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[SDGs 17] Partnership for the Goals 全球夥伴

[17.3.13] Please indicate if your university publishes progress against SDG13?

National Chin-Yi University of Technology (NCUT) recognizes the urgent global challenge of climate change and integrates climate action into its operations, education, research, and community service. In alignment with SDG 13: Climate Action, NCUT has launched initiatives in greenhouse gas reduction, renewable energy, afforestation, sustainable infrastructure, and climate education.

1. Climate Change Education and Cooperation

- **Climate Change & USR Forum:** NCUT co-organized the Forum on Climate Change and University Social Responsibility with **11 universities in Central Taiwan**. The event brought together local government, academia, and industry to promote “Climate Change and Education” initiatives.
- **NCUT scholars shared expertise on:**
 - The role of information technology in carbon reduction.
 - Food safety and its link to net-zero.
 - Sustainable talent cultivation in climate adaptation.
- **Outcome:** A consensus was reached among participating universities to strengthen interdisciplinary cooperation and initiate joint projects on climate change education and sustainable practices.

2. National Collaboration – Green-Collar Talent Development Program

- NCUT plays a key role in the **New Taipei City Green-Collar Talent Development Program (2024–2030)**, Taiwan’s first city-wide green talent plan.
- The university provides teacher training, expert lectures, and course planning to help high schools and vocational schools integrate sustainability, climate literacy, and green technology concepts into their curricula.
- This program builds Taiwan’s national green workforce pipeline, preparing future generations with sustainability competencies.

3. Youth Climate Education – Summer and Environmental Camps

- NCUT organizes **climate-focused summer camps** for youth across Taiwan.



- Topics include renewable energy, green buildings, carbon footprint analysis, environmental policy, and climate adaptation.
- By reaching students from diverse regions, NCUT's camps **extend climate education to the national level**, strengthening awareness and action among the next generation.

4. International Conferences & Knowledge Exchange

- NCUT hosts major academic events such as the **GTEA Symposium on Green Technology and Engineering Applications**, which attracts scholars, policymakers, and industry experts from Taiwan and Southeast Asia.
- These conferences serve as platforms for:
 - **Technical training** on low-carbon technologies.
 - **Policy dialogue** on regional climate adaptation.
 - **Joint research opportunities** with international collaborators.

5. Regional and International Partnerships

- NCUT partners with universities in **Thailand and the Philippines** to promote climate education, carbon auditing, and energy conservation.
- Support includes joint curriculum development, knowledge-sharing workshops, and environmental monitoring system design.
- These collaborations foster sustainable campus development and transfer best practices across Asia.

6. Arbor Day “Earth Restoration Action”

- Organized annually in collaboration with the Taiwan Energy and Environmental Development Association.
- In 2024, 255 seedlings (gardenia, jade leaf, azalea, poinciana, etc.) were donated and planted at five schools and kindergartens in central Taiwan.
- Participants: faculty, students, community members, and parents.
- Educational impact: Raised awareness of afforestation benefits for cooling, biodiversity, and urban climate resilience.
- Innovation highlight: Demonstration of NCUT's TEAX Total External Air Natural Energy Conversion System, which purifies air, reduces CO₂, and has 100+ patents globally.

7. Gaia Day Tree Planting Innovation Awards

- On April 22 (“Gaia Day”), NCUT partnered with the Taiwan Energy and Environmental Development Association and the Executive Yuan’s Central Office.



- Awards recognized innovative technologies in tree planting and green industries, including biotechnology, ICT, optoelectronics, and epidemic-prevention medical tech.
- Purpose: Encourage SMEs and startups to invest in green innovation and promote industrial transformation toward sustainability.

8. Greenhouse Gas Reduction and Energy Management

- **Commitment:** NCUT has pledged to reduce campus GHG emissions by 1% annually through systematic management.
- **Inventory and Verification:** Since 2017, NCUT has participated in MOE's campus greenhouse gas inventory program, contributing data to Taiwan's national emissions database.
- **Digital Metering:** Smart electric meters installed to audit energy use and prevent exceeding contracted load with Taipower.
- **Energy Management Committee:** Oversees conservation initiatives, conducts inspections, and enforces corrective actions across departments.

9. Sustainable Infrastructure and Innovation

- **Energy Efficiency Measures:**
 - Centralized monitoring of air-conditioning load when demand nears capacity.
 - Expansion of renewable energy systems (solar panels, hybrid energy innovations).
- **Integration into Education:** Climate-related topics are embedded in environmental education, engineering courses, and student service-learning, fostering a culture of sustainability.

