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

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

[7.2.4] Does your university as a body have an energy efficiency plan in place to reduce overall energy consumption?

Yes — NCUT has an institutional energy efficiency plan to reduce overall energy consumption, guided by international and national standards.

NCUT's Energy Efficiency Plan to Reduce Overall Energy Consumption

1. Policy and Standards

- NCUT achieved ISO 50001 certification in 2021, establishing a structured Energy Management System (EnMS) that drives continuous improvement through the Plan–Do–Check–Act (PDCA) cycle.
- The system uses Energy Baselines (EnB) and Energy Performance Indicators (EnPI) to measure progress, optimize electricity use, and reduce Scope 2 emissions.
- This aligns with Taiwan's 2050 Net-Zero Emission Transformation Strategy Plan, which encourages adoption of ISO 50001 across industries.

2. Campus-Wide Energy Management

- A real-time campus-wide energy monitoring system is being implemented, scheduled for completion by December, to provide live data and enable direct energy-saving management.
- IoT-based smart controls, automated lighting, and climate systems optimize building energy use.

3. Energy-Saving Measures

- LED lighting (97.9% coverage), high-efficiency HVAC (98.8%), and automated water dispensers with scheduled shut-offs cut unnecessary consumption.
- Public campaigns reinforce awareness:
    - Large-scale energy-saving banners on Guoxiu Building and Ching-yong Hall.
    - LED marquees displaying the "Ten Major Energy-Saving Measures."
    - Reminder stickers placed near light switches across campus.

4. Renewable Energy Integration

- Rooftop solar PV and solar-thermal systems supply renewable energy to multiple buildings.
- Generation data is published online, reinforcing transparency.

5. Awareness and Engagement

- Energy-saving campaigns encourage students and staff to reduce unnecessary consumption.
- Training sessions for facility managers support effective implementation of the plan.

6. Global Perspective

- According to the IEA, efficiency improvements can cut global CO_2 emissions by 37%. NCUT's adoption of ISO 50001 and smart monitoring aligns with international best practices and supports its commitment to net-zero emissions.

Contribution to SDGs

- **SDG 7 – Affordable and Clean Energy:** Systematic reduction in energy use and renewable integration.
- **SDG 9 – Industry, Innovation and Infrastructure:** Implementation of digital monitoring and IoT-based energy controls.
- **SDG 11 – Sustainable Cities and Communities:** Creation of a sustainable, energy-conscious campus.
- **SDG 13 – Climate Action:** Reduction of Scope 2 emissions through structured energy efficiency planning.

國立勤益科技大學
NCUT
National Chin-Yi University of Technology

登 錄 證 書

此證書授予

國立勤益科技大學

臺中市太平區坪林里中山路二段57號

其領域如下

圖書資訊館、國秀樓與青永館之教學、研究、行政管理相關活動

之能源管理系統符合以下標準

ISO 50001:2018

驗證稽核已通過並予以登錄

登錄號碼： **21ENA31387**
登錄日期： 2021 年 09 月 03 日
發證日期： 2021 年 09 月 03 日
有效日期： 2024 年 09 月 02 日
驗證週期起始日： 2021 年 09 月 03 日
核　　准：

環球國際驗證股份有限公司
UNIVERSAL CERTIFICATION SERVICE CO., LTD.

Management System
Certification
MS008

NCUT actively builds a renewable energy system, and uses solar power systems to reduce peak power consumption and achieve the purpose of saving electricity.

NCUT's Commitment to Renewable Energy

National Chin-Yi University of Technology (NCUT) is leading the charge toward a sustainable future by actively investing in renewable energy systems, particularly solar power. These initiatives are not only aimed at reducing electricity consumption but also at harnessing the abundant energy of the sun to create a more sustainable and eco-conscious campus environment.

Solar Power for Peak Power Reduction

One of NCUT's flagship projects is the implementation of solar power systems across its campus. These systems are strategically designed to **reduce peak power consumption**, which is not only cost-effective but also environmentally responsible. By generating electricity from the sun during peak demand periods, NCUT is able to alleviate stress on the grid and reduce its reliance on conventional power sources.

Benefits of Solar Power at NCUT

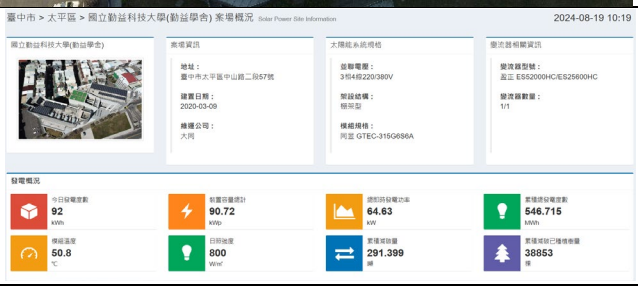
1. **Sustainable Energy Source:** Solar power is a clean and renewable energy source that produces electricity with minimal environmental impact. NCUT's commitment to solar energy aligns with its dedication to sustainability.
2. **Cost Savings:** Solar power systems generate electricity at a lower cost over time, reducing the university's energy bills and providing long-term financial benefits.
3. **Emission Reduction:** Solar power significantly reduces greenhouse gas emissions associated with conventional electricity generation, contributing to a cleaner environment.
4. **Educational Opportunities:** NCUT's investment in solar power also serves as an educational tool, allowing students to learn about renewable energy technologies and their role in combating climate change.

