



University : National Chin-Yi University of Technology  
Country : Taiwan  
Web Address : www.ncut.edu.tw

[SDG 12] Responsible Consumption and production 責任消費與生產

[12.4.1] Publication of sustainability report

## National Chin-Yi University of Technology (NCUT) 2024–2025 Sustainability Report

### 1. Introduction: Institutional Vision and Mission

NCUT, located in Taichung, Taiwan, has developed into one of the country's most prominent industrial universities of technology. With its strong focus on practical training, research, and sustainability, NCUT is committed to cultivating a new generation of professionals equipped with:

- **Professional Competence** – technical expertise aligned with industry needs.
- **Humanistic Literacy** – social responsibility, ethical values, and awareness of sustainability.
- **Global Perspective** – preparing students for international collaboration and leadership.

NCUT's commitment to sustainability is not only reflected in daily campus operations but also in national and international recognition:

- **UI GreenMetric World University Ranking 2024:** Top 54 globally and Top 3 in Taiwan.
- **Times Higher Education (THE) Impact Rankings:** Strong performance in **SDG 6** (Clean Water), **SDG 7** (Clean Energy), and **SDG 9** (Industry, Innovation and Infrastructure).
- **QS World University Rankings:** Recognized for academic excellence and employer reputation.

### 2. Talent Development for a Sustainable Future

#### 2.1 ESG and Green Collar Programs

NCUT emphasizes ESG talent development, preparing students for careers in sustainability-driven industries. The Green Collar Talent Cultivation Program, co-developed with New Taipei City, focuses on:

- Green literacy
- Green science
- Green skills

Through this initiative, NCUT helps bridge academic learning with industry demand, ensuring a workforce prepared for Taiwan's net-zero goals.

#### 2.2 International Partnerships

NCUT strengthens its global outlook through collaborations with:

- **Suwa Tokyo University of Science (Japan)** – joint automation projects.
- **Czech Jihlava Institute of Technology (VSPJ)** – student/faculty exchanges, smart manufacturing.
- **Indonesian universities** – social enterprise and carbon neutrality projects.

### 2.3 Student Engagement

Students participate in innovation and entrepreneurship programs such as:

- The Green Living Creative Design Competition (with Panasonic Taiwan).
- The Innovation and Entrepreneurship Promotion Base (Smart Taichung initiative).
- International invention fairs (Germany, Korea, Russia, etc.).

## 3. Sustainable Campus Operations

### 3.1 Energy Efficiency

- NCUT implemented the **ISO 50001 Energy Management System** (2021), integrating energy reviews, baselines, and continuous improvement.
- Renovations and new buildings comply with **Taiwan's Green Building Label**.
- Smart building upgrades include **real-time energy monitoring** and **IoT-driven control systems**.

### 3.2 Water Management

- **Sewage treatment plant:** Collects, treats, and reuses 40% of campus wastewater for irrigation and Mingxiu Lake.
- **Rainwater recycling system:** Installed in NCUT Dormitory for toilet flushing.
- **Ecological education:** Pinglin Park ecological pool serves as a learning hub for students and the local community.

### 3.3 Plastic and Disposable Reduction

- NCUT enforces Taiwan's Single-Use Plastics Directive.
- Campaigns encourage reusable bottles, stainless steel chopsticks, and eco-friendly lunch boxes.
- The One Person, One Chopsticks Campaign and "Bring Your Own" initiatives significantly reduced disposable waste.

## 4. Waste Management and Circular Economy

### 4.1 Waste Monitoring

- Total waste (2023): **74,646 kg**
- Total waste (2024): **64,207 kg** → **14% reduction** year-on-year.

## 4.2 Recycling Programs

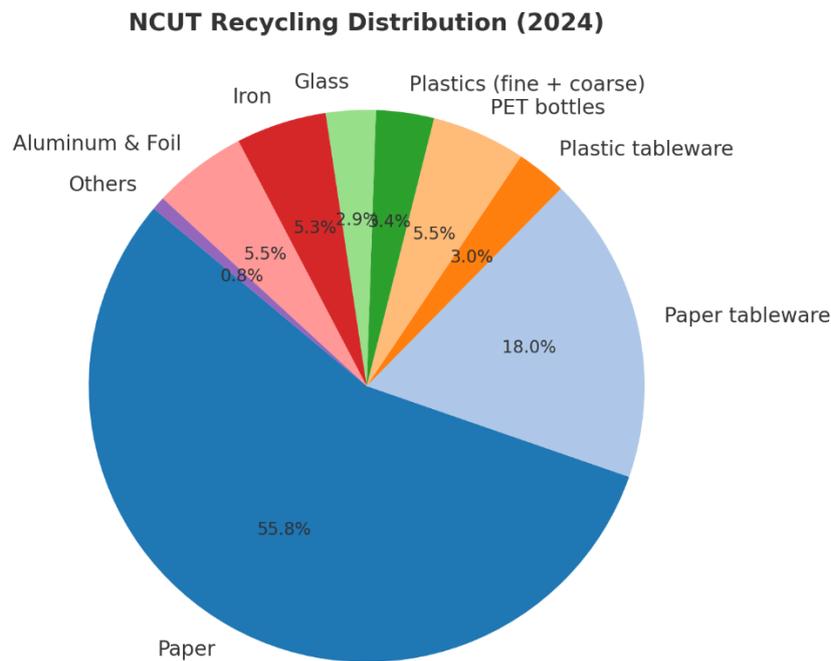
- Segregated bins for **paper, plastics, metals, glass, batteries**.
- Proceeds from recyclables reinvested into student funds.
- Students complete **54 service learning hours**, often tied to recycling and community clean-up projects.

