

Greenhouse Gas Verification Statement

The inventory of Greenhouse Gas emissions in year 2021 of
Taiwan Union Technology Corp.

803 Bo-ai St., Zhubei,
Hsinchu County 302045, Taiwan



has been verified in accordance with ISO 14064-3:2006 as
meeting the requirements of

ISO 14064-1:2018

Direct emissions

37,645.8186 tonnes of CO₂e

Indirect emissions

327,268.4048 tonnes of CO₂e

Direct emissions and indirect emissions

364,914.223 tonnes of CO₂e

Authorized by

Stephen Pao

Knowledge Deputy General Manager

Date: 27 October 2022

Version 1

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Statement TW22/00433GG, continued

The emission of each category is described as below:

Unit: tonnes of CO₂e

Reporting Boundaries		GHG Emissions
Inventory categories	Description	
Direct emissions		37,645.8186
Indirect emissions	Imported energy	58,264.2695
	Transportation	574.2424
	Products used by an organization	268,429.8929
	Associated with the use of products from the organization	—
	Other sources	—
Direct emissions and indirect emissions		364,914.223

The emission of each site is described as below:

Unit: tonnes of CO₂e

Site	Direct emissions	Indirect emissions	Total GHG emissions
TUC Taiwan (Headquarters)	22,594.5675	127,645.6395	150,240.207
TUC Changshu, China	7,334.3375	99,236.0213	106,570.359
TUC Zhongshan, China	7,716.9137	100,386.7441	108,103.658

SGS has been contracted by Taiwan Union Technology Corporation (hereinafter referred to as “TUC Taiwan”), 803 Bo-ai St., Zhubei, Hsinchu County 302045, Taiwan for the verification of direct and indirect Greenhouse Gas emissions in accordance with

ISO 14064-3:2006

as provided by Taiwan Union Technology Corporation (hereinafter referred to as “TUC Taiwan”), 803 Bo-ai St., Zhubei, Hsinchu County 302045, Taiwan, in the GHG Assertion in the form of GHG report covering GHG emissions of the period 01 January 2021 to 31 December 2021.

Roles and responsibilities

The management of TUC Taiwan is responsible for the organization’s GHG information system, the development and maintenance of records and reporting procedures in accordance with that system, including the calculation and determination of GHG emissions information and the reported GHG emissions.

It is SGS’s responsibility to express an independent GHG verification opinion on the GHG emissions as provided in the GHG Assertion for the period 01 January 2021 to 31 December 2021.

SGS conducted a third-party verification of the provided GHG assertion against the principles of ISO 14064-1:2018, ISO 14064-3:2006 in the period 05 September 2022 to 23 September 2022. The verification was based on the verification scope, objectives and criteria as agreed between TUC Taiwan and SGS on 08 March 2022.

Level of Assurance

The level of agreed assurance for category 1 and category 2 of TUC Taiwan (Headquarters) is reasonable assurance. The level of assurance for category 1 and category 2 agreed of other sites that are verified remotely is that of limited assurance. Category 3 till category 6 agreed is that of limited assurance.

Scope

TUC Taiwan has commissioned an independent verification by SGS Taiwan of reported GHG emissions of TUC Taiwan arising from Copper Clad Laminate · Prepreg · Mass Lamination Service activities, to establish conformance with ISO 14064:2018 principles within the scope of the verification as outlined below.

Statement TW22/00433GG, continued

This engagement covers verification of emission from anthropogenic sources of greenhouse gases included within the organization's boundary and is based on ISO 14064-3:2006.

- Title or description activities: GHG verification for TUC Taiwan in year 2021.
- Location/boundary of the activities:
 - 803 Bo-ai St., Zhubei, Hsinchu County 302045, Taiwan
 - 39 Yangjiang East 3rd Rd., Zhongshan City, Guangdong 528437, China
 - 768 Dongnan Ave., Changshu, Jiangsu 215500, China
- Physical infrastructure, activities, technologies and processes of the organization: Copper Clad Laminate · Prepreg · Mass Lamination Service.
- GHG sources, sinks and/or reservoirs included: Sources as presented in the inventory spreadsheet provided by TUC Taiwan.
- Types of GHGs included: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃
- The IPCC 2007 AR4 GWP values are applied in this inventory.
- Emission factor:
 - Direct emissions: Greenhouse Gas Emission Factor Table (6.0.4), EPA.
 - Indirect emissions:
 - Taiwan : Electricity emission factor is 0.509 kgCO₂e/kwh (Announced by Bureau of Energy, Ministry of Economic Affairs in 2022).
 - China : Electricity emission factor is 0.5810 kgCO₂e/kwh (Climate Letter of the General Office of the Ministry of Ecology and Environment [2022] No. 111).
 - The secondary database has Carbon Footprint Information Platform, Chinese Product Life Cycle Greenhouse Gas Emission Coefficient Database (2022).
- Directed actions: NA
- GHG information for the following period was verified: 01 January 2021 to 31 December 2021
- The version of inventory sheet: 20220923
- The version of GHG assertion: 20220923
- Intended user of the verification statement: Private

Objective

The purposes of this verification exercise are, by review of objective evidence, to independently review:

- Whether the GHG emissions are as declared by the organization's GHG assertion
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

Statement TW22/00433GG, continued

Criteria

Criteria against which the verification assessment is undertaken are the principles of ISO 14064-1:2018.

