

Topic: "Driving Climate Action through Renewable Energy: The 2.54MW Solar Rooftop and Future Solar Projects with Carbon Credits under T-VER at Walailak University"

Walailak University, in collaboration with the School of Engineering and Technology and the Academic Service Center, has taken significant steps toward promoting renewable energy management and contributing to Thailand's national carbon reduction goals through the Thailand Voluntary Emission Reduction Program (T-VER). One of the key projects under this initiative is the installation of a 2.54MW solar rooftop system, which is nearing completion. This project is a major milestone in reducing energy costs and greenhouse gas emissions on campus. Additionally, the university is planning future projects, including solar car parking at the Medical Center and a solar floating system, both of which will further enhance the university's renewable energy capabilities.

The current focus is on the 2.54MW solar rooftop system, which will generate significant amounts of clean energy for the university. By harnessing solar power from rooftops, the project is expected to reduce the university's reliance on fossil fuels and lower its energy costs. Once completed, this system will contribute directly to Walailak University's sustainability goals and align with the T-VER program, allowing the university to generate carbon credits that can be traded on the voluntary carbon market. This aligns with the broader objective of reducing greenhouse gas emissions in accordance with international climate agreements.

While the solar rooftop project is almost finished, the university has also outlined future plans to expand its renewable energy portfolio. The solar car parking project at the Medical Center will further reduce energy consumption by utilizing solar panels to provide clean energy and shaded parking for vehicles. Additionally, the solar floating system, planned for the future, will explore the innovative use of water surfaces to generate solar power, adding another dimension to the university's renewable energy infrastructure.

The objectives of the T-VER project at Walailak University are threefold. First, it seeks to enhance renewable energy management through projects like the solar rooftop, solar car parking, and solar floating systems, all of which will contribute to the reduction of greenhouse gas emissions. Second, the project aims to develop the skills of university personnel in areas

such as carbon monitoring and renewable energy technologies, ensuring that the university can sustain and expand its renewable energy initiatives. Finally, the project integrates these initiatives into the academic curriculum, allowing students to gain hands-on experience in renewable energy management and climate change mitigation.

The 2.54MW solar rooftop system represents a collaborative effort between university departments, government agencies, and private sector partners. University staffs have played a central role in designing and implementing the system, with support from contractors to meet the requirement of Thailand Greenhouse Gas Management Organization (TGO), which oversees the T-VER program. This collaboration ensures the successful completion of the project, which will not only reduce the university's energy costs but also generate carbon credits that contribute to Thailand's voluntary emission reduction targets

This project also serves as an educational tool, with students from courses such as Energy Conservation and Management, Energy Storage, and Renewable Energy actively participating in the evaluation and implementation of the solar rooftop system. This real-world experience allows students to develop practical skills in renewable energy management, carbon monitoring, and sustainability practices. By participating in the T-VER project, students gain a deeper understanding of how renewable energy can be used to combat climate change and how carbon credit trading can incentivize further reductions in greenhouse gas emissions.

The process for implementing the solar rooftop system involved several key steps. University leadership worked with the engineering faculty to develop a detailed project plan. Contractors were brought in to manage the installation of the solar panels across various buildings, and discussions were held to determine how the resulting carbon credits would be allocated. Project documentation, including validation reports and carbon credit applications, was submitted to the TGO for approval. Upon successful validation, the project will be registered under the T-VER program, allowing the university to earn and trade carbon credits.

The results of the 2.54MW solar rooftop project are expected to reduce GHG for approximately 2,027 tCO₂eq per year. Once completed, the system will substantially reduce the university's greenhouse gas emissions and energy costs, contributing to both Thailand's national climate goals and Walailak University's sustainability objectives. The university has also developed the capacity to monitor and assess its carbon footprint, paving the way for future projects, such as the solar car parking and solar floating systems, which will generate additional carbon credits. Additionally, university personnel, including both staff and students, have gained valuable knowledge and skills in renewable energy management, carbon accounting, and climate action.

In terms of impact, the T-VER project has positioned Walailak University as a leader in sustainability, both within Thailand and internationally. By reducing greenhouse gas emissions and promoting renewable energy, the project aligns with SDG 13: Climate Action, which calls for urgent action to combat climate change and its impacts. The project also supports SDG 17: Partnerships for the Goals, as it relies on strong collaboration between the university, government agencies, and private sector partners to achieve its objectives. Finally, the project contributes to SDG 7: Affordable and Clean Energy by increasing access to clean, renewable energy on campus and reducing the university's reliance on non-renewable energy sources.