## 4.3 Hazardous Waste Management

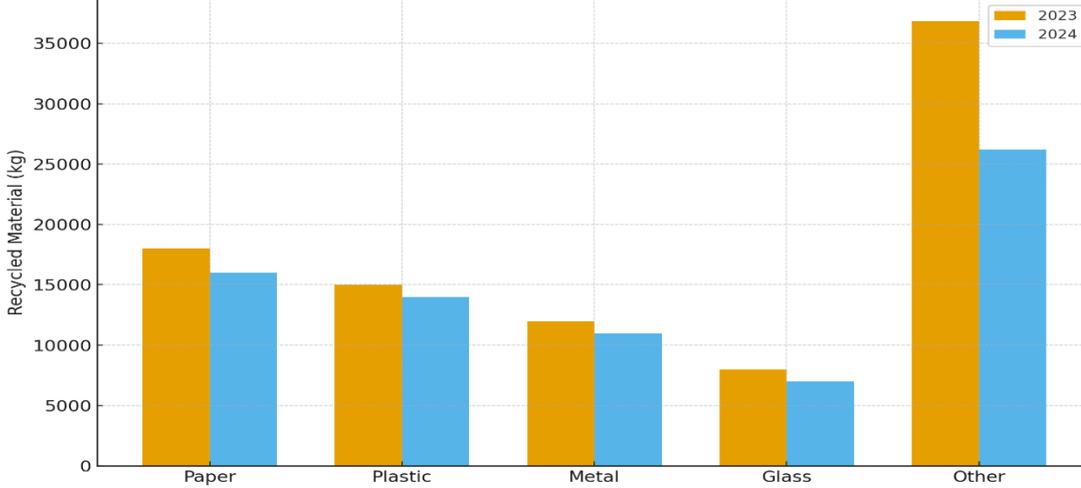
- **Toxic chemical SOPs** govern storage, use, and disposal.
- **GPS tracking system** ensures safe transport to certified waste processors.
- Reports submitted regularly to the **Environmental Protection Administration (EPA)**.

### Charts:

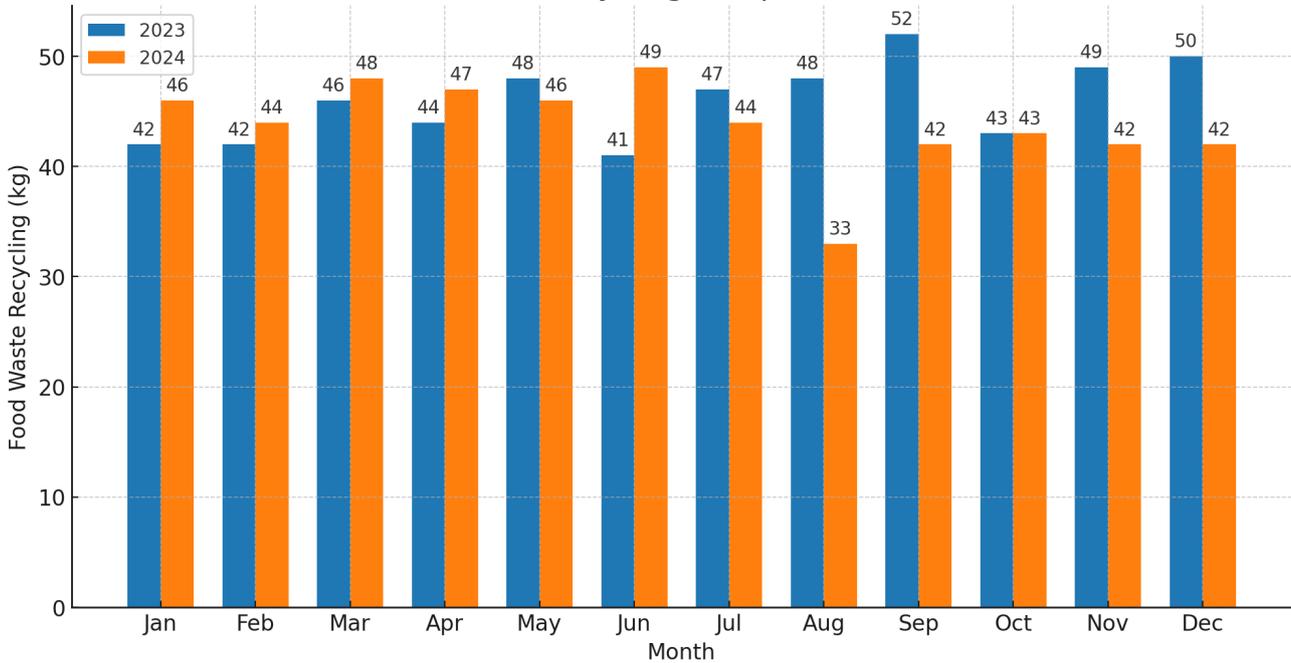
- Bar chart: *Year-on-year waste reduction (2022–2024)*.
- Pie chart: *2024 Recycling distribution by category (paper, plastics, metals, etc.)*.



