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

[SDGs 7] Affordable and Clean Energy

[7.4.5] Does your university as a body provide assistance for start-ups that foster and support a low-carbon economy/technology?

Yes — NCUT actively provides assistance to start-ups that focus on low-carbon economy and technology, mainly through its Carbon Neutrality Center, ESG Sustainability Center, and strong industry–academia partnerships. These efforts aim to incubate innovation, support SMEs, and promote sustainable entrepreneurship.

NCUT's Assistance for Start-Ups Supporting the Low-Carbon Economy

1. **Carbon Neutrality Center (2022–)**
   - Provides carbon inventory services, carbon reduction consulting, and adaptation strategies for SMEs and start-ups.
   - Offers training in ISO 14064-1 (GHG Inventory) and ISO 14067 (Carbon Footprint), enabling new enterprises to align with international carbon management standards.
   - Supports participation in Taiwan's Carbon Border Adjustment Mechanism readiness, helping start-ups integrate into global green supply chains.

2. **ESG Sustainability Center (2023–)**
   - Acts as a one-stop service hub for sustainability-oriented start-ups in central Taiwan.
   - Provides education, certification courses, and workshops in ESG, carbon trading, and sustainability management.
   - Assists start-ups with innovation technology matchmaking and entrepreneurship counseling, bridging them with investors and government subsidy programs.

3. **Industry-Academia Startup Ecosystem**
   - NCUT co-hosts competitions and innovation showcases (e.g., the *Green Energy Innovation and Creative Practice Competition*) that encourage students and start-ups to develop low-carbon products and technologies.
   - Faculty-led research labs (e.g., renewable energy, AI-powered HVAC optimization, hydrogen fuel cell development) serve as incubators where start-ups can test and commercialize ideas.

- Through partnerships with enterprises and global organizations, NCUT facilitates technology transfer and start-up acceleration in clean energy and carbon reduction technologies.

4. Professional Technical Service Centers

NCUT has established a network of school-level service centers to provide technological support, R&D collaboration, and industrial consulting. These centers help enterprises address technical challenges while advancing sustainability goals:

- **Energy Saving, Emission Reduction, and Sustainable Environment Center** – delivering solutions for carbon reduction and energy conservation.
- **Carbon Neutral Center** – offering carbon inventory, carbon neutrality consulting, and low-carbon technology services.
- **Smart Machinery & Manufacturing Technology R&D Center** – bridging digital and clean technologies for Industry 4.0.
- **Precision Machinery Testing, Grinding, and Processing Centers** – providing specialized industrial services.
- **Industry Talent Cultivation & Cooperation Centers** – aligning academic training with current industry sustainability needs.

These centers allow NCUT to bridge the innovation gap for SMEs and start-ups, supporting their transition to low-carbon and clean energy practices.

5. Office of Institutional Research (IR)

Through data-driven decision-making, the IR Office supports NCUT's strategic planning and sustainable operations. Its work ensures that policies and initiatives (including those on carbon management, renewable energy adoption, and clean technologies) are evidence-based and aligned with institutional and national sustainability goals.

6. USR Promotion Office

Established in 2022, the USR Office strengthens the academia–industry–government–community nexus by:

- Addressing local sustainability challenges (e.g., energy, environment, economic development).
- Promoting local innovation and youth engagement to build regional low-carbon economies.
- Supporting population return policies by creating green jobs and opportunities.

7. Innovation and Entrepreneurship Support

- NCUT participates in the **Maker Team's Smart Taichung Innovation and Entrepreneurship Promotion Base**, integrating resources from schools, communities, and government to foster student-led innovation.
- Through the **University Innovation and Entrepreneurship Education Promotion Plan**, NCUT builds a culture of entrepreneurship on campus, offering courses, mentoring, and start-up competitions.
- NCUT's start-up team *InDestiny* (music social platform) was recognized as **Outstanding** in the Ministry of Education's 2023 University Entrepreneurship Practical Learning Platform, showing success in scaling innovative student start-ups.

