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## [SDGs 17] Partnership for the Goals 全球夥伴

**[17.2.3] Does your university as a body participate in international collaboration on gathering or measuring data for the SDGs?**

### **Contributing to the sustainable transformation of Taiwanese enterprises, NCUT's Sustainable Development Center is gradually expanding**

The Sustainable Development Center of National Chin-Yi University of Technology (NCUT) was established to cultivate more ESG industry talents and provide corporate ESG upgrade services. Currently, it integrates with the French Standards Association Afnor Bell International Inspection and Certification Group, along with various resources from the ESG Sustainable Development Association. Coupled with the support and cooperation of teachers and students on campus, this integration enables the overall service volume of the center to continue improving. In the rapid development process of the center, the most critical core figure is none other than CEO Dr. Chen Humu.

Cultivating sustainable talents who can truly implement carbon inventory is crucial in today's business landscape. CEO Chen, well-versed in areas such as environment, society, and corporate governance represented by ESG, found common ground with President Chen, Wen-Yuan, who aims to contribute to the sustainable transformation of industrial clusters in central China. Following the establishment of the Sustainable Development Center, corporate cases began accumulating rapidly, and teams of teachers and students with carbon inventory capabilities multiplied. Both are optimistic about future development and believe that NCUT will be a vital source of sustainable talents in this wave of ESG sustainability—a cradle of cultivation.

"Currently, the market is inundated with various ESG courses, but how many can genuinely guide students to draft reports compliant with sustainable disclosure standards?" CEO Chen emphasized the pressing concerns of companies regarding carbon inventory, optimization, and trading, along with issues such as carbon tax and fee collection. Given current international trends, sustainability is no longer just an environmental slogan like "turning off lights to save polar bears" or "**aiming to control the earth's temperature within  $\pm 2$  degrees Celsius**" from earlier times. It is now a core goal closely tied to actual operations. As demand becomes more urgent and talent scarce, it's inevitable for people to seek emergency solutions.

**NCUT's Sustainable Development Center boasts a practical and rapid carbon inventory system, as well as multiple teams of teachers and students with professional certifications.** In the past period, it has guided 59 companies in completing carbon inventories and 20 companies in completing energy



inventories. Remarkably, all these cases have received central subsidies, making them the best examples of painless and sustainable transformation.

Therefore, CEO Chen also suggests that companies or organizations troubled by "carbon anxiety" seek assistance from educational institutions like NCUT. This approach can help them avoid common mistakes, provide training opportunities for students, and foster the creation of more talents needed across industries.

**Working together towards the goal of carbon neutrality** requires talents capable of truly implementing carbon inventory, a skill set that's in high demand. Companies would undoubtedly compete for individuals who can draft ESG sustainability reports meeting international standards. CEO Chen outlined the two stages of sustainable transformation in various industries. The first involves conducting a carbon footprint inventory to understand the company's total carbon emissions, followed by planned carbon reduction initiatives, starting with measures like replacing traditional lighting with LED alternatives. Basic practices such as upgrading to energy-efficient appliances and reducing paper and plastic usage are gradually implemented, step by step towards the ultimate goal of carbon neutrality.

In this process, talents trained by NCUT can all contribute, alongside many other schools and non-governmental organizations investing in sustainable talent cultivation, such as NCUT. Therefore, CEO Chen also called on business owners to "put aside anxiety and believe in professionalism." By choosing the right sustainable partner, companies can naturally make their transformation journey smoother and faster.



## **NCUT actively engages in international cooperation to achieve sustainable development goals**

NCUT is situated in an emerging satellite city, strategically located near Taiwan's precision machinery industry cluster, offering an ideal environment for fostering industry-university collaboration. With a

robust structure and conducive conditions for such partnerships, NCUT has long been committed to the mission of cultivating high-quality professional and technical talents required by industries at all levels.

In response to the wave of globalization, the school is dedicated to nurturing students with the capability to thrive internationally and attracting international professional talents. This commitment reflects the direction in which the institution is evolving.

Adhering to the school motto of "Diligence, Perseverance, Honesty, and Simplicity," NCUT upholds values where diligence is valued over idleness, and integrity and simplicity unite the efforts of all faculty and students. Guided by the vision of becoming an "International Quality Industrial Science and Technology University," the school confronts challenges with innovative strategies, driving sustainable operation and development forward.

### **NCUT Participation in Taiwan-Germany Alliance (TAI-HAW)**

The outstanding teachers and students of NCUT participated in the TAItech-HAWtech study visit to Germany, where they visited three universities: Kaslu University of Applied Sciences (HKA), Aachen University of Applied Sciences (FH AACHEN), and Dresden University of Applied Sciences (HTWD). Each university has a wide range of research fields, covering machinery, industry, clean energy, automation, artificial intelligence, and other areas. In addition to completing the international cooperation plan (TAItech-HAWtech plan), this visit also involved learning about the research projects at these universities and proposing the possibility of cooperation. (Refer to Figure 128 for details.)



. NCUT teachers and students participate in TAItech-HAWtech study visit itinerary

### **Speeches by experts and scholars on carbon-related topics**

NCUT places a strong emphasis on carbon-related topics, including but not limited to bismuth telluride-based nanostructures, green composite materials, obsolete lithium battery activation technology, circular economy, and sustainable energy. To enrich understanding and knowledge in these areas, the university has organized events featuring speakers from esteemed institutions such as

the University of New South Wales, the University of Singapore, Dadong Resin Chemistry Co., Ltd., and Taiyang Rubber Factory Co., Ltd.