NCUT Recycling Distribution by Category (2023 vs 2024)



NCUT Food Waste Recycling Comparison: 2023 vs 2024



## 5. Engagement and University Social Responsibility (USR)

### 5.1 Local Community Education

- **Senior University programs** – energy efficiency and water management workshops.
- **Community colleges** – training in water conservation and renewable energy.

### 5.2 Industry Services

- Clean energy audits and consulting services for SMEs.
- Technical service centers (Carbon Neutrality Center, Smart Machinery Center, Precision Machinery Testing Center).

### 5.3 Government Collaboration

- **Reservoir Safety Project (MOST-funded)** – disaster prevention technologies.

## 6. Climate Action and Carbon Neutrality

### 6.1 Greenhouse Gas Reduction

- IoT-based smart monitoring for electricity and energy use.
- Low-carbon construction materials (calcium silicate boards).
- Tree planting in partnership with **Green G 泉 Social Enterprise** – verified carbon offsets with GPS tracking.

### 6.2 Yunus Social Business Center

- Supports the global “Three Zeros” movement: Zero Poverty, Zero Unemployment, Zero Net Carbon Emissions.
- Developed Taiwan’s first Zero-Carbon Travel Program.

### 6.3 Low-Carbon Mobility

- iBike station on campus.
- 800+ bicycles in use (6.3% of population).

## 7. SDG Alignment and Impact

NCUT’s sustainability actions align directly with multiple UN Sustainable Development Goals (SDGs):

- **SDG 6 (Clean Water & Sanitation):** Sewage treatment and 40% water reuse.
- **SDG 7 (Clean Energy):** Hydrogen energy symposiums, renewable energy labs.
- **SDG 12 (Responsible Consumption):** >95% green procurement ratio since 2009.
- **SDG 13 (Climate Action):** Carbon reduction program, zero-carbon travel, reforestation.

Looking forward, NCUT will continue its leadership in education, industry collaboration, and sustainability innovation.

Future priorities include:

- Expanding hydrogen energy R&D.
- Strengthening smart energy monitoring across all buildings.
- Increasing renewable energy adoption on campus.
- Extending carbon neutrality services to SMEs across Taiwan.
- Deepening international cooperation for **SDG-driven research and exchange**.

# Campus Sustainability Report

## 2024



Office of Institutional Research

## Message from the President

In 1987, the UN's World Commission for Environment and Development, also known as the Brundtland Commission, published "Our Common Future," outlining the path toward global sustainable development. In 1992, the UN's Rio Declaration at the Earth Summit introduced the concept of "Think Globally, Act Locally," urging nations to collaborate for sustainable human development. With the UN's adoption of the Sustainable Development Goals in 2015, a comprehensive guideline for global sustainable development was established, outlining a 2015-2030 action plan encompassing society, the environment, and the economy.

Focusing on "Our Common Future," we joined the Ministry of Education's Green University Model School Selection Plan in 2009. Alongside 12 other institutions, we were swiftly chosen as green models from 37 peers, making us the sole national university of technology to receive this recognition. On June 4, 2009, representatives from the 13 selected schools, including ours, convened at the Ministry of Education to sign the Talloires Declaration.

The school has developed into an **International Quality Industrial University** that values practicality and innovation. Through strategic programs and funding support, we aim to develop talent with professional competence, humanistic literacy, social awareness, and an international perspective. We are committed to creating a green learning environment that is sustainable, safe, friendly, healthy, environmentally conscious, peaceful, energy-efficient, refreshing, and nurturing, while fostering a core culture of sustainable development. In extending our efforts outwards, we are aligned with central policies and actively collaborate with communities, industries, and local authorities to fulfill our USR.

NCUT ranks among the top 55 universities in the UI GreenMetric World University Rankings and is in the top 6 in Taiwan.

At NCUT, we align ourselves with the vision of our founder: "Education is nothing if not a role model" and "Take from society, give back to society." Alongside the UN's SDGs, we are dedicated to the spirit of education and the development of young talent. Through continuous advancement and improvement, we have become a model of sustainable development in the field of higher education.



▲ Dr. Wen-Yuan Chen, the 8th president of National Chin-Yi University of Technology

## A. 2024 International Highlights



### ● Times Higher Education, THE

- (1). Ranked 451-500 in THE Asia University Rankings 2024.
- (2). Rankings in various fields:
- (3). Ranked 801-1000 in the field of Electrical Engineering and Computer Science and 17<sup>th</sup> in Taiwan.  
Ranked 801-1000 in the field of Engineering and 17<sup>th</sup> in Taiwan.



### ● QS World University Rankings : Asia 2025

- (1). Ranked 294<sup>th</sup> in Asia (top 300).



