



University : National Chin-Yi University of Technology
Country : Taiwan
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[SDGs 17] Partnership for the Goals 全球夥伴

[17.3.12] Please indicate if your university publishes progress against SDG12?

NCUT is committed to embedding sustainable consumption and production practices into all aspects of its operations. Through comprehensive policies, strict waste management, innovative circular economy projects, and strong community partnerships, NCUT contributes directly to the achievement of **SDG 12: Ensure sustainable consumption and production patterns.**

1. Waste Reduction and Resource Recovery

Institutional Framework

- NCUT has established “Implementation Measures for Garbage Reduction and Resource Recycling”, overseen by the Center of Environmental Protection and Occupational Safety and Health.
- Responsibilities are clearly assigned to departments, ensuring proper waste classification, collection, and reporting.
- Biannual committee meetings evaluate progress and propose new initiatives.

Daily Practices

- **Food Waste Recycling:** Since 2024, NCUT has recycled over 836 kg of food waste, which is processed into pig feed, compost, or energy generation. Part of this compost is reused for campus landscaping.
- **Resource Recycling:** Recycling bins are installed in every building and emptied daily by staff. Materials are aggregated at central stations and collected by certified recyclers.
- **Inorganic Waste:** Classified and entrusted to the Taichung City Cleaning Department for regulated recycling and reuse.

2. Reducing Paper and Plastics

Key Campaigns

- **Reuse the Used Copied Paper:** Encourages double-sided copying and reusing one-sided sheets.
- **One Person, One Chopsticks:** Promotes stainless steel chopsticks instead of disposable bamboo chopsticks.

- **Ban on Disposables:** In line with Taichung’s 3.0 Source Reduction Plan, NCUT bans single-use straws, bottles, and plastic tableware at meetings, activities, and training.
- **Paperless Conference Rooms:** Established in the library and administration building, equipped with large screens for digital material display.
- **E-Document System:** Over 85% of official documents are processed electronically, reducing reliance on paper.

3. Green Procurement

- NCUT prioritizes products with energy-saving, water-saving, and eco-label certifications under its Green Procurement Operation Management Points.
- Green procurement ratio surpassed 97% in 2024, earning MOE recognition as an “Outstanding Green Procurement School.”
- Between 2023–2024, NCUT purchased NT\$2.1 million in goods and services from sheltered workshops, supporting people with disabilities and reinforcing social responsibility.

4. Energy-Saving and Smart Classrooms

- An Energy-Saving Class Schedule System was installed in 33 classrooms to automatically control lighting, fans, and AC.
- From 2021 to 2024, the system reduced power consumption by 46,000 kWh (-34.1%), significantly lowering costs and emissions.

5. Circular Economy and Agricultural Innovation

Mushroom Waste Recycling (USR Project)

- NCUT developed space bag matrix drying equipment to recycle discarded mushroom substrates.
- Outputs are reused as organic fertilizer or biomass energy for electricity generation, with waste heat further utilized for drying.
- The project was awarded the Silver Medal in the MOE’s Climate Change Creative Implementation Competition and the EPA Net Zero Transformation Practice Special Award.

Automated Mushroom Shearing Machine

- Designed by faculty and students to reduce labor costs and improve productivity for mushroom farmers.
 - Enhances sustainable agricultural practices while providing students with practical, innovation-driven experience.
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6. Community Engagement and Education

- **Workshops and Competitions:** NCUT hosts recycling competitions and campaigns to raise awareness.
- **Student Service Learning:** All students must complete 54 hours of service learning, including recycling, waste sorting, and community sustainability projects.
- **Local Partnerships:** NCUT collaborates with the Taichung City Government to pilot and expand municipal waste reduction policies across campus.

7. Recognition and Achievements

- Recognized by the Taichung City Government and MOE for outstanding performance in source reduction and green procurement.
- Awarded national-level prizes for its mushroom waste recycling innovation.
- Serves as a model in the region for sustainable campus operations, circular economy integration, and community engagement.

NCUT's progress on SDG 12 demonstrates a comprehensive approach—spanning campus operations, procurement, digital transformation, agricultural innovation, and community partnership. By embedding sustainability into daily life and research innovation, NCUT not only reduces its ecological footprint but also empowers students and local industries to adopt responsible consumption and production practices.

Through continuous monitoring, policy reinforcement, and educational integration, NCUT stands as a leader among Taiwan's universities in driving SDG 12 forward.

B. Construction of an E-Environment

(A) Paperless Campus Environment

To decrease paper usage, NCUT has adopted a paperless campus environment, producing teaching materials, meeting documents, teaching, and examinations electronically without the need for paper. This includes initiatives such as paperless meeting rooms, remote video teaching, online learning platforms, and electronic official documents.