8. International Exposure for Start-Ups

- NCUT selects outstanding patented works for global invention exhibitions, including:
    - Moscow International Salon of Inventions (Archimedes)
    - iENA Trade Fair (Nuremberg, Germany)
    - Seoul International Invention Fair (Korea)
    - EUROINVENT (Romania)
    - Taiwan Innotech Expo
- These opportunities help NCUT start-ups gain international recognition, partnerships, and investment opportunities in sustainability-oriented technologies.

9. R&D Achievements and Technology Transfer

- NCUT actively converts research into market-ready innovations:
    - Technology Transfers: 126 (2022), 162 (2023), 63 (Jan–Jul 2024).
    - Patents Approved: 92 (2022), 102 (2023), 45 (Jan–Jul 2024).
- The Guidelines for R&D Outcomes and Technology Transfer Management provide subsidies for patents, support faculty entrepreneurship, and strengthen industry-university collaborations.

10. Financial and Policy Support

- NCUT guides start-ups in applying for government subsidies and green innovation funds, ensuring alignment with Taiwan's 2050 Net-Zero Strategy.
- The ESG Innovation Technology Matchmaking Conferences provide networking platforms that link start-ups with policy stakeholders and venture capital, enabling commercialization of low-carbon solutions.

Contribution to SDGs

- **SDG 7 – Affordable and Clean Energy:** Start-ups supported in renewable energy and hydrogen technology.
- **SDG 9 – Industry, Innovation and Infrastructure:** Incubation of clean-tech enterprises.
- **SDG 11 – Sustainable Cities and Communities:** Encouraging eco-innovation for sustainable urban solutions.
- **SDG 12 – Responsible Consumption and Production:** Carbon inventory services for sustainable production chains.
- **SDG 13 – Climate Action:** Direct contributions to the low-carbon economy.
- **SDG 17 – Partnerships for the Goals:** Start-up–government–industry collaborations.

(D) Innovation and Entrepreneurship Competition

The Maker Team's Smart Taichung Innovation and Entrepreneurship Promotion Base integrates resources from schools in central Taiwan, external communities, and government units, emphasizing "maker" practices as the foundation, and innovation and entrepreneurship as the core principles. The initiative promotes five key tasks: transforming the practice base into an innovation and entrepreneurship hub, connecting with external community development bases, activating local industries to drive industrial innovation, fostering collaboration among schools at all levels to facilitate creative education, and supporting the development of campus innovation and entrepreneurship to train students as adept implementers of smart innovations. Teachers also adopt innovative and creative teaching methods and implement the entrepreneurial aspirations of both teachers and students.

(E) Establishment of a Start-up Team

To promote innovation and entrepreneurship education policy in higher education, the University Innovation and Entrepreneurship Education Promotion Plan has been implemented, which aims to shape a culture of innovation and entrepreneurship on campus, encouraging universities to offer courses in innovation and entrepreneurship to enhance knowledge and skills in professional fields and strengthen practical abilities in creativity, innovation, and entrepreneurship. Assisting start-up teams within universities is a key goal under this plan, implemented through competitions on the University Innovation and Entrepreneurship Practical Learning Platform. This approach ensures team operation supervision and the establishment of a start-up company database.

NCUT's "InDestiny" music social platform was recognized as "outstanding" in the second phase of the Ministry of Education's 2023 Annual University Innovation and Entrepreneurship Education Promotion Plan – University Entrepreneurship Practical Learning Platform.

▲InDestiny Music Social Platform by a Startup Company Team

(G) R&D Achievements and Technology Transfer

To encourage innovation, enhance research quality, and effectively manage and utilize the R&D outcomes of its units, faculty, staff, and students, NCUT has established the National Chin-Yi University Guidelines for R&D Outcomes and Technology Transfer Management. These guidelines provide subsidies for faculty patent applications and facilitate faculty technology transfer projects and industry-university collaboration projects. Technology transfer and patent achievements from the past three years are shown in Table 24 and Table 25.