### ● UI GreenMetric World University Rankings

- (1). Ranked 54<sup>th</sup> in the world and 3<sup>rd</sup> in Taiwan in 2022.
- (2). Ranked 54<sup>th</sup> in the world and 3<sup>rd</sup> in Taiwan in 2023.
- (3). Ranked 55<sup>th</sup> in the world and 6<sup>th</sup> in Taiwan in 2023.



## C. ESG and Net-Zero Carbon Emissions

### (A) Commitment to Sustainable Development

In response to the 2030 Agenda for Sustainable Development adopted at the 2015 UN Sustainable Development Summit, which features the 17 Sustainable Development Goals (SDGs), NCUT established the ESG Sustainable Development Center in 2022. This center supports businesses in achieving net-zero carbon emissions, optimizing energy management, transitioning to a circular economy, developing sustainable talent, and promoting corporate sustainability.

### (B) Dedicated Unit

The NCUT Office of Industry-Academia Collaboration oversees ESG-related initiatives, with the ESG Sustainable Development Center managing tasks such as carbon footprint audits, carbon optimization, international certifications, sustainability reporting, and carbon credit trading to help businesses achieve net-zero carbon emissions.

### (C) Implementation Highlights

1. Training Verification Specialists: In 2023, NCUT trained 33 greenhouse gas verification specialists and 35 carbon footprint verification specialists.
2. Carbon and Energy Audits: NCUT completed 89 carbon audits and 17 energy audits for industries in 2023.
3. Strategic Partnerships: NCUT collaborated with Bellcert Group, ARES International Certification Co., Ltd., OHI Dental Welfare Alliance, ESG Global Federation, Low-Carbon Industry Alliance, the Commerce Development Research Institute (CDRI), the Chinese Tourism Management Association, and the Taiwan Agricultural and Fisheries Product Marketing Cooperative.

### (D) Net-Zero Carbon Emissions at NCUT

1. **Renewable Energy:** Promote the green energy industry and bridge the gap between learning and application by establishing solar photovoltaic skills certification test sites, wind power generation system test sites, and renewable energy experimental classrooms.
2. **Waste Recycling:** Strengthen the recovery, recycling, and reuse of resource waste by enhancing planning and management systems to achieve sustainable waste management.
3. **Plant a Tree for the Future:** As part of the "Have You Planted a Tree?" Green Hope Spring zero-carbon tourism initiative, NCUT planted Taiwan's treasured forest ruby, the Cinnamomum camphora tree, on its hillside to support reforestation and carbon offset goals.
4. **Carbon Optimization Technology:** Address global climate change by implementing various campus carbon optimization strategies, including energy efficiency improvements, the adoption of renewable energy, and initiatives for carbon education and advocacy.
5. **Corporate Consulting and Carbon-Neutral Technology:** Provide guidance to corporations on digital transformation, low-carbon manufacturing processes, and the development of smart chemical plants, fostering technological innovation and industrial upgrading to achieve carbon neutrality.

# 1 No Poverty



End poverty in all its forms everywhere.

## A. Complete Student Assistance Mechanism

### (A) Shuttle Service for Exam Candidates

On June 23, 2024, NCUT offered a shuttle service for candidates of the Four-Year College Admission Exam for the 2024 academic year who required transportation. The service provided free transportation for students from Jingwu Train Station to NCUT for their interviews. Senior students were also available to guide candidates around the campus. Shuttle services ran from 7:20 am to 12:00 pm, with departures every half hour, and returns from 12:30 pm to 4:20 pm, also every half hour. A total of 114 people used the shuttle in the morning, and 139 took the return shuttle in the afternoon.



▲ Shuttles for Exam Candidates

### (B) Subsidy for Full Admission Exam Registration Fees

As of the 2018 academic year, NCUT has implemented a program to support economically disadvantaged students by covering their full admission exam registration fees. Statistics on this program from the past three years are shown in Table 1.

Table 1: Statistics on the Subsidy for Economically Disadvantaged Students

| Academic year | Number of students subsidized | Subsidy funds (NT\$) |
|---------------|-------------------------------|----------------------|
| 2021          | 13 人                          | \$ 5,040             |
| 2022          | 14 人                          | \$ 6,328             |
| 2023          | 12 人                          | \$ 7,310             |

# 2 Zero Hunger



End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

## A. Sustainable Agriculture – Mushroom Industry Creation and Sustainable Management

### (A) Better Environment for Growing Mushrooms

NCUT is addressing challenges of mushroom development through the Ministry of Education's USR project, the Central Taiwan Mushroom Industry Creation and Sustainable Management Improvement Project, which involves monitoring growth environment data. The project focuses on observing the growth conditions in two different environments: the new water curtain technology field and traditional methods.

In 2024, efforts to establish intelligent climate monitoring points across various districts of Xinshe are ongoing. To date, two-tiered mushroom sheds at Zhongxingling and four traditional mushroom sheds in Qingxi, Xiecheng, Yongyuan, and Kunshan Villages have been completed. A growth environment monitoring system has also been implemented to track environmental data such as temperature, humidity, and light intensity. This system provides real-time updates through a web interface to support the development needs of local mushroom farmers.

