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[SDGs 7] Affordable and Clean Energy 可負擔能源

[7.4.1] Does your university as a body provide programmes for local community to learn about importance of energy efficiency and clean energy?

NCUT Programmes for Local Community on Energy Efficiency and Clean Energy

NCUT extends its sustainability mission beyond campus by providing programmers, conferences, and outreach initiatives that educate the local community about the importance of energy efficiency and clean energy.

1. Academic–Community Integration

- NCUT incorporates energy management and monitoring technologies into courses such as *Network Monitoring Technology* and *Monitoring System Design and Internship*, which serve as learning models for both students and community participants.

- The Power Management Laboratory and renewable energy installations (solar PV and solar-thermal systems) act as live demonstration sites, helping visitors understand practical applications of clean energy

2. ISO 50001 Sharing and Public Engagement

- By adopting the ISO 50001 Energy Management System, NCUT sets a benchmark for energy reviews and efficiency planning. Best practices are shared with local governments, industries, and community groups through seminars and workshops, enhancing public awareness of conservation strategies.

3. GTEA Symposium on Green Technology (2025)

- On May 23, 2025, NCUT's College of Engineering hosted the GTEA Symposium on Green Technology and Engineering Applications, focusing on solutions to energy shortages and climate change.

- Keynotes featured Prof. Petr Sittner (Czech Academy of Sciences) on shape memory alloys and Mr. Wen-Cheng Tsai (Delta Electronics) on hydrogen energy.

- The symposium covered eight fields including green energy, smart manufacturing, and carbon cycle technologies, attracting wide participation from academia, industry, and the community.

4. Energy Education and Laboratory Facilities

The Department of Electrical Engineering provides extensive hands-on training and research opportunities in energy efficiency and renewable energy. Facilities include:

- Power Electronics Laboratory, Power Monitoring Laboratory, and Wind Power Generation Laboratory.

- Specialized facilities such as a Solar Photovoltaic Skills Certification Test Site, Wind Power Generation System Test Site, and Renewable Energy Experimental Classroom.

Through these, NCUT trains students and community participants in power systems, renewable energy integration, monitoring technology, and AI applications. The goal is to cultivate technical manpower for the renewable energy industry while supporting local businesses and industries with R&D in green energy.

5. **ESG Talent Development and Carbon Management Services**

- NCUT is developing a full-service ESG platform, offering:

    o Carbon inventory services for SMEs.
    o Carbon optimization and consulting.
    o International certification support.
    o Carbon trading education.

- Plans include creating specialized ESG laboratories and offering interdisciplinary courses to cultivate ESG professionals with practical carbon management skills.

6. **National Green Collar Talent Cultivation Program**

In collaboration with the New Taipei City Government, NCUT co-leads Taiwan's first Green Collar Talent Cultivation Program (2024–2030). With NT$30 million in funding, the initiative promotes education in green literacy, green science, and green skills.

- NCUT provides teacher training, summer camps, and expert lectures to integrate green-collar education into high schools.

- The NCUT Carbon Neutrality Center worked with Jhangshu International Creative Technical High School to conduct Taiwan's first carbon inventory at a technical high school.

- Lesson plans and internships are designed to link green literacy with real-world employment trends, creating a pipeline of green professionals for the net-zero future.

Contribution to SDGs

- **SDG 4 – Quality Education:** Promotes green skills and sustainability literacy.

- **SDG 7 – Affordable and Clean Energy:** Provides training in renewable energy systems.

- **SDG 9 – Industry, Innovation and Infrastructure:** Bridges academia and industry for clean energy solutions.

- **SDG 11 – Sustainable Cities and Communities:** Supports net-zero initiatives in New Taipei City.

- **SDG 13 – Climate Action:** Builds awareness and technical capacity for carbon reduction.

- **SDG 17 – Partnerships for the Goals:** Collaborates with government, schools, and industries.

In summary: NCUT's community programmes blend classroom instruction, live demonstrations, and public engagement around ISO 50001 practices and renewable technologies. These efforts help local residents, industry partners, and other stakeholders understand both the *importance* and the *practical applications* of energy efficiency and clean energy solutions.

▲Carbon Footprint Lead Verifier Training

▲Greenhouse Gas Inventory Standard Lead Verifier Training

Smart Energy Management Program

A campus-wide initiative leveraging IoT-based real-time monitoring, **automated lighting**, and intelligent climate control to reduce energy consumption and greenhouse gas emissions. This program promotes low-carbon campus operations and data-driven energy optimization.

▲ Gaia Day Summit Forum 2024