Table 24: Technology Transfer Achievements From the Past Three Years

Year	Number
2022	126
2023	162
Jan-Jul 2024	63

Table 25: Patents From the Past Three Years

Year	Number of patents approved
2022	92
2023	102
Jan-Jul 2024	45

(H) Professional Certificates

To encourage students to obtain certifications, NCUT has established the Reward Points for Students to Obtain Certificates. Students who acquire certifications recognized in the List of Certifications by the central authority-in-charge of the relevant industry are eligible for rewards ranging from NT$750 to NT$5,000 based on the certification level, while core professional department certifications provide rewards of NT$500 to NT$1,000. Achievements in obtaining certificates from the past three years are shown in Table 26.

Table 26: Achievements in Obtaining Certificates From the Past Three Years

Academic year	Certification academic year	Number of professional certificates	Number of core certificates	Total reward amount
2021	2020-1	119	406	389,250
	2020-2	58	456	347,250
2022	2021-1	143	512	467,000
	2021-2	134	582	520,750
2023	2022-1	109	487	382,000
	2022-2	203	509	552,750

目 錄

一、極端氣候影響層面

一、ESG要求

環境
(Environmental)

企業應該在經營活動中考慮環境影響，包括減少碳排放、節約能源、減少廢棄物和汙染等。此外，企業應該推動可再生能源和可持續資源的使用，以及生態保育和生態系統保護。

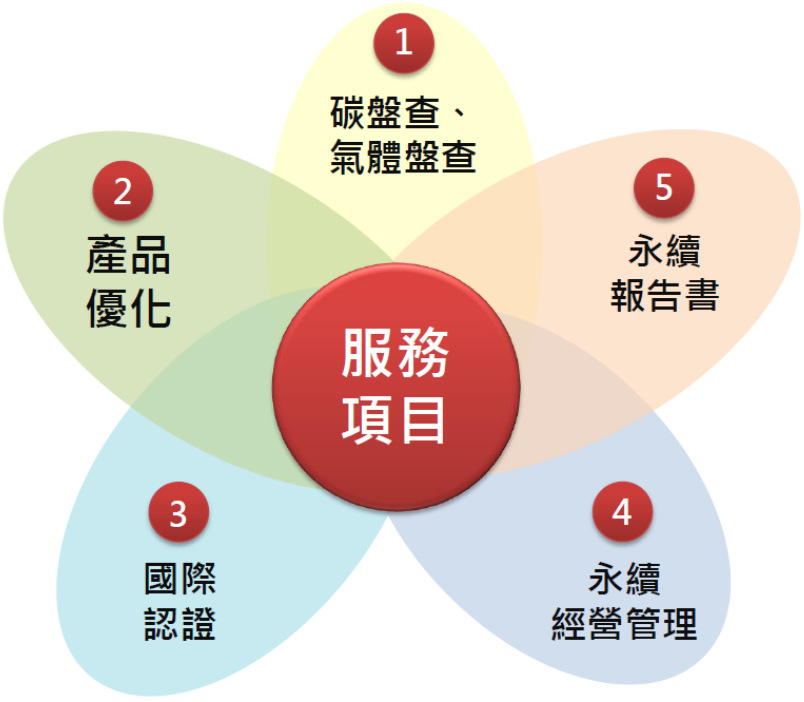
社會
(Social)

企業在社會方面的要求包括關愛員工福祉、尊重人權、促進多樣性和包容性等。企業應該確保公平的就業機會、安全和健康的工作環境，並積極參與社群發展和慈善事業。

公司治理
(Governance)

企業應該建立優秀的公司治理機制，確保透明度、責任和效能。這包括建立健全的董事會結構、公正的決策程式、有效的內部控制和風險管理，以及積極打擊貪汙和腐敗等。

二、勤益科大永續發展中心服務項目



勤益2023永續發展中心績效(1/2)