The data collected by the system serves as a shared resource for teachers, students, and farmers to analyze factors such as growth conditions and carbon emissions. By comparing these findings with mushroom growth patterns, the optimal development environment can be identified. This approach aims to enhance shiitake mushroom production while minimizing the impact of environmental variables.



▲ Students Verifying Data in Tiered Mushroom Sheds



▲ Teachers and Students Collaboratively Installing Waterproof Pipelines in Traditional Fields



▲ Students Setting Up Sensors in Traditional Mushroom Sheds

# 3 Good Health and Well-Being

## 3 GOOD HEALTH AND WELL-BEING



Ensure healthy lives and promote well-being for all at all ages.

### A. Smoke- and Drug-Free Campus

#### (A) Smoking Prohibited on Campus

In response to the amendment to the Tobacco Harm Prevention Act, which prohibits smoking on all university campuses, the Student Affairs Office of the Academic Affairs Office convened a meeting on February 15, 2023, to eliminate smoking areas on campus. Starting March 1, 2023, the campus will be entirely smoke-free. An announcement was posted on the school website, and a letter was issued urging all teachers and students to discourage illegal smoking on campus.

They were also asked to report instances of illegal smoking to the relevant authorities for appropriate action. Efforts to reinforce anti-smoking awareness will also be emphasized to maintain a smoke-free environment on campus. Teachers and students who wish to quit smoking are encouraged to visit the Health Protection Section of the Academic Affairs Office, the Academic Affairs Section of the Department of Continuing Education, or the Environmental Safety Center for a consultation. Alternatively, they can contact the smoking cessation hotline on 0800-636363. These units will promptly provide or refer individuals to resources from medical institutions and health units, aiming to support faculty and students in quitting smoking and leading a healthier lifestyle.



#### (B) Preventing Drug Abuse Among Students on Campus

NCUT hosted a two-day Hand in Hand: Anti-Drug Awareness Camp at Long-Cyuan Elementary School in Longjing District, aimed at preventing drug abuse among students. The event was organized by the Echinacea Volunteer Service Club and the National Defense Martial Arts Club, with participation from Longjin High School's Dance Club, Longjing Junior High School's Scout Club, and students from Long-Cyuan Elementary School.

The camp featured an engaging lineup of activities, including anti-drug performances by high school students, anti-drug health exercises, drug prevention challenge games, drug abuse prevention courses, outdoor adventure games, and immersive learning sessions like "Elite Seedlings." Through these fun and educational activities, the 120 participating students gained a deeper understanding of the dangers of drugs and effective refusal strategies. The camp successfully integrated anti-drug awareness into everyday life, fostering a drug-free culture deeply rooted in schools.



▲ Hand in Hand: Anti-Drug Awareness Camp

# 4 Quality Education



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

## (D) One-on-One Assistance

A class teacher is assigned to each class to ensure proper assistance and better connection between teachers and students. The teacher must actively engage in class activities, maintain positive interactions, and take care of and assist with life and learning progress through individual consultations and group work. To further enhance assistance, the Consultation and Assistance Center conducts annual classes on teacher competence studies and class-teacher meetings to share techniques and tips to assist students.



▲ Teacher Competence Workshop: Transforming Perspectives – How to Easily Assist Students with Emotional Distress Using Multiple Personality Disorder Case Studies



▲ Class Teacher Meeting: Crisis Management for Adolescent Self-Injury

## (E) Freshman Bridge Courses and Support for Specialized Courses

To support freshmen in transitioning to their majors, NCUT organizes preparatory bridging courses, such as refresher sessions for calculus and other specialized subjects, during the summer or at the beginning of the semester.

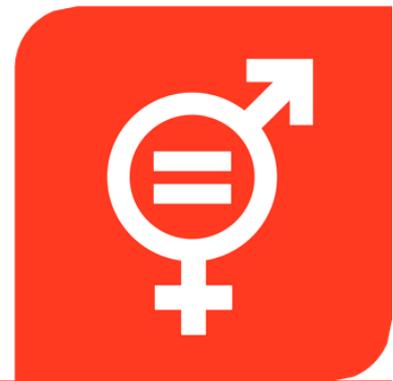
These courses are tailored to meet the needs of students from different backgrounds and levels, and are designed to help students smoothly transition into their academic studies in specialized fields.



▲ Freshman Bridge Course Support Workshop

# SDG 5

## Gender Equality



Achieve gender equality and empower all women and girls.

### A. Gender Equality Education

#### (A) Gender Equality Education Website

We have dedicated a website to gender equality, featuring updates and news on relevant topics, through which we ensure and enhance awareness of gender equality. The website also facilitates gender assistance, case reports, and follow-up actions.

Gender equality education website:

<https://osca.ncut.edu.tw/p/403-1010-842.php?Lang=zh-tw>



#### (B) Gender Equity Education Day

In 2000, Yeh Yung-chih, a student from Gao-Shu Junior High School in Pingtung, suffered gender-based bullying from his peers. On April 20, he was found lying in a pool of blood in the school restroom and was later pronounced dead after being rushed to the hospital. This incident sparked public awareness of the importance of gender education and led to the establishment of the Gender Equity Education Act.