10. Climate Action through Campus Demonstration Projects

NCUT operates its campus as a living laboratory for climate action:

- **Smart Buildings** – equipped with automated lighting and cooling systems for energy efficiency.
- **Solar Photovoltaic Panels** – installed on multiple campus rooftops, generating renewable energy.
- **Rainwater Recycling & Sewage Reuse** – NCUT's sewage treatment plant achieves 40% water reuse, supplying irrigation and lake replenishment.
- **Energy and Resource Monitoring** – IoT-based systems provide real-time data to optimize usage and train students in sustainable engineering practices.

These demonstration projects provide hands-on training for students, faculty, and visiting professionals, showcasing practical climate solutions.

11. Key Achievements

- Hosted cross-university forums linking climate change, education, and social responsibility.
- Led tree planting campaigns for four consecutive years, involving schools, kindergartens, and communities.
- Showcased patented technologies for natural energy conversion, recognized as a model for COP28 global cooling action goals.
- Established a robust GHG reduction policy with quantifiable annual targets.
- Received national recognition for climate innovation and education leadership.
- Local impact: Led environmental workshops and teacher training to spread climate literacy.
- National leadership: Active in Taiwan's Green-Collar Talent Development Program (2024–2030).
- Youth empowerment: Organized climate summer camps nationwide.
- International recognition: Hosted regional green technology conferences and collaborated with Southeast Asian universities.
- Sustainable campus model: Demonstrated scalable climate solutions such as solar, water reuse, and smart buildings.

Through a balanced approach combining education, national programs, international partnerships, and campus innovation, NCUT has positioned itself as a regional leader in SDG 13: Climate Action. The university not only reduces its own carbon footprint but also empowers students, educators, communities, and partner institutions to take meaningful steps toward a low-carbon future.



▲ Dongyuan Elementary School, Wuri District: Planted 60 saplings



2024 NCUT Campus Sustainability Report

Message from the President



About NCUT

Sustainability Highlights of the Year

SDG 13

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



▲ NCUT Participated in the New Taipei Green-Collar Talent Development Program



(B) Teacher Training

NCUT is dedicated to global environmental protection and climate action, responding to sustainable development by assisting SMEs in conducting carbon inventories and carbon optimization services. We are training our faculty to become instructors in product carbon footprint verification and greenhouse gas inventory. By developing a team of professional verifiers, we ensure efficient and accurate inventory work, fostering a new generation of net-zero carbon reduction talent.

In the future, NCUT will continue its commitment to ESG, offering comprehensive services ranging from carbon inventory, and carbon optimization, to international certification and carbon trading. We aim to develop high-quality talent with interdisciplinary knowledge and practical skills. Our short-term goals are to help SMEs complete carbon inventories and optimizations while extensively training ESG professionals. In the medium term, we plan to establish more specialized laboratories for carbon inventory and optimization, offer interdisciplinary ESG courses, and attract more students to this field.



▲ Carbon Footprint Lead Verifier Training



▲ Greenhouse Gas Inventory Standard Lead Verifier Training

F. Industrial Park Cross-Regional Low-Carbon Transformation Integration Promotion Plan

NCUT has actively participated in the Academic Assistance Industrial Park Project Counseling Program initiated by the Industrial Development Administration of the Ministry of Economic Affairs, specifically offering guidance to Chuansing Industrial Park in 2022. NCUT has also introduced a training course on greenhouse gas emission inventory, aiming to develop talent in the field of climate change. As part of the annual independent inventory process, adjustments or plans for energy-saving and carbon reduction have been implemented.

In 2023, NCUT was involved in the Industrial Park Cross-Regional Low-Carbon Transformation Integration Promotion Plan, focusing on key industries, particularly metal and machinery equipment manufacturing. A total of 12 manufacturers participated in the initiative to jointly advance low-carbon manufacturing processes and the application of green technologies.

In 2024, efforts to drive value-added innovation and sustainable development in industries will continue, focusing on the Chuansing Industrial Park. Key industries include metal products, machinery, textiles, food, and automotive components. The main areas of guidance include digital transformation, low-carbon processes, smart factories, innovative R&D, talent training, and international market expansion, all aimed at promoting technological innovation and industrial upgrades.



▲ Chin Hung Machinery Co., Ltd. Carbon Inventory Guidance



▲ Swancor High Polymer Co., Ltd. Carbon Inventory Guidance



▲ Hwang Kang Machinery Co., Ltd. Carbon Inventory Guidance



▲ Cheng Huan Industry Ltd. Carbon Inventory Guidance



▲ Boulder Industry Equipment International Co., Ltd. Carbon Inventory Guidance