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

[6.5.3] Does your university as a body support water conservation off campus?

NCUT's Off-Campus Contribution to Water Conservation and Sustainable Water-Energy Management

1. Responding to Global and Local Water Challenges

Global warming and climate change are intensifying droughts and floods**,** worsening the uneven distribution of water resources. In Taiwan, water scarcity is particularly acute, threatening communities, agriculture, and high-tech industries. To address these challenges, NCUT has positioned water conservation and sustainable water management as a strategic priority, supporting both campus and off-campus communities.

2. Community Water Management Education

- NCUT designs and delivers water resources management and conservation courses at community colleges.
- These programs enhance local residents' awareness of sustainable water use, empowering them to respond to drought conditions and adopt household water-saving practices.

3. Collaboration with High-Tech Industries

- Faculty members from the Department of Refrigeration, Air-Conditioning, and Energy Engineering collaborate with the government on the High-tech Industry Water-Saving and Energy-Saving Technology Tutoring Project.
- This project introduces advanced water-saving technologies into Taiwan's semiconductor and electronics sectors, industries with extremely high water demand, ensuring sustainable industrial development while conserving water.

4. Research and Innovation: Water Resources Energy Conversion System

- NCUT established the Institute of Global Energy & Environmental Technology Science to pioneer sustainable solutions in water-energy management.
- Its flagship innovation, the Water Resources Energy Conversion System, uses water as a medium for energy storage, transmission, and conversion, balancing ecological preservation with industrial productivity.

- The system integrates:
    - Smart supply and transmission technologies
    - Smart energy storage (thermal and electrical)
    - Smart conversion and balancing technologies
    - IoT-based smart management technologies
- This is the first system of its kind worldwide, developed at NCUT, positioning the university as a leader in global water-energy innovation.

5. Talent Training and Global Dissemination

- NCUT has launched a Professional and Technical Personnel Training and Certification Program in water-energy conversion.
- This initiative equips professionals with the skills to implement local energy balance strategies, promoting sustainable industrial practices worldwide.

Contribution to SDGs

- **SDG 6 – Clean Water and Sanitation:** Promotes water conservation education and efficient water use in industries.
- **SDG 7 – Affordable and Clean Energy:** Pioneers water-based renewable energy storage and management systems.
- **SDG 9 – Industry, Innovation, and Infrastructure:** Advances water-energy technologies for industrial sustainability.
- **SDG 11 – Sustainable Cities and Communities:** Builds resilience against drought and water shortages at the community level.
- **SDG 13 – Climate Action:** Provides innovative, scalable solutions to mitigate climate-induced water and energy crises.
- **SDG 17 – Partnerships for the Goals:** Strengthens collaboration between academia, government, and industry for sustainable resource management.

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