"Let the Rose Never Wither" – starting in August 2022, the Ministry of Education designated April 20 each year as Gender Equity Education Day. Together, we work to ensure that no individual is subjected to gender-based bullying and that gender equity is realized in every corner of our society.



▲ Gender Equity Education Day

## B. Integrated Water Resources Management

### (A) Water Resources Management

To effectively manage water resource usage, digital water meters have been installed on the main water supply lines from Taiwan Water Corporation and integrated into NCUT's energy management system. This monitoring system allows us to track the university's water consumption in real time and immediately initiate emergency response procedures if any anomalies are detected.

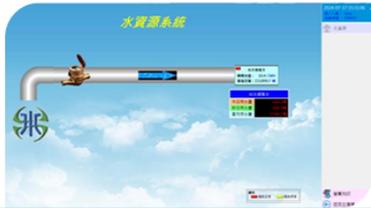
NCUT has upgraded all restroom toilets to dual-flush, water-saving models (both seated and squatting) and replaced urinals with sensor-operated models that feature Water Conservation Marks. These upgrades help conserve water and reduce maintenance efforts. All faucets, urinals, and toilets in major buildings have also been replaced with water-saving products bearing Water Conservation Marks, and water savers have been installed on faucets to enhance water conservation. Signage is also displayed to remind faculty and students to save water.



▲ Energy Management System



▲ Sensor-Operated Urinals



▲ Digital Water Meters



▲ Showerhead Water Savers



▲ Dual-Flush Toilets

### (B) Energy and Refrigeration and Air Conditioning Academic and Technical Seminar

The Energy and Refrigeration and Air Conditioning Academic and Technical Seminar aligns with the government's energy-saving policies, focusing on the development of refrigeration and air-conditioning technology for zero-energy buildings. The seminar introduces artificial intelligence to expand technological advancements. Scholars and experts from various fields, including refrigeration and air conditioning, building energy conservation, industrial clean room technology, and related energy technologies, are invited to present meticulous research results and engage in discussions to exchange research experiences.



### (C) Anti-Epidemic Air Conditioning Seminar

Whether it's air temperature and humidity control, large commercial spaces, or negative pressure rooms in hospitals, these aspects are closely related to our daily lives. The NCUT Department of Refrigeration, Air Conditioning, and Energy Engineering serves as a platform for developing talent in environmental control. Through seminars, we aim to help consumers dispel misconceptions about air conditioning and purification products. We guide consumers towards the correct understanding of epidemic prevention air conditioning, environmental health checks, and professional environmental doctors. By spreading new information on air conditioning, we strive to safeguard the health of our nation.



# SDG 8

## Decent Work and Economic Growth



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

### F) International Exhibition of Inventions

Selecting representatives of outstanding patented works to participate in international invention exhibitions is essential for enhancing international visibility. These exhibitions include the Moscow International Salon of Inventions and Innovative Technologies "Archimedes" in Russia, the International Trade Fair for Ideas, Inventions and New Products in Nuremberg, Germany, the Seoul International Invention Fair, European Exhibition of Creativity and Innovation in South Korea, the Taiwan Innotech Expo, among others.



▲ iENA – International Trade Fair "Ideas – Inventions – New Products" in Nuremberg, Germany



▲ European Exhibition of Creativity and Innovation (EUROINVENT) in Romania



▲ Taiwan Innotech Expo (TIE)



▲ Seoul International Invention Fair (SIIF) in the Republic of Korea



▲ Moscow International Salon of Inventions and Innovative Technologies "Archimedes" in Russia

## A. Promoting an Inclusive and Sustainable Industry

### (A) Innovation Incubation

The innovation incubation space at NCUT was inaugurated in 2018 and is situated on the fifth floor of the Machine Tool College Building, spanning an area of 208 pings. This space accommodates approximately 5-10 physical manufacturers. The objective of this space is to facilitate industry transformation with the support of the school, leveraging the abundant R&D resources within academic circles to benefit SMEs. Through collaboration with NCUT, SMEs can tap into the R&D expertise and energy available in academic circles, thereby identifying opportunities for corporate operations and R&D upgrades. Furthermore, enterprises can receive guidance to secure relevant subsidies from ministries and government commissions. Teachers are encouraged to actively participate in practical studies. Leveraging the innovation incubation center channels established by NCUT, they can closely collaborate with industrial and commercial sectors to undertake new product R&D and innovation, thereby contributing to practical studies.

From 2022 to the end of July 2024, a total of 12 manufacturers have been stationed in the innovation incubation space of NCUT, with full occupancy. These manufacturers have continued to collaborate with the school on industry-university R&D initiatives. As part of the innovation incubation cooperation project, manufacturers have collectively invested a total of NT\$5.10 million. This investment has been utilized to integrate resources from both the school and the industry, strengthening the mutual competitiveness of both schools and enterprises.

Statistics on innovation incubation from the past three years are shown in Table 31.

