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

[17.2.1] Does your university as a body have direct involvement in, or input into, national government SDG policy development - including identifying problems and challenges, developing policies and strategies, modelling likely futures with and without interventions, monitoring and reporting on interventions, and enabling adaptive management?

Yes, National Chin-Yi University of Technology (NCUT) has demonstrated direct involvement in and contribution to national SDG policy development through a combination of academic, technological, and policy-aligned initiatives. Here is a structured explanation of how NCUT engages with SDG-related national strategies:

1. Identifying Problems and Challenges

NCUT conducts interdisciplinary research addressing sustainability issues such as:

- **Carbon neutrality, energy efficiency, water conservation, and waste reduction** on campus, which reflect broader environmental challenges in Taiwan.
- Participation in industrial-academic collaborations that address real-world challenges, such as renewable energy development, green manufacturing, and circular economy models.

These efforts generate data and insights that inform government agencies and industry stakeholders.

2. Developing Policies and Strategies

NCUT contributes to national policy formation by:

- Collaborating with **ministries such as the Ministry of Science and Technology (MOST), Ministry of Education, and Environmental Protection Administration (EPA)** through funded research projects.
- Faculty and research centers at NCUT often serve as **consultants or committee members** for government SDG-related task forces, particularly in the areas of:
    - Sustainable industry transformation
    - Green energy
    - Climate adaptation strategies

3. Modelling Likely Futures (With/Without Interventions)

- NCUT applies **ICT tools, GIS-based campus planning, and data-driven modelling** to simulate outcomes of sustainable interventions.
- Research projects often include **scenario planning** and simulations that are shared with government partners to shape national or regional policy directions, especially in energy use, transportation, and smart infrastructure.

4. Monitoring and Reporting on Interventions

- NCUT actively monitors the impact of campus-wide sustainability actions (e.g., reduction of energy and water usage, green building performance).
- The university **reports outcomes through national platforms**, joint reports with ministries, and submissions to initiatives like **UI Green Metric and THE Impact Rankings**, which align with national and UN SDG monitoring frameworks.

5. Enabling Adaptive Management

- NCUT's sustainability office and research centers apply **adaptive management principles**, such as:
    - Continuous feedback loops through campus data (e.g., digital water meters, energy dashboards)
    - Modifying programs and practices based on performance reviews and environmental data
- These practices are **documented and shared with public agencies**, contributing to broader implementation models and adaptive strategies at the regional or national level.

NCUT serves not only as an educational and research institution but also as a strategic partner to the Taiwanese government in advancing the SDGs. Through data-driven planning, policy consultation, and applied sustainability research, NCUT plays a direct and meaningful role in shaping and supporting national SDG policy development and implementation.

國立勤益科技大學
NCUT

17 PARTNERSHIPS FOR THE GOALS
4 QUALITY EDUCATION
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

GREEN INNOVATION LEADING THE FUTURE — NCUT HOSTS "2025 GTEA SYMPOSIUM ON GREEN TECHNOLOGY AND ENGINEERING APPLICATIONS"

3rd Conference on Pandemic Prevention Air Conditioning, Water Pollution Treatment, and Energy Saving Engineering

NCUT Teams Up with Siemens and Chien-Chiang Technology to Boost Smart Manufacturing Talent

Sustainable Energy Competition: Our University Wins Gold in the Tertiary Short Film Category

Sustainability Research activities

Project List (Translated and Converted to USD)

Project Code	Project Title (English)	Amount (TWD)	Amount (USD)
NCUT25TER001	Testing and verification analysis of HVAC system for the NIH Center for Geriatric and Health Welfare	1,250,000	38,750
NCUT25TER002	HVAC system testing, balancing and adjustment for the new BOT hospital project at China Medical University	3,400,000	105,400
NCUT25TER018	HVAC system testing and analysis for Mitsui LaLaport Kaohsiung project	1,700,000	52,700
NCUT25TCC004	Research and development of proprietary interface technology for smart equipment application platform	1,200,000	37,200
NCUT25TMI006	Defense Advanced Technology Project - Subproject 3: Development of smart assistive devices and AI-optimized training programs for military physical and combat skill training	1,469,200	45,545.20
NCUT25TER051	HVAC system testing and performance verification for the new Zhumin Hospital project	3,600,000	111,600
NCUT25TER054	HVAC system testing, adjustment, and balancing for MediaTek Tongluo campus Phase I factory	1,500,000	46,500
NCUT25TER061	Performance testing and analysis of chillers and HVAC systems for the new medical building at Taichung Armed Forces General Hospital	2,000,000	62,000

NCUT25TER067	HVAC system testing, balancing, and performance verification for MSI Taoyuan Guishan factory	2,400,000	74,400
NCUT25TER070	HVAC system testing, adjustment, and balancing for Taichung Green Museum project	1,200,000	37,200
NSTC 114-2218-E-167-001	Development of intelligent high-speed grinding technology for compound semiconductor chip materials (3/4)	5,900,000	182,900
NSTC 114-2622-E-167-008	AI modules and energy-saving detection technology development for HVAC systems (1/3)	1,503,000	46,593
NSTC 113-2221-E-167-010-MY2	Flame-retardant polyurethane composites made from spent coffee grounds for thermal runaway prevention in energy storage systems (2/2)	1,320,000	40,920
NSTC 114-2221-E-167-003-MY2	Development of global MPPT system for new high-performance PV module arrays (1/2)	1,415,000	43,865
NSTC 114-2221-E-167-039	Modular multifunctional exosome collection system	1,342,000	41,602
NSTC 114-2221-E-167-001-MY3	Design and synthesis of new linear, block, and 3D-crosslinked electroactive polymers integrated with MOFs and green-synthesized magnetic graphene for environmental catalysis and sustainability (1/3)	1,500,000	46,500
NSTC 114-2221-E-167-020-MY3	Design and development of integrated regenerative PEM fuel cell stack and energy storage system (1/3)	1,386,000	42,966
NSTC 114-2221-E-167-027-MY2	Immersed dual-phase liquid cooling lithium battery with thermoelectric cooling integration (1/2)	1,425,000	44,175
NSTC 114-2221-E-167-028-MY3	Study on the regeneration of internal cooling solution dehumidification systems using tri-fluid flat-tube heat exchangers with ionic liquids (1/3)	1,318,000	40,858
NSTC 113-2221-E-167-002-MY3	Photocatalytic application of 2D covalent organic frameworks in energy and environment (2/3)	1,400,000	43,400

To support environmental sustainability and drive innovative solutions for climate action, NCUT has consistently invested substantial research funding into sustainability-related projects. These projects span various areas such as HVAC system efficiency, renewable energy, smart equipment, advanced materials, energy-saving technologies, and green engineering solutions.

The university's dedicated sustainability research fund for the past three years is summarized below:

Year	Total Sustainability Research Funds (USD)
2022	15,679,707
2023	15,470,437
2024	15,737,791
3-Year Average	**15,629,323**

This funding has enabled the execution of numerous high-impact sustainability projects, such as:

- AI-powered HVAC energy-saving modules
- Renewable energy integration systems
- Low-carbon material development using waste resources
- Smart assistive devices with energy-efficient frameworks
- Modular green hydrogen and PEM fuel cell technologies

These initiatives demonstrate NCUT's commitment to integrating sustainable development goals (SDGs) into its research priorities. Through active collaboration with government bodies and industry partners, NCUT continues to lead in producing green technological innovations with real-world impact.