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

[7.4.4] Does your university as a body inform and support government in clean energy and energy-efficient technology policy development?

Yes —NCUT plays an active advisory and technical role in supporting government clean energy and energy-efficiency policy development, both nationally and regionally.

NCUT's Role in Supporting Government Clean Energy and Energy-Efficiency Policy

1. National Policy Alignment

- NCUT's Carbon Neutrality Center and ESG Sustainable Development Center provide expertise in carbon inventory, emissions reduction, and carbon trading, directly informing government strategies on carbon border adjustment mechanisms and net-zero targets.
- NCUT's adoption of ISO 50001 (Energy Management), ISO 14064-1 (GHG Inventory), and ISO 14067 (Carbon Footprint) serves as a national model for educational institutions and industries, aligning with the government's 2050 Net-Zero Emission Transformation Plan.

2. Research and Technical Consultation

- NCUT conducts government-funded projects such as the *Industrial Park Interregional Low-Carbon Transformation Plan* and the *Digital Manufacturing Management Carbon Inventory Application Plan*, which directly support the Ministry of Economic Affairs in promoting low-carbon industrial upgrading
- Through the Institute of Global Energy & Environmental Technology Science, NCUT develops technologies like the Water Energy Conversion System, offering new models for sustainable energy storage and efficiency that inform national energy policy.

3. Hosting Policy-Oriented Conferences

- NCUT regularly organizes national and international forums, including the:
 - **2024 Green Technology Engineering and Application Seminar** – discussing sustainable industrial applications and eco-friendly manufacturing.
 - **2025 GTEA Symposium on Green Technology** – focusing on hydrogen energy, carbon cycle technologies, and energy-efficient smart manufacturing.



- **National Hydrogen Energy and Fuel Cell Symposium (2024)** – featuring policy-oriented dialogue on hydrogen’s role in Taiwan’s net-zero strategy.

4. Government Partnerships and Talent Development

- NCUT co-leads the New Taipei Green Collar Talent Cultivation Program (2024–2030), in partnership with the New Taipei City Government, Environmental Protection Bureau, and Economic Development Bureau. This program develops green literacy, science, and skills, informing both local education policy and workforce strategies.

5. Energy and Environmental Technology Center

As NCUT’s first-level technical service center, this hub provides practical services and acts as a bridge between academia, industry, and government.

- **Forward-Looking Strategies:** Develops visionary yet practical energy and environmental plans tailored to global trends and local contexts.
- **Smart Industrial Management:** Promotes smart energy management systems to optimize industrial energy use and reduce environmental impacts.
- **Talent Training:** Provides training for professionals in industrial energy management and sustainability.
- **Testing & Certification:** Advocates for dual certification systems, ensuring industry meets both energy efficiency and environmental standards.

Through these functions, the center supports government agencies by providing research-based recommendations, technical expertise, and certified data that inform national and local policy directions.

6. ESG Sustainability Center

Established in 2023, this center addresses carbon management needs in Central Taiwan’s precision machinery industry cluster—a key driver of Taiwan’s exports and sustainability transition.

- **Education & Training:** Delivers seminars, certification courses, and policy workshops to align companies with national carbon reduction policies.
- **Technical Support:** Assists in adopting carbon reduction technologies, renewable energy integration, and energy-efficient processes.
- **Policy Partnership:** Helps SMEs comply with **international carbon reduction standards**, supporting Taiwan’s obligations under global agreements.



- **Collaboration:** Works with government agencies to align industrial sustainability with policy, while building partnerships with international organizations.

Achievements include guiding numerous SMEs in carbon inventory and management plans, contributing to measurable emission reductions in the Taichung–Changhua–Nantou industrial corridor.

7. Policy Dialogue and Advocacy

- NCUT hosts policy-oriented events such as the *ESG Speech: The Legal Role and Urgency of Carbon Rights Trading & Innovation Technology Matchmaking Conference*.
- These forums bring together government officials, industry leaders, and academics to shape policies on carbon trading, energy transition, and sustainable innovation.

NCUT's Contribution to Energy Efficiency and Policy Development: ERAC2024

On April 26, 2024, NCUT hosted the Energy and Refrigeration and Air Conditioning Academic and Technical Symposium (ERAC2024) alongside the 6th Green Energy Innovation and Creative Practice Competition.