Table 31: Statistics on Innovation Incubation

| Year         | Number of manufacturers | Cooperation projects (NT\$) |
|--------------|-------------------------|-----------------------------|
| 2022         | 6                       | 1,800,000                   |
| 2023         | 6                       | 1,800,000                   |
| Jan-Jul 2024 | 5                       | 1,500,000                   |



▲ Manufacturer Conference Space



▲ HO TAI DEVELOPMENT CO., LTD. Training Course



▲ Office Space Layout



▲ Manufacturer Social Space

### (B) AI Creation Award

NCUT achieved excellent results in the 13th 2024 National University/College AI Creation Awards. The Department of Intelligent Automation Engineering team won first place with their project "A Thousand Tons of Forging Shakes the World, Ant Colony Intelligence Leads the Way." The Department of Mechanical Engineering team earned third place with their "Electrostatic Minimum Quantity Lubrication (EMQL) System Development and Application" project, showcasing their potential in the field of smart manufacturing.

The "A Thousand Tons of Forging Shakes the World, Ant Colony Intelligence Leads the Way" project of the Department of Intelligent Automation Engineering team optimizes forging spray paths using AI algorithms and combines human-machine collaboration to enhance spray efficiency. The system is highly flexible, and compatible with various brands of robotic arms and machines, meeting the needs of small-batch customized production. As per data from a major forging manufacturer, this system has been successfully applied to the production of 100,000 forged pieces, significantly reducing changeover time and greatly improving product quality and productivity.

Students have transformed theoretical knowledge from the classroom into practical solutions, demonstrating their potential in the field of smart manufacturing, and highlighting the importance of industry-university collaboration in driving industrial upgrades. The team's project has been successfully validated in a forging plant, proving the high practicality of their technology. Moving forward, the team will continue to refine its technology and work closely with the industry to promote the development of smart manufacturing.



▲ The Department of Intelligent Automation Engineering Team Won First Place with their Project "A Thousand Tons of Forging Shakes the World, Ant Colony Intelligence Leads the Way"

## A. Reduction of Inequality in Education Opportunities

### (A) Additional/Guaranteed Recruitment Quota

|  |  |
|--|--|
| <b>Improving the Guaranteed Admission Quota</b>                                  | To enhance opportunities for economically disadvantaged students to gain college admissions, NCUT allocates a minimum of 15% of the admission quota specifically for economically disadvantaged students through various admission channels.   |
| <b>Increasing Enrollment Opportunities through Bonus Points</b>                  | NCUT is considering the implementation of bonus points for economically and educationally disadvantaged students based on their academic performance in challenging environments. This initiative aims to improve the enrollment opportunities for these students.   |
| <b>Striving to Expand Enrollment Quota</b>                                       | NCUT is actively pursuing a vision plan from the Ministry of Education to increase enrollment quotas. The goal is to expand enrollment quotas specifically for economically disadvantaged students from low-income and low-middle-income households. This initiative aims to provide more opportunities for economically disadvantaged students to enter university.   |
| <b>Enhancing Admission Opportunities for Economically Disadvantaged Students</b> | NCUT has established a Committee for Economically and Culturally Disadvantaged Students to develop appropriate weighted scoring review methods. In the 2023 academic year, the Vision Plan approved the admission of 35 students, with 24 students enrolling, achieving an enrollment rate of 82.75%.<br>The number of students admitted under the Vision Plan from the past three years is shown in Table 35. |

Table 35: Number of Students Enrolled in the Vision Plan

| Year | Number of enrollment departments | Enrollment quota | Actual registration quota | Registration rate |
|------|----------------------------------|------------------|---------------------------|-------------------|
| 2021 | 8                                | 30 人             | 27 人                      | 90.00%            |
| 2022 | 8                                | 33 人             | 29 人                      | 87.88%            |
| 2023 | 10                               | 29 人             | 24 人                      | 82.76%            |

## A. Open and Friendly Community Environment on Campus

### (A) Open Campus

Promoting interaction and communication between local communities and the university and narrowing the distance between the university and community residents by hosting diverse community activities, open campus events, and community resident sharing activities, as shown in Table 42.

Table 42: NCUT Gate Control Hours

| Days               | Main Gate    | East Gate (old gate) | West Gate (back gate) |
|--------------------|--------------|----------------------|-----------------------|
| Monday to Friday   | Open all day | 07:30~23:00          | 07:30~23:00           |
| Saturday to Sunday | Open all day | 08:00~22:00          | 08:00~22:00           |

### (B) Open Sports Facilities (Sports Venues)

In addition to hosting physical education courses and activities, NCUT offers free access to its outdoor sports facilities for the community. The school's sports facilities are currently open to the public at no cost. Facilities include sports fields with turf and track, basketball courts, volleyball courts, handball courts, tennis courts, and Jianxin Square.



▲ Basketball Court



▲ Volleyball Court



▲ Tennis Court



▲ Turf and Track



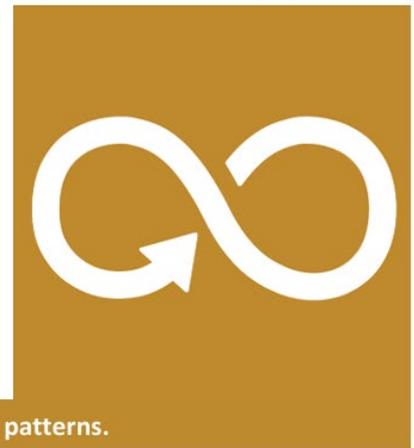
▲ Jianxin Square



▲ Handball Court

# SDG 12

## Responsible Consumption and Production



Ensure sustainable consumption and production patterns.

