

Independent Verification Opinion

Verification Opinion No.:
C748447-2024-AG-TWN-DNV

Issued Place:
Taipei

Issued Date:
11 March, 2025

This is to verify initiate reporting of Greenhouse Gas Inventory Management Report (2023) of

National Taiwan Normal University

Scope of Verification

DNV Business Assurance (DNV) has been commissioned by National Taiwan Normal University('the Organization') to perform a verification of the greenhouse gas statements of Greenhouse Gas Inventory Management Report (2023) (hereafter the "Inventory Report") in Taiwan, R.O.C. with respect to the area: listed in Appendix A.

The Reporting Boundary for the verification including direct GHG emissions and removals, indirect GHG emissions from imported energy, indirect GHG emissions from transportation, indirect GHG emissions from products used by the Organization and indirect GHG emissions associated with the use of products from the Organization. The further descriptions for the Reporting Boundary listed in Appendix B.

Verification Criteria and GHG Programme

The verification was performed on the basis of The Greenhouse Gas Protocol as well as criteria given to provide for consistent GHG emission identification, calculation, monitoring and reporting.

The verification was conducted in accordance with ISO 14066:2023, ISO 14065:2020, ISO14064-3:2019

Verification Opinion

It is DNV's opinion that the Inventory Report (2023), which was published on Feb 24, 2025 (Version 1), is free from material discrepancies in accordance with the verification criteria identified as stated above. The opinion is decided based on the following approaches,

- For the Direct (Category 1) and Indirect GHG emissions from imported energy (Category 2), the reliability of the information within the Inventory Report (2023) were verified with reasonable level of assurance.
- For the other indirect GHG emissions, the involved information was verified and tested using limited assurance engagement, defined in Inventory Report.

Also, the GHG information as stated in Appendix B has been verified during the process.

Zhen Han Jam Chen
GHG Verifier

Jam Chen

Place and date:
Taipei, 11 March, 2025

For the issuing office:
DNV Business Assurance Co., Ltd.
29Fl., No. 293, Sec. 2, Wenhua Rd., Banqiao
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Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

This Verification Opinion is based on the information made available to us and the engagement conditions detailed above. Hence, DNV cannot guarantee the accuracy or correctness of the information.

DNV cannot be held liable by any party relying on or acting upon this Verification Opinion.

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DNV ZNATW-OP-F50, Rev.13, 2025-01



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Supplement to Verification Opinion

Process and Methodology

The reviews of the Inventory Report and relevant documents, and the subsequent follow-up interviews have provided DNV with sufficient evidence to determine the fulfilment of stated criteria.

Quantification of Greenhouse Gas Emission

The Inventory Report covering the period 1st January, 2023 to 31st December, 2023, it is DNV's opinion that GHG emissions and removals identified within the Reporting Boundary has been included in the Inventory Report as claimed in accordance with the verification criteria identified as stated above, and results in quantification of GHG emissions that are real, transparent and measurable.

Organizational Boundary of Verification

☐ Financial Management Control ☒ Operational Management Control ☐ Equity Share

GHGs Verified

☒ CO₂ ☒ CH₄ ☒ N₂O ☒ HFCs ☒ PFCs ☒ SF₆ ☒ NF₃

The Quantification of GHG emissions and removals in Direct Emission Source:

Category emissions in (tonnes CO ₂ e)	Emissions (tonnes CO ₂ e)
Category 1 (Direct Emissions)	1,168.8190
Category 2 (Imported Energy Indirect Emissions)	15,587.0330

(The Imported Energy Indirect Emissions was calculated based on 2023 electricity emission factor of 0.494 kg CO₂-e/kwh, which was announced by Bureau of Energy, Ministry of Economic Affairs. The Global Warming Potential (GWP) defined in IPCC AR6 (2022) has been chosen and correctly referred by the Organization.)

The Quantification of GHG emissions and removals in Direct Emission Source:

Category	Indirect Emissions Category	Subcategory	Emissions (tonnes CO ₂ e)
Category 3	Transportation	- Emissions from campus shuttle transportation - Emissions from waste transportation	42.0150
Category 4	Products used by organization	Purchased goods and capital goods - Upstream emissions from the procurement of energy (tap water, oil products, natural gas, electricity - Green procurement items (consumables), capital goods (items valued between 2,000 and 9,999 NTD, property valued above 10,000 NTD) Emissions from waste disposal	14,455.1470
Category 5	Indirect GHG emissions associated with the use of products from the organization	Downstream leased assets - Category 1 and Category 2 greenhouse gas emissions from leased assets in the current year	2,470.4360

Verification Opinion

☒ unmodified ☐ modified ☐ adverse

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