,241,088 kW-h per year. The ratio of renewable energy production divided by total energy usage per year is

$$= \frac{\textbf{renewable energy production}}{\textit{electricity usage per year (kWh)}} \times 100$$

$$= \frac{4{,}068{,}900}{26{,}241{,}008} \times 100$$

$$= 15.51\%$$

Additional evidence link : Msu Green University