### A. Sustainable Public Procurement

#### (A) Green Procurement

In response to environmentally friendly green energy technology and emphasizing the importance of green procurement, NCUT has formulated the National Chin-Yi University of Technology Green Procurement Operation Management Points to prioritize purchasing energy-saving and water-saving environmentally friendly labeled products. Therefore, in the 15 years from 2009 to 2023, NCUT achieved a green procurement ratio of over 95%, earning recognition as an outstanding school by the Ministry of Education. Statistics are shown in Table 47.

Table 47: Green Procurement Statistics

| Year | Trees saved (units) | CO <sub>2</sub> emissions reduced (tons) |
|------|---------------------|--|
| 2021 | 5,329.83            | 21.44                                    |
| 2022 | 3,756.74            | 16.37                                    |
| 2023 | 5,378.57            | 21.9                                     |

#### (B) Procurement from Sheltered Workshops

NCUT has implemented the Regulations for the Preferential Procurement of Products and Services Produced by Physical and Mental Disability Welfare Organizations or Charitable Workshops, and adheres to the principles of supporting disadvantaged communities and caring for physically and mentally disabled individuals. NCUT prioritizes physical and mental disability welfare organizations and charitable workshops when awarding bids in priority procurement projects to action this support. In 2022 and 2023, the number of products and services preferentially purchased by NCUT from physical and mental disability welfare organizations and charitable workshops increased year by year, as shown in Table 48.

Table 48: Statistics on Procurement from Charitable Workshops

| Year | Amount (NT\$) |
|------|---------------|
| 2021 | 1,398,750     |
| 2022 | 1,919,224     |
| 2023 | 2,577,868     |

# SDG 13

## Climate Action



Take urgent action to combat climate change and its impacts.

### B. ESG Sustainable Development Center

#### (A) One-Stop Service

The ESG Sustainable Development Center assists enterprises in setting net-zero carbon goals, optimizing energy management, transitioning to a circular economy, and developing sustainable talent. By integrating interdisciplinary resources from internal and external professional teams and industry experts, the center fosters international net-zero carbon talent and supports corporate sustainable development. Services include carbon inventory, carbon reduction, international certification for carbon trading, and writing sustainability reports, offering a comprehensive one-stop service in ESG sustainable development. Statistics from the past three years are shown in Table 51.

Table 51: Statistics from the ESG Sustainable Development Center

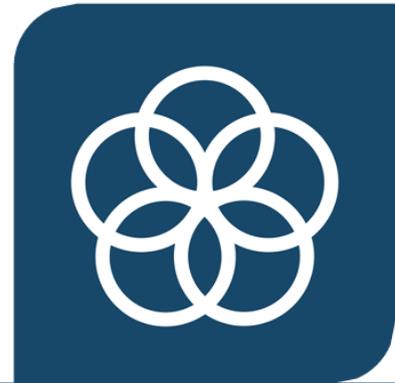
| Year | Carbon inventory performance | Energy inventory performance | Carbon inventory diagnosis |                         | Organizational inventory |
|------|------------------------------|------------------------------|----------------------------|-------------------------|--------------------------|
|      |                              |                              | Government 16+4 Project    | Government 24+6 Project | 2+17.5 Project           |
| 2022 | 2                            | 13                           | 0                          | 0                       | 0                        |
| 2023 | 66                           | 17                           | 48                         | 1                       | 4                        |
| 2024 | 50                           | 2                            | 41                         | 1                       | 0                        |



▲ ESG Sustainable Development Center Site Visits

# SDG 17

## Partnership for the Goals



Strengthen the means of implementation and revitalize the global partnership for sustainable development.

### A. Global Partners

#### (A) World's Top 2% Scientists

Several of our esteemed faculty members have been listed among the World's Top 2% of Scientists and on the lifetime scientific influence rankings, showcasing the outstanding contributions and international recognition of NCUT's research in academia.

**賀** 史丹佛大學-全球前2%頂尖科學家榜單  
WORLD'S TOP 2% SCIENTISTS

**2024全球前2%頂尖科學家**

電機系 趙貴祥教授、工管系 陳坤盛教授、景觀系 韓可宗教授  
工管系 黃美玲教授、資工系 林正堅教授、電機系 宋文財教授

**賀** 史丹佛大學-全球前2%頂尖科學家榜單  
WORLD'S TOP 2% SCIENTISTS

**終身科學影響力排行榜(1960-2023)本校入列教師:**

資工系 林正堅教授、電子系 顏錦柱教授、電機系 王孟輝教授  
工管系 陳坤盛教授、電機系 趙貴祥教授、電子系 林熊徵教授  
電機系 宋文財教授



The sustainability report of NCUT

The 2024 sustainability report of NCUT available on this link: [永續報告書\(中文版\) - 國立勤益科技大學 | 永續與校務研發中心](#)