

# Greenhouse Gas Verification Opinion

The inventory of Greenhouse Gas emissions in year 2024 of

## Joy Industrial Co., LTD.

No. 9, Ln. 462, Sec. 4, Changping Rd., Daya Dist., Taichung City, Taiwan (R.O.C.)

has been verified in accordance with ISO 14064-3:2019 as meeting the requirements of

### ISO 14064-1:2018

Opinion Type: Modified

Direct emissions

**184.9979** tonnes of CO<sub>2</sub>e

Indirect emissions

**51,609.1218** tonnes of CO<sub>2</sub>e

Direct emissions and indirect emissions

**51,794.120** tonnes of CO<sub>2</sub>e

Authorized by



Stephen Pao

Business Assurance Director

Date: 03 September 2025

Version 1

TGP56B-15-1 2501

SGS Taiwan Ltd.

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The emission of each category is described as below:

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

Reporting Boundaries		GHG Emissions	
Inventory categories	Description	Location-based	Market-based
Direct emissions	Direct emissions from stationary combustion	1.3074	
	Direct emissions from mobile combustion	46.4523	
	Direct process emissions and removals from industrial processes	0.0000	
	Direct fugitive emissions arise from the release of GHGs in anthropogenic systems	137.2382	
	Direct emissions and removals from land use, land use change and forestry	0.0000	
Indirect emissions	Imported energy	5,045.9844	2,069.4419
	Transportation	1,794.6460	
	Products used by an organization	44,269.6249	

Reporting Boundaries			GHG Emissions	
Inventory categories		Description	Location-based	Market-based
	Associated with the use of products from the organization	Emissions generated from the leasing of downstream assets (electricity usage in rented factories)	498.8665	
	Other sources	No significant emission sources	0.0000	
Direct emissions and indirect emissions			51,794.120	48,817.577
Purchased Renewable Energy Certificate(s) Information				
Site/Location	Type	Renewable Energy Source/Location	Imported energy emissions	
			Location-based	Market-based
Shenzhen Plant /China	Green Electricity Certificate	Solar energy / China	2980.0588	3.5163

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
	Category 1	Category 2	Category 3~6	
Taiwan Plant	105.5496	622.8805	609.3960	1,337.826
Shenzhen Plant	51.7288	2,980.0588	24,022.1366	27,053.924
Taizhou Plant	9.8741	353.3492	20,272.6419	20,635.865
Xiamen Plant	17.8454	1,089.6959	1,658.9629	2,766.504

SGS has been contracted for the verification of direct and indirect Greenhouse Gas emissions in accordance with

**ISO 14064-3:2019**

as provided by Joy Industrial Co., LTD. (hereinafter referred to as “JOY-TECH”), No. 9, Ln. 462, Sec. 4, Changping Rd., Daya Dist., Taichung City, Taiwan (R.O.C.), in the GHG Statement in the form of GHG report.

**Roles and responsibilities**

- The management of JOY-TECH 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.
- The verification was based on the verification scope, objectives and criteria as agreed on 18 September 2023.
- Verification Criteria: ISO 14064-1:2018
- Verification Period: 30 June 2025 to 25 July 2025.

**Scope**

- GHG information for the following period was verified: 01 January 2024 to 31 December 2024
- Location/boundary of the activities:
  - No. 9, Ln. 462, Sec. 4, Changping Rd., Daya Dist., Taichung City, Taiwan (R.O.C.)
  - No. 508, Sec. 4, Changping Rd., Daya Dist., Taichung City, Taiwan (R.O.C.)
  - No. 12, Chuangye Road, Shuitian Third Industrial Zone, Shiyan Street, Baoan District, Shenzhen City, Guangdong Province, China
  - No. 38, South Side of Innovation Avenue, High-tech Industrial Park, Gaogang District, Taizhou City, Jiangsu Province, China
  - Building 106-706, No.639-6 Erh Huan South Road, Tong An District, Xiamen City, Fujian Province, China

## Opinion TW25/00509GG, continued

- 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).
  - Indirect emissions:
    - Electricity emission factor of Taiwan is 0.474 kgCO<sub>2</sub>e/kwh (Announced by Energy Administration, Ministry of Economic Affairs in 2024).
    - Electricity emission factor of China is 0.6169 tonCO<sub>2</sub>e/mwh (Announced by Ministry of Ecology and Environment of China in 2023).
    - The secondary database has Carbon Footprint Information Platform, high-speed rail website, SimaPro 9.5.0.0, SimaPro 9.4.0.3, China's Product Life Cycle Greenhouse Gas Emission Factor Database (2022) (CPCD 2.0).
- Taiwan Plant: The level of assurance for category 1 and category 2 agreed is that of reasonable assurance. Category 3 till category 6 agreed is that of limited assurance.
- Shenzhen Plant / Taizhou Plant / Xiamen Plant: The level of assurance agreed is limited assurance.
- Materiality : 5%
- The version of inventory sheet: Taiwan Plant- TW-250724V1 ; Shenzhen Plant- SZ-250725V1 ; Taizhou Plant- TZ-250725V1 ; Xiamen Plant- XM-250725V1
- The version of GHG statement: Taiwan Plant- 2025/7/28 V3 ; Shenzhen Plant / Taizhou Plant / Xiamen Plant- 2025/7/28 V2
- Intended user of the verification opinion: Private
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### 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 statement
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

### Conclusion

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 the GHG emissions are free from material misstatement.

- The greenhouse gas emissions is 51,794.120 metric tonnes of CO<sub>2</sub> equivalent
- The emissions from the combustion of biomass is 0.0000 metric tonnes of CO<sub>2</sub> equivalent

The emission of each category is described as below:

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

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Reporting Boundaries			GHG Emissions
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	Other sources		0.0000
Direct emissions and indirect emissions			51,794.120

The emission of each site is described as below:

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JOY-TECH purchased 4,825 Renewable Energy Certificate(s) in 2024. The imported energy emissions by location-based and market-based approach shown as the following table :

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

Purchased Renewable Energy Certificate(s) Information				
Site/Location	Type	Renewable Energy Source/Location	Imported energy emissions	
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- The opinion of SGS is modified in accordance with the following described circumstances.
  - The verifier has sufficient and appropriate evidence to support the material emissions, removals, or storage.
  - The verifier applies appropriate criteria for the material emissions, removals, or storage.
  - When the verifier intends to rely on relevant controls, the effectiveness of those controls has been assessed.
  - The verifier, applying the ISO 14064-1:2018 standard, presents the following findings. After adjustments and corrections, no material errors were identified.
    - Adequate evidence has been provided to support the amended opinions.
    - The activity data has been revised based on supporting evidence.
- Retention Limitation: NA

### **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 conducted 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 opinion shall be interpreted with the GHG statement of JOY-TECH as a whole.

**Verifier Group**

Above opinions coincide with auditing process with fairness and impartiality and aim at the emission of year 2024 of clients.

Lead Verifier:

Victor Tseng

Verifier:

Jeff Chen

Henny Fang

Note: This opinion 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 opinion, the findings and the supporting GHG Statement may be consulted at Joy Industrial Co., LTD., No. 9, Ln. 462, Sec. 4, Changping Rd., Daya Dist., Taichung City, Taiwan (R.O.C.), This opinion 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.