International Collaboration and Policy Exchange

- The event attracted delegations from Japan (JSRAE) and South Korea (SAREK), highlighting NCUT's role in facilitating regional collaboration on energy-efficient technology and green buildings.
- A Memorandum of Understanding (MOU) was signed between Taiwan's Refrigeration and Air-Conditioning Society and SAREK, deepening international cooperation and promoting cross-border technical exchange.

Policy-Relevant Themes

- **Green Buildings for Net-Zero 2050:** South Korean experts emphasized the role of zero-energy buildings, policy incentives, and market transformation in achieving carbon neutrality.
- **Heat Pump and Digital Twin Technologies:** Japanese experts presented advances in thermal management systems for carbon-neutral campuses, sustainable agriculture, and cold-chain innovation.
- **Carbon-Neutral Strategies:** Discussions centered on setting standards, providing incentives, and investing in high-efficiency technologies to meet government net-zero commitments.

NCUT's Role and Future Outlook

- By hosting ERAC2024, NCUT reinforced its role as a policy-shaping academic partner, providing both technical expertise and actionable recommendations for governments and industries on clean energy and efficiency.
- Looking ahead, NCUT will host the Asian Refrigeration and Air Conditioning Academic Conference (ACRA 2026), Asia's largest industry event, which will further strengthen its role in shaping policy and innovation for energy-efficient technologies.

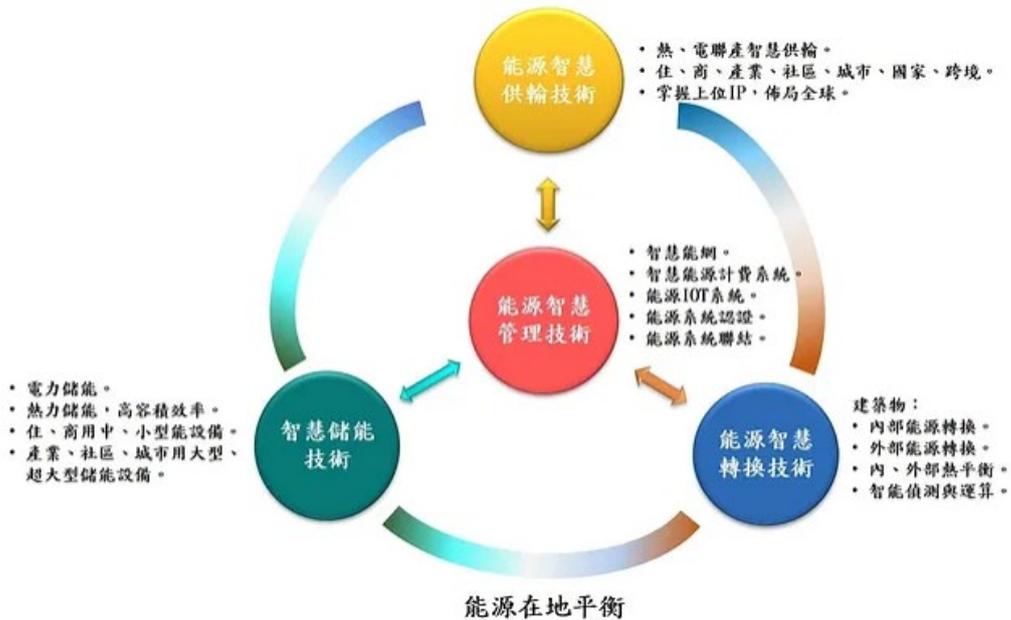
Contribution to SDGs

- **SDG 7 – Affordable and Clean Energy:** Policy support for renewable energy and efficiency technologies.
- **SDG 9 – Industry, Innovation and Infrastructure:** Driving industrial upgrades through smart management and certification.
- **SDG 11 – Sustainable Cities and Communities:** Regional planning for sustainable development.
- **SDG 12 – Responsible Consumption and Production:** Carbon management services for SMEs.
- **SDG 13 – Climate Action:** Supporting Taiwan's net-zero strategy and policy frameworks.
- **SDG 17 – Partnerships for the Goals:** Bridging academia, industry, and government in policy development.



In essence, the **Energy and Environmental Technology Center** at NCUT serves as a bridge between academia, industry, and international partners, working towards a balanced and

sustainable approach to energy and environmental challenges while fostering innovation and expertise in these critical fields.



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