



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

[6.5.7] Does your university as a body actively promote conscious water usage in the wider community?

NCUT as a Body Actively Promotes Conscious Water Usage in the Wider Community

NCUT actively promotes conscious water usage in the wider community through education, outreach, and technological innovation. These initiatives ensure that both local residents and industries adopt more sustainable approaches to water management.

1. Community Education and Outreach

- NCUT delivers water resources management and conservation courses in community colleges and lifelong learning programs, such as Senior University.
- These programs engage senior citizens and local residents in practical training on water-saving behaviors, wastewater recycling, and rainwater harvesting, extending water literacy beyond the campus
- Public engagement activities, including campus tours and ecological education at Mingxiu Lake, raise awareness about water recycling, stormwater management, and climate resilience.

2. USR Projects and Local Industry Partnerships

- The Xinshe Mushroom Industry Innovation Project helps farmers adopt efficient irrigation and recycling techniques, addressing challenges posed by climate change and water scarcity
- Through collaborations with township governments and community groups, NCUT reaches more than 1,200 community learners annually, ensuring knowledge transfer of sustainable practices.

3. Research and Government Collaboration

- NCUT cooperates with the Ministry of Science and Technology on reservoir safety, water purification, and disaster prevention technologies, directly strengthening Taiwan's water security.
- The university also participates in government-recognized water-saving programs, achieving a 98.7% installation rate of efficient water appliances across campus, setting an example for society

4. Water Resources Education and Innovation (WRECS)



- In response to climate change and environmental challenges, NCUT established the Institute of Global Energy & Environmental Technology Science to pioneer the Water Resources Energy Conversion System (WRECS).
- The WRECS integrates smart energy management, conversion, supply, and storage technologies, using water as a sustainable energy source while ensuring ecological balance.
- Beyond serving industries like TSMC Zhongke Plant, the system educates communities on the critical link between water conservation and energy efficiency, aligning water usage awareness with broader sustainability goals.
- NCUT further supports this initiative by formulating regulations, establishing standards, and training certified professionals, enabling global adoption of water-conscious technologies.

Contribution to SDGs

- **SDG 4 – Quality Education:** Extends water literacy through Senior University, community colleges, and training programs.
- **SDG 6 – Clean Water and Sanitation:** Promotes efficient water use via outreach and WRECS innovation.
- **SDG 11 – Sustainable Cities and Communities:** Strengthens resilience by engaging farmers, industries, and local residents.
- **SDG 12 – Responsible Consumption and Production:** Encourages reuse, recycling, and water-saving technology adoption.
- **SDG 13 – Climate Action:** Provides innovative water-energy solutions to address climate-induced droughts and floods.
- **SDG 17 – Partnerships for the Goals:** Collaborates with local, national, and global partners to scale water-conscious practices.



NCUT Water Resources Education



In response to the pressing global challenges of climate change, extreme weather, and environmental disasters, NCUT has been dedicated to innovative solutions aimed at balancing ecological preservation and sustainable energy use. The core question we address is: How can we harmonize ecological protection with significant benefits to enterprises when utilizing energy resources?

Our solution lies in "Implementing Local Energy Balance", a method that focuses on leveraging water as a key energy source. Through the construction of closed reservoirs and energy storage using water, we are pioneering a water resource energy conversion system. This system aligns with the Earth's natural energy cycles and allows businesses to dramatically reduce operational costs while maintaining environmental balance.

By integrating the natural principles of water management into energy systems, NCUT is leading the way toward sustainable energy practices that not only support business efficiency but also prioritize ecological health. This approach fosters long-term resilience and sustainability in the face of climate challenges.