Materiality

The materiality required of the verification was considered by SGS to 5%, based on the needs of the intended user of the GHG Assertion.

Conclusion

TUC Taiwan provided the GHG assertion based on the requirements of ISO 14064-1: 2018. The GHG information for the period 01 January 2021 to 31 December 2021 disclosing emissions of 364,914.223 metric tonnes of CO₂ equivalent and 0.0000 metric tonnes of direct CO₂ emissions from the combustion of biomass are verified by SGS to a reasonable level of assurance of TUC Taiwan (Headquarters), and a limited level of assurance of other sites that are verified remotely, consistent with the agreed verification scope, objectives and criteria.

The emission of each category is described as below: Unit: tonnes of CO₂e

Reporting Boundaries		GHG Emissions
Inventory categories	Description	
Direct emissions	This direct GHG emissions are the sum of owned or controlled by the organization within the organization.	37,645.8186
Indirect emissions	Imported energy Imported Electricity	58,264.2695
	Transportation Downstream transportation and distribution employee travel (self-driving travel)	574.2424
	Products used by an organization purchased commodity (Procurement of copper foil and butanone) General business waste transportation General business waste disposal	268,429.8929
	Associated with the use of products from the organization Unquantified	—
	Other sources Unquantified	—
Direct emissions and indirect emissions		364,914.223

Statement TW22/00433GG, continued

The emission of each site is described as below: Unit: tonnes of CO₂e

Site	Direct emissions	Indirect emissions	Total GHG emissions
TUC Taiwan (Headquarters)	22,594.5675	127,645.6395	150,240.207
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SGS's approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions information and the controls in place to mitigate these. Our examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the organization's reported GHG emissions.

We planned and performed our work to obtain the information, explanations, and evidence that we considered necessary to provide a reasonable level of assurance that the GHG emissions of category 1 and category 2 in TUC Taiwan (Headquarters), and a limited level of assurance that the GHG emissions of category 1, category 2 in other sites that are verified remotely and category 3 till category 6 for the period 01 January 2021 to 31 December 2021 are fairly stated.

We conducted our verification with regard to the GHG assertion of TUC Taiwan which included assessment of GHG information system, monitoring and reporting plan/protocol. This assessment included the collection of evidence supporting the reported data, and checking whether the provisions of the protocol reference, were consistently and appropriately applied.

In SGS's opinion the presented GHG assertion

- is materially correct and is a fair representation of the GHG data and information, and
- is prepared in accordance with ISO14064-1:2018 on GHG quantification, monitoring and reporting.

Confidentiality

The reports and attachments may contain relevantly confidential information of the clients. In addition to being submitted as governmental application or certification documents, the reports and attachments are not allowed to be edited, duplicated, or published without the clients' agreement in written form.

Avoidance of Conflict of Interest

The reports and attachments are completely complied with the standards and procedures that related authorities established. The reports and attachments of auditing process are conduct with fairness and honesty. If not, the auditing institution not only has to bear the relevant compensation duties, but also to receive legal charge and punishment.

This statement shall be interpreted with the GHG assertion of TUC Taiwan as a whole.

Verifier Group

Above statements coincide with auditing process with fairness and impartiality and aim at the emission of year 2021 of clients.

Lead Verifier:

Kevin Hsieh

Verifier:

Mike Huang

Note: This Statement is issued, on behalf of Client, by SGS Taiwan Ltd. ("SGS") under its General Conditions for Greenhouse Gas Verification Services available at http://www.sgs.com/terms_and_conditions.htm. The findings recorded hereon are based upon an audit performed by SGS. A full copy of this statement, the findings and the supporting GHG Assertion may be consulted at Taiwan Union Technology Corporation, Bo-ai St., Zhubei, Hsinchu County 302045, Taiwan, This Statement does not relieve Client from compliance with any bylaws, federal, national or regional acts and regulations or with any guidelines issued pursuant to such regulations. Stipulations to the contrary are not binding on SGS and SGS shall have no responsibility vis-à-vis parties other than its Client.