

Greenhouse Gas Verification Opinion

The inventory of Greenhouse Gas emissions in year 2023 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

Direct emissions

175.9656 tonnes of CO₂e

Indirect emissions

31,069.1435 tonnes of CO₂e

Direct emissions and indirect emissions

31,245.109 tonnes of CO₂e



Authorized by

Stephen Pao

Business Assurance Director

Date: 05 October 2024

Version 1

TGP56B-15-1 2404

SGS Taiwan Ltd.

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Opinion TW24/00623GG, continued

The emission of each category is described as below:

Unit: tonnes of CO₂e

Reporting Boundaries		GHG Emissions	
Inventory categories	Description	Location-based	Market-based
Direct emissions	Direct emissions from stationary combustion	5.0729	
	Direct emissions from mobile combustion	50.3238	
	Direct process emissions and removals from industrial processes	75.2264	
	Direct fugitive emissions arise from the release of GHGs in anthropogenic systems	45.3426	
	Direct emissions and removals from land use, land use change and forestry	0.0000	
Indirect emissions	Imported energy	3,678.1197	905.5167
	Transportation	9,739.9659	
	Products used by an organization	17,020.5070	

Opinion TW24/00623GG, continued

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)	630.5509	
	Other sources	No significant emission sources	-	
Direct emissions and indirect emissions			31,245.109	28,472.506
Purchased Renewable Energy Certificate(s) Information				
Site/Location	Type	Renewable Energy Source/Location	Imported energy emissions	
			Location-based	Market-based
Shenzhen Plant /China	I-REC	Wind / China	2,772.6030	0.0000

The emission of each site is described as below:

Unit: tonnes of CO_{2e}

Site	Direct emissions	Indirect emissions		Total GHG emissions
	Category 1	Category 2	Category 3~6	
Taiwan Plant	106.7756	658.1468	786.8778	1,551.800
Shenzhen Plant	61.5607	2,772.6030	23,975.7245	26,809.888
Taizhou Plant	7.6293	247.3699	2,628.4215	2,883.421

Opinion TW24/00623GG, continued

SGS has been contracted 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.) 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 between JOY-TECH and SGS on 18 September 2023.
- Verification Criteria: ISO 14064-1:2018
- Verification Period: 1 August 2024 to 20 August 2024.

Scope

- GHG information for the following period was verified: 01 January 2023 to 31 December 2023
- 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
- Types of GHGs included: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃
- The IPCC 2021 AR6 GWP values are applied in this inventory.

Opinion TW24/00623GG, continued

- Emission factor:
 - Direct emissions: Greenhouse Gas Emission Factor Table (6.0.4).
 - Indirect emissions:
 - Electricity emission factor of Taiwan is 0.494 kgCO₂e/kwh (Announced by Energy Administration, Ministry of Economic Affairs in 2023).
 - Electricity emission factor of China is 0.5703 tonCO₂e/mwh (Announced by Ministry of Ecology and Environment of China in 2022).
 - 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: The level of assurance agreed is limited assurance.
- Materiality : 5%
- The version of inventory sheet: 240801V1
- The version of GHG statement: Taiwan Plant-2024/8/20 V2 ; Shenzhen Plant / Taizhou Plant-2024/8/20 V1
- Intended user of the verification opinion: 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 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 31,245.109 metric tonnes of CO₂ equivalent
- The emissions from the combustion of biomass is 0.0000 metric tonnes of CO₂ equivalent

Opinion TW24/00623GG, continued

The emission of each category is described as below:

Unit: tonnes of CO₂e

Reporting Boundaries		GHG Emissions	
Inventory categories	Description		
Direct emissions		Direct emissions from stationary combustion	5.0729
		Direct emissions from mobile combustion	50.3238
		Direct process emissions and removals from industrial processes	75.2264
		Direct fugitive emissions arise from the release of GHGs in anthropogenic systems	45.3426
		Direct emissions and removals from land use, land use change and forestry	0.0000
Indirect emissions	Imported energy	Indirect GHG emissions from electricity purchased by an organization	3,678.1197
	Transportation	<ul style="list-style-type: none"> Emissions generated from upstream transportation (transportation of main raw materials, transportation of assembly materials, outsourced processing transportation) Emissions generated from downstream product transportation and distribution (finished product transportation) Emissions generated from business travel (high-speed rail, airplanes) Emissions generated from waste transportation 	9,739.9659
	Products used by an organization	<ul style="list-style-type: none"> Emissions from the resource extraction stage of purchased energy (electricity, gasoline, diesel) Emissions generated from the procurement of goods (primary raw materials, processed raw materials, tap water) Emissions generated from waste disposal Emissions generated from the use of upstream leased assets (refrigerants in leased vending machines) 	17,020.5070

Opinion TW24/00623GG, continued

Reporting Boundaries			GHG Emissions
Inventory categories	Description		
	Associated with the use of products from the organization	Emissions generated from the leasing of downstream assets (electricity usage in rented factories)	630.5509
	Other sources	No significant emission sources	-
Direct emissions and indirect emissions			31,245.109

The emission of each site is described as below:

Unit: tonnes of CO₂e

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JOY-TECH purchased 5,800 Renewable Energy Certificate(s) in 2023. The imported energy emissions by location-based and market-based approach shown as the following table :

Unit: tonnes of CO₂e

Purchased Renewable Energy Certificate(s) Information				
Site/Location	Type	Renewable Energy Source/Location	Imported energy emissions	
			Location-based	Market-based
Shenzhen Plant / China	I-REC	Wind / China	2,772.6030	0.0000

Opinion TW24/00623GG, continued

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

Opinion TW24/00623GG, continued

Verifier Group

Above opinions coincide with auditing process with fairness and impartiality and aim at the emission of year 2023 of clients.

Lead Verifier:

Victor Tseng

Verifier:

kyle Tang.

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. The findings recorded hereon are based upon an audit performed by SGS. A full copy of this opinion, the findings and the supporting GHG Assertion 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.