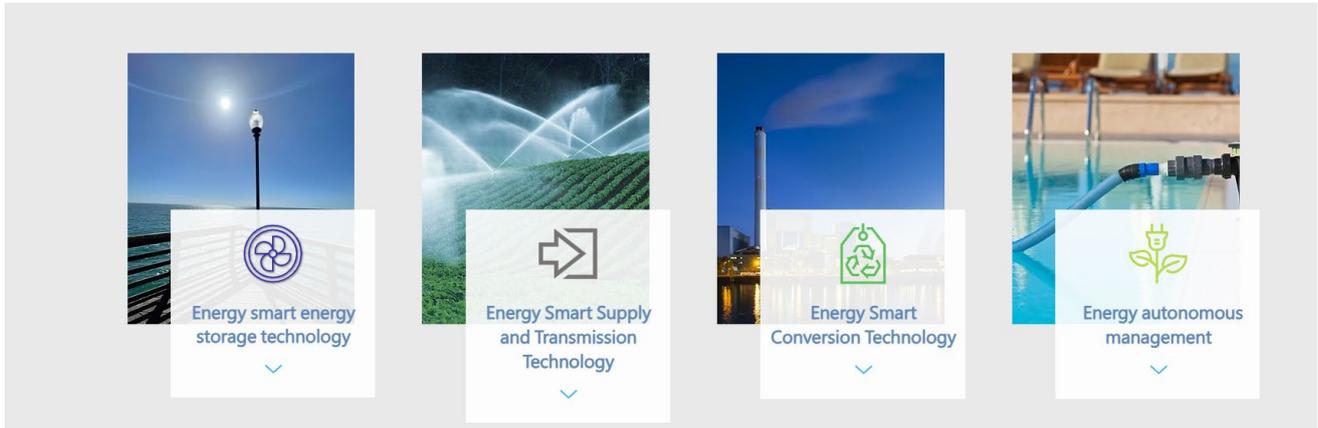
The "Water Resources Energy Conversion System" at NCUT represents a groundbreaking integration of cutting-edge technologies aimed at revolutionizing sustainable energy use. By combining Smart Energy Management Technology, Smart Energy Conversion Technology, Smart Energy Supply and Transmission Technology, and Smart Energy Storage Technology, this system is designed to harness water as a vital energy resource.

NCUT envisions this innovation as the foundation of "Green Energy Investment" and the central pillar of a new global "Green Energy New Deal." As a pioneer of this first-of-its-kind system, NCUT is committed to establishing the necessary infrastructure to support its global adoption, including:

1. **Formulating Regulations:** Developing comprehensive policies and frameworks that guide the efficient implementation of water-based energy solutions.
2. **Establishing Standards:** Setting international benchmarks for the design, operation, and management of the Water Resources Energy Conversion System.
3. **Training Technical Personnel:** Educating and certifying experts through the "**Water Resources Energy Conversion System Professional Technical Personnel Training and Certification Program.**" This initiative will ensure that a skilled workforce is equipped to implement and manage this green energy technology worldwide.

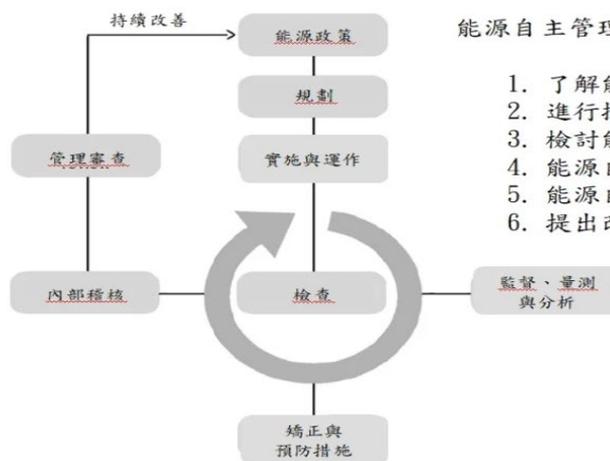
Through this approach, NCUT is leading the global transition to sustainable energy, positioning itself as a beacon of innovation and environmental responsibility.

service items



Energy autonomous management

Energy autonomous management process



能源自主管理流程：

1. 了解能源使用結構與流向
2. 進行掛錶，建置能源負載曲線
3. 檢討能源使用合理性，並找出其缺失
4. 能源自主管理預期績效
5. 能源自主管理培訓計畫
6. 提出改善計畫

The core work of energy self-management

What can water energy systems do for the planet?

Let the temperature of the earth drop by X°C

解決環境問題：

1. 建築物熱排放
2. 空氣污染

解決企業問題：

1. 企業電力需求與營運費用
2. 提升建築物能源管理效益



解決水利問題：

1. 缺水
2. 急暴雨淹水

解決電力問題：

1. 缺電
2. 台電電力備載容量