National Chin-Yi University of Technology's proactive approach to renewable energy, particularly solar power, reflects its commitment to environmental responsibility and sustainability. By harnessing the power of the sun, NCUT not only reduces electricity costs but also sets an example for its community and the broader society. The university's investment in renewable energy aligns with its mission to create a greener and more sustainable campus for the benefit of current and future generations.

The solar power generation system has been installed on the rooftop of the Engineering Building with the purpose of storing and supplying electric energy to the building during periods of peak power demand.

The thermal power generation system has been constructed on the uppermost floor of the Engineering Building. This innovative system harnesses the sun's ultraviolet rays to irradiate an electric heating system, effectively converting thermal energy into electricity.

A solar power generation system with a capacity of 332.64 kilowatts has been installed in the Machine Tool building. This system enables real-time monitoring of power generation data through online platforms.



The Chin-Yi student dormitory is equipped with a solar power generation system boasting a capacity of 90.72 kilowatts. This installation allows for the convenient retrieval of real-time power generation data via the Internet.

國立勤益科技大學
NCUT

NCUT is actively committed to establishing a robust renewable energy infrastructure, prominently employing solar power systems to effectively mitigate peak power consumption and facilitate electricity conservation. The university has undertaken several key initiatives in this direction:

1. The Engineering Building hosts a solar power generation system on its highest floor, wherein electric energy is efficiently stored and subsequently distributed to the building during periods of peak power demand.
2. Similarly, the engineering hall boasts a thermal power generation system on its uppermost floor. This innovative setup harnesses the sun's ultraviolet rays to irradiate an electric heating system, seamlessly transforming thermal energy into electricity.
3. The machine tool building has been outfitted with a formidable 332.64 thousand-watt solar power generation system. This installation provides the advantage of real-time power generation monitoring accessible via the Internet.
4. The Chin-Yi student dormitory is equipped with a capable 90.72-kilowatt solar power system, further enhanced by the provision of real-time power generation data accessible through online platforms.

Through these initiatives, NCUT demonstrates its dedication to sustainable practices and the integration of modern technologies for efficient energy utilization.

Building	Device capacity (kWp)	Date	Power generation/Month (kWh)	Cumulative total power generation (kWh)
Chin-Yi student dormitory	90.72	2022-08	11,248	64,440
Chin-Yi student dormitory	90.72	2022-09	11,258	75,698
Chin-Yi student dormitory	90.72	2022-10	10,623	86,321
Chin-Yi student dormitory	90.72	2022-11	8,370	94,691
Chin-Yi student dormitory	90.72	2022-12	7,573	102,264
Chin-Yi student dormitory	90.72	2023-01	9,476	111,740
Chin-Yi student dormitory	90.72	2023-02	10,020	121,760
Chin-Yi student dormitory	90.72	2023-03	10,798	132,558
Chin-Yi student dormitory	90.72	2023-04	10,522	143,080
Chin-Yi student dormitory	90.72	2023-05	13,253	156,333
Chin-Yi student dormitory	90.72	2023-06	9,561	165,894
Chin-Yi student dormitory	90.72	2023-07	11,962	177,856
Chin-Yi student dormitory	90.72	2023-08	10,376	188,232
Chin-Yi student dormitory	90.72	2023-09	10,854	199,086
Chin-Yi student dormitory	90.72	2023-10	9,918	209,004
Chin-Yi student dormitory	90.72	2023-11	8,532	217,536
Chin-Yi student dormitory	90.72	2023-12	9,021	226,557
Chin-Yi student dormitory	90.72	2024-01	8,540	235,097
Chin-Yi student dormitory	90.72	2024-02	7,942	243,039
Chin-Yi student dormitory	90.72	2024-03	10,945	253,984
Chin-Yi student dormitory	90.72	2024-04	11,903	265,887
Chin-Yi student dormitory	90.72	2024-05	9,222	275,109
Chin-Yi student dormitory	90.72	2024-06	10,565	285,674
Machine Tool building	332.64	2023-06	42,675	118,311
Machine Tool building	332.64	2023-07	44,053	162,364
Machine Tool building	332.64	2023-08	39,467	201,831
Machine Tool building	332.64	2023-09	40,130	241,961
Machine Tool building	332.64	2023-10	37,910	279,871
Machine Tool building	332.64	2023-11	30,903	310,774
Machine Tool building	332.64	2023-12	28,108	338,882
Machine Tool building	332.64	2024-01	34,807	373,689
Machine Tool building	332.64	2024-02	36,885	410,574
Machine Tool building	332.64	2024-03	39,123	449,697
Machine Tool building	332.64	2024-04	37,984	487,681
Machine Tool building	332.64	2024-05	43,915	531,596
Machine Tool building	332.64	2024-06	32,294	563,890
Machine Tool building	332.64	2024-07	41,966	605,856
power generation yearly			762,702	

Additional evidencelink: https://esh.ncut.edu.tw/var/file/7/1007/img/223598267.mp4

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https://esh.ncut.edu.tw/var/file/7/1007/img/551194127.mp4