Throughout the 2020-2022 school years, a total of 14 special topics on carbon issues were conducted, aimed at enhancing participants' understanding of carbon-related issues and familiarizing them with the latest technology research and development in various materials. These initiatives reflect NCUT's dedication to advancing knowledge and innovation in the field of carbon-related topics, fostering collaboration with leading experts and organizations in the global scientific community.

### Carbon topics in 2020-2022

Year/ Semester	Topic	Speaker	Service units and titles
2021-1	Circular economy and reuse technology	Chao-Lang Kao	Department of Chemical and Materials Engineering, NCUT _Associate Professor
2021-1	Introduction and application of high-performance elastomer-thermoplastic polyurethane (TPU)	Hung-Jen Yen	R&D manager/ Great Eastern Resins Industrial Co. Ltd. _R&D Manager
2021-2	The distance between theory and practice in polymer material research and development	Chun-Wei Chen	SUN RUBBER CO., LTD. _Manager
2021-2	The development and application of foaming processing technology in the shoemaking industry	Yen-Wen LIN	Deputy leader of the shoe technology group _Footwear & Recreation Technology Research Institute
2022-1	Reinforcement learning in robotics	Chi-Ming Chou	National University of Singapore _Professor
2022-1	Development status of two-dimensional black phosphorus materials: synthesis, modification and application	Chun-Hua Chen	Department Of Materials Science And Engineering, NYCU _Professor
2022-1	Plasma technology and environmental sustainability	Hsiao-Chun Yang	Department of Fiber and Composite Materials, FCU _Assistant Professor
2022-2	Sustainable and high-value development and application of polymer materials	Yao-Kuei Hsiao	Plastics Industry Development Center _President
2022-2	The future and prospects of sustainable energy	Horn-Hwa Lu	Department of Mechanical Engineering, NCUT _Professor
2022-2	"What are SDGs? " Why do companies start to pay attention to ESG?	Yi-Ci Wang	College of General Education, NCUT _Assistant Professor



## A New Milestone in Carbon Reduction Industry-University Join hands with Net Zero National Chin-Yi University of Technology Bell Certification Group Bangtai Group Sign MOU

On April 10, 2023, a significant milestone was reached **in the field of carbon reduction** as the French Standards Association Group Bell International Inspection and Certification Group, Bangtai Group (8935), and the National Chin-Yi University of Technology (NCUT) signed a memorandum of **sustainable cooperation**. This collaboration is aimed at assisting enterprises in their transition towards achieving **net-zero emissions**.

Chen, Wen-yuan, the President of NCUT, highlighted the importance of the "2050 Net Zero Emissions Pathway Plan" initiated by the Ministry of Economic Affairs in 2022. This plan focuses on transforming energy, industry, daily life, and society through technological research and development and the establishment of climate-related legal frameworks. Located in the central Taiwan precision machinery industry hub, NCUT is committed to leveraging the collective expertise of industry, government, academia, and research to explore opportunities for industrial export in the context of the "net-zero transformation."

NCUT has taken several steps to facilitate this transformation, including the establishment of the Carbon Neutral Center and the **ESG Sustainable Development Center**. These centers provide comprehensive support services for enterprises, with a four-step approach that encompasses educational training, knowledge dissemination to supervisors and employees, planned emission reduction, and the gradual integration of AI and IoT technologies, leading to the adoption of "Artificial Intelligence Internet of Things (AIoT)" for achieving net-zero goals. The use of new materials and processes is the final step in this journey towards net-zero emissions.

Jiang, Youtai, General Manager of Bell International Inspection and Certification, emphasized the importance of knowledge sharing and experience inheritance through cooperation with NCUT. This collaboration aims to enable inspectors to quickly identify critical areas within industries. He stressed the need to instill awareness of carbon reduction and net zero in students through various courses and activities, as this knowledge will be essential for their future careers and entrepreneurial endeavors.

Chang, Qing-fang, Chairman of the ESG Sustainable Development Association, emphasized the importance of Taiwan aligning itself with **international carbon reduction trends**, especially in light of the government's 2050 net-zero carbon emissions target. This effort involves guidance and advocacy from the Financial Supervisory Commission and related entities. The concept of carbon reduction must permeate the entire industrial chain, from listed companies to the financial sector. Sustainability centers and certification entities play a crucial role in assisting companies in setting and achieving net-zero goals.



Shen, Mao-gen, Chairman of Bangtai Group, signed the industry-university cooperation memorandum with NCUT on behalf of the company. He underscored the global trend toward carbon reduction and the necessity for companies to plan ahead. Bangtai Group, known for its advanced technologies in areas such as biodegradable materials and industrial waste recycling, recognizes the significance of carbon reduction. By collaborating with NCUT for carbon inventory and certification, Bangtai Group aims to utilize third-party verification to assess internal adjustments. The company hopes to lead by example and become a benchmark enterprise, contributing to environmental conservation and ecological sustainability while enhancing product competitiveness.

**This collaboration represents a significant step towards achieving net-zero emissions, promoting sustainability, and fostering environmental responsibility in both the industrial and educational sectors.**