▲ Paperless Meeting Room on 5F of the Library and Information Building



▲ Jingxuan Paperless Meeting Room on 6F of the Qing-Yong Building



(C) Official Documents and Records Management Information System

NCUT actively promotes Official Documents and Records Management Information System, aiming to achieve service networking, information security, intelligent sign-off, simplified work processes, and paperless official documents. This comprehensive transition to electronic documents in the university is facilitated through the Official Documents and Records Management Information System.

NCUT effectively manages overdue official documents every month by relying on statistics of overdue official documents and sending audit reminders through the system. The university continually promotes email communication and internal notices, significantly reducing the transmission of paper official documents and lowering the consumption of paper photocopying. This supports energy-saving and paper reduction initiatives.

To enhance the operational efficiency of the Official Documents and Records Management Information System, we have upgraded to the second-generation system. This upgrade includes comprehensive enhancements to system information security, as well as enhancements in user-friendliness and online signature smart features. The goals of this upgrade are to save energy, reduce paper usage, increase efficiency, and optimize manpower.



▲ Official Documents and Records Management Information System

Table 50: Statistics on the Official Documents and Records Management Information System

Year	Total documents created	Documents fully signed online	Rate of fully online signed documents	Announcements published on the Electronic Bulletin Board
2022	21,410	17,977	83.97%	2,699
2023	22,032	18,523	84.07%	2,787
Jan-Jun 2024	11,183	9,603	85.87%	1,420

C. Reduce Waste Generation

(A) Reduce the Use of Disposable Tableware and Bottled Water

Since November 2022, NCUT has implemented a policy to reduce the use of disposable tableware and bottled water for meetings, training sessions, and activities conducted by top-level units. This policy applies to events such as school council meetings, various administrative meetings, school anniversary events, sports days, and fairs. The use of disposable tableware and bottled water at meetings and activities organized by other administrative units or student clubs, such as departmental or club visits, is recommended to be minimized through advocacy and promoting green actions to reduce environmental burden.



▲ Reusable Meal Boxes



▲ Eating Cycles

(Nutrients Consumed, Food Waste Left Behind, Lunch Boxes Returned)



(B) Waste Reduction

To respond to the government's environmental protection policy, NCUT has formulated Waste Reduction and Resource Recovery Regulations. By improving the planning and management system, the university strengthens the recovery and recycling of resource waste. Through education and advocacy for the active promotion of waste reduction, NCUT also achieves the sustainable utilization of resources, improves quality of life, maintains the ecological environment, and creates a healthy, safe, and comfortable campus environment.

NCUT has introduced waste compactors as part of its waste management strategy, designed to compress domestic waste collected from each building on campus. By compacting the waste, it is packaged into dense, flat, and stackable blocks, which reduces the amount of space occupied by waste. The use of waste compactors not only increases the available space for waste storage but also enhances transportation convenience as waste blocks are easier to handle and transport, leading to significant reductions in transportation costs. Furthermore, compacting the waste reduces the risk of flammability, particularly with loose waste paper, contributing to improved safety and reducing the risk of fire hazards on campus.

(C) Treatment of Hazardous Industrial Waste

At NCUT, hazardous industrial waste is managed through a combination of outsourced services and compliance with environmental regulations set by the Environmental Protection Administration. The process involves contracting qualified hazardous waste removal and treatment companies. In line with EPA regulations, a hazardous waste transport manifest has been created and signed by both removal and treatment companies. Once waste is processed by a certified treatment facility, a "Hazardous Industrial Waste Proper Treatment" document is issued and retained by the Center for Environmental Protection and Occupational Health and Safety.

Each laboratory collects laboratory waste liquids in designated recycling bins, which are then stored in departmental waste liquid storage rooms. Once a certain quantity is accumulated, the waste is handed over to government-approved hazardous waste disposal companies for transportation to certified treatment facilities.



▲ The Hazardous Waste Treatment Process of NCUT

(D) Resource Recovery

The NCUT Waste Sorting and Resource Recycling Implementation Guidelines detail the types, storage, processing procedures, and designated responsibility areas for resource recycling, providing a basis for all faculty and students to follow in their recycling efforts.

After the cleaning staff in each building collects recyclable items and deposits them at designated resource recycling stations, the Center for Environmental Protection and Occupational Health and Safety sorts the items. Sorted materials are then entrusted to the Taiping District Cleaning Team of Taichung City for recycling.



▲ Cleaning Crew Recycling



▲ Resource Recycling Bins



▲ Paper Container Recycling



▲ Waste Battery Recycling



▲ Paper Recycling