University : National Chin-Yi University of Technology
Country : Taiwan
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[SDGs 6] Clean Water and Sanitation 淨水與衛生

[6.5.4] Does your university as a body, where water is extracted (for example from aquifers, lakes or rivers), utilise sustainable water extraction technologies on associated university grounds on and off campus?

National Chin-Yi University of Technology (NCUT) has established the **Institute of Global Energy & Environmental Technology Science** to promote sustainable solutions and implement **local energy balance**, a critical foundation for fostering coexistence, prosperity, and long-term survival between enterprises and the environment.

At the core of this initiative is the **"Water Energy Conversion System,"** which enables companies to utilize water as a source of energy. This system allows businesses to **balance ecological preservation** while simultaneously generating substantial economic benefits. By optimizing water usage through innovative energy conversion techniques, the system offers a sustainable approach that reduces environmental impact while enhancing operational efficiency.

Through the **Institute of Global Energy & Environmental Technology Science**, NCUT is pioneering advancements in water-based energy management, ensuring that enterprises can thrive without compromising the ecological balance necessary for long-term environmental sustainability.

The technology of Institute of Global Energy & Environmental Technology Science

The construction of a closed water energy reservoir can be classified and graded according to the actual use, and it can also stabilize the water supply during droughts, and store rainwater during extreme rainstorms to effectively prevent flood disasters.

The water demand of TSMC Zhongke Plant (Plant 15) is 16,000 tons per day, and the annual water demand is 5.84 million tons.

Assuming that a 400 m X 400 m X 10 m closed water energy reservoir is built, 1.6 million tons of water can be supplied stably during the dry season.

The energy needed during the day is produced at night and stored in a closed water energy reservoir to supply ice water and hot water demand, shifting peak power loads.