

# Greenhouse Gas Verification Statement

The inventory of Greenhouse Gas emissions in year 2022 of

## Taiwan Union Technology Corporation

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

**35,797.1654** tonnes of CO<sub>2</sub>e

Indirect emissions

**247,004.6896** tonnes of CO<sub>2</sub>e

Direct emissions and indirect emissions

**282,801.855** tonnes of CO<sub>2</sub>e

Authorized by



Stephen Pao

Knowledge Deputy General Manager

Date: 13 November 2023

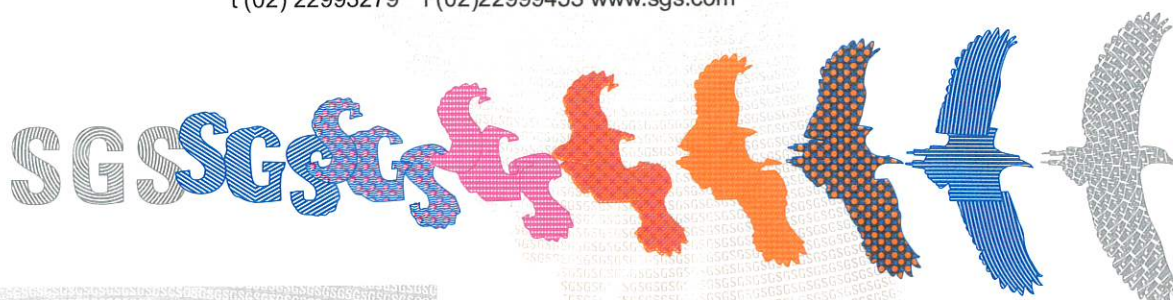
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# Statement TW23/00562GG, continued

The emission of each category is described as below:

Unit: tonnes of CO<sub>2</sub>e

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.	35,797.1654
Indirect emissions	Imported energy	Imported Electricity	52,224.7484
	Transportation	Downstream transportation and distribution by land employee travel (self-driving travel)	343.8601
	Products used by an organization	purchased commodity (Procurement of copper foil and butanone) General business waste transportation General business waste disposal	194,436.0812
	Associated with the use of products from the organization	(not significant)	--
	Other sources	(not significant)	--
Direct emissions and indirect emissions			282,801.855

The emission of each site is described as below:

Unit: tonnes of CO<sub>2</sub>e

Site	Direct emissions	Indirect emissions	Total GHG emissions
TUC Taiwan (Headquarters)	20,993.3650	89,924.2122	110,917.577
TUC Changshu, China	7,214.1105	83,673.9793	90,888.090
TUC Zhongshan, China	7,589.6900	73,406.4982	80,996.188



## Statement TW23/00562GG, continued

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 2022 to 31 December 2022.

### 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 2022 to 31 December 2022.

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 06 October 2023 to 31 October 2023. The verification was based on the verification scope, objectives and criteria as agreed between TUC Taiwan and SGS on 24 October 2023.

### 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 TW23/00562GG, 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 2022
- 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: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>, NF<sub>3</sub>
- The IPCC 2021 AR6 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 0.495 kgCO<sub>2</sub>e/kwh (Announced by Bureau of Energy, Ministry of Economic Affairs in 2023).
    - China : Electricity emission factor is 0.5703 kgCO<sub>2</sub>e/kwh (Climate Letter of the General Office of the Ministry of Ecology and Environment [2023] No. 43).
    - 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 2022 to 31 December 2022
- The version of inventory sheet:

Site	The version of inventory sheet
TUC Taiwan (Headquarters)	20231110
TUC Changshu, China	V5
TUC Zhongshan, China	V2



## Statement TW23/00562GG, continued

- The version of GHG assertion:

Site	The version of GHG assertion
TUC Taiwan (Headquarters)	20231110
TUC Changshu, China	V5
TUC Zhongshan, China	V2

- 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.

### 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 ISO14064-1: 2018. The GHG information for the period 01 January 2022 to 31 December 2022 disclosing emissions of 282,801.855 metric tonnes of CO<sub>2</sub> equivalent and 0.0000 metric tonnes of direct CO<sub>2</sub> emissions from the combustion of biomass are verified by SGS to a reasonable level of assurance, consistent with the agreed verification scope, objectives and criteria.

# Statement TW23/00562GG, continued

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Unit: tonnes of CO<sub>2</sub>e

Reporting Boundaries			GHG Emissions
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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 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 2022 to 31 December 2022 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.

## Statement TW23/00562GG, continued

### Verifier Group

Above statements coincide with auditing process with fairness and impartiality and aim at the emission of year 2022 of clients.

Lead Verifier:

Emma Kao

Verifier:

Rogalo

William Wu

Jenny Liao

kyle Tang

Jim Tsai

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](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, 803 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.