碳盤查績效

學校教師獲得——
- 經濟部補助
- 金屬中心補助
- 一般產學案碳盤查服務

共59家企業

能源盤查績效

學校教師獲得——
- 機械公會委託補助(9件)
- 一般產學案能源盤查

共20家企業

勤益2023永續發展中心績效(2/2)

碳盤查診斷 (政府補助案)

◆ 政府16+4專案(6家企業)
- 關友股份有限公司
- 宏洋精密工業股份有限公司
- 力興鍛壓實業股份有限公司
- 高碳特殊鋼鐵股份有限公司
- 壯佳果股份有限公司
- 馬光化學工業股份有限公司

◆ 政府24+6專案(1家企業)
- 江興鍛壓工業股份有限公司

組織盤查 / 17.5萬 (本校盤查報價)

◆ 2+17.5專案(4家企業)
- 金舟機械工業股份有限公司
- 宣鑫企業有限公司
- 四維冷氣興業有限公司
- 村盛企業有限公司

Carbon inventory and diagnosis of 50 companies	Organized inventory and diagnosed 4 companies

一、師資培訓-1A

碳盤查師資培訓

◆ 補助產品碳足跡盤查教師 35 位

課程名稱	ISO 14067：2018
上課日期	111年6月20-24日(4天)、7月28-30日(3天) 、8月22-27日(6天)
補助金額	148,900元
國際認證公司	ASR亞瑟國際驗證 【 American Systems Registrar 】
補助教師人數	9位

課程名稱	ISO 14067：2018 產品碳足跡主導查證員培訓課程
上課日期	112年7月22-24日(3天)
補助金額	508,300元
國際認證公司	法國標準協會集團AFNOR Group 貝爾國際檢驗認證與其他機構
補助教師人數	26位

Trained 35 carbon footprint examiners

一、師資培訓-1B

氣體盤查師資培訓

◆ 補助溫室氣體盤查教師 33 位

課程名稱	ISO 14064-1：2018
上課日期	111年7月21-23日(3天)
補助金額	30,000元
國際認證公司	ASR亞瑟國際驗證【American Systems Registrar】
補助教師人數	3位

課程名稱	ISO14064-1：2018 溫室氣體盤查主導查證員培訓課程
上課日期	112年6月27日、6月30日、 7月4日、7月5日
補助金額	705,350元
國際認證公司	法國標準協會集團AFNOR Group貝爾國際檢驗認證與其他機構
補助教師人數	30位

Trained 33 carbon footprint examiners

二、演講宣傳-2A(企業)

陳護木執行長碳中和演講與海報

12月29日勤益科大產學會演講

7月13日
針對非洲
四國演講

9月8日
明新科技
大學演講

二、演講宣傳-2B(針對盤查師實務演講)

相關演講花絮

2月7日碳盤查業務推展經驗談

2月10日實務碳盤查經驗分享

2月15日實務碳盤查經驗分享

3月13日碳排查軟體系統服務展示

Give speeches to companies

三、碳盤查-3B上市公司(保勝光學)

簽定碳盤查契約

2024年教師承接計畫
【輔導進行組織碳盤查中】

廠商	保勝光學股份有限公司(臺中潭子)
資本額	3億元
產業別	光學儀器製造業、金屬製品製造業
盤查師	國立勤益科技大學流通管理系 周聰佑教師

Assist newly listed companies to conduct carbon inventories

四、中小企業碳盤查衍伸問題

1 問題一：公司規模太小

產業鏈上游小公司無法做碳盤查，如：噴漆產業。

ANS 透過產學會共同處理碳盤查完整度問題。

2 問題二：每年維持困難

碳盤查後每年需上報處理優化結果，聘請專員成本高，中小企業公司負擔太大。

ANS 本校ESG永續發展中心代為處理，如：汽車靠行(出車成本低)。

3 問題三：除上市大型企業之外，其餘公司適合外包。

ANS
- 公司自行執行ESG成本太高，適合只配合執行ESG較為經濟。
- 大公司人員穩定，其餘公司容易人員異動，不適合自行培訓盤查。