

報告編號：(TH24-317 / 第 2 版)

溫室氣體查驗報告意見書  
THGHG24317-01

- 查驗範圍： 環球晶圓股份有限公司  
300091 新竹市科學園區工業東二路 8 號  
涵蓋其他場域範圍如附頁所示。
- 查驗準則： ISO 14064-1：2018
- 查驗目標： 法標根據 ISO 14064-3：2019 標準，確認上述組織之溫室氣體聲明(溫室氣體盤查報告書)依據雙方協議之查驗準則進行盤查並提出報告，法標以客觀公正的立場及原則(相關性、完整性、一致性、準確性、透明度)執行查驗。
- 數據期間： 2025 年 01 月 01 日至 2025 年 12 月 31 日 (檢視的數據為歷史性質)
- 查驗結果：
- |                    |             |                      |
|--------------------|-------------|----------------------|
| 直接溫室氣體排放量(類別 1)：   | 536.7184    | 公噸 CO <sub>2</sub> e |
| 能源間接溫室氣體排放量(類別 2)： | 19,714.5047 | 公噸 CO <sub>2</sub> e |
| 間接溫室氣體排放量(類別 3~6)： | 27,354.1485 | 公噸 CO <sub>2</sub> e |
- 全球暖化潛勢值(GWP)：引用 IPCC 第 06 次評估報告，2021 年
- 意見書依據：本意見書必須與下列文件作為一個整體以進行解釋說明。  
溫室氣體盤查報告 (版次： 2 ; 日期： 2026 年 02 月 04 日 )  
溫室氣體盤查清冊 (版次： 2 ; 日期： 2026 年 02 月 04 日 )
- 實質性： 5% (類別 1 及類別 2)
- 意見類型： 不含保留意見 含保留意見(請見附頁) 放棄簽發
- 查驗結論： 確認組織依據雙方協議查驗準則之要求提出溫室氣體意見書，並公正地呈現溫室氣體數據及相關資訊，與雙方協議的查驗範圍、目標和準則一致。  
意見書盤查數據之合理保證等級為類別 1 及類別 2；有限保證為類別 3 至類別 6。
- 本文件核發日期： 2026 年 04 月 13 日

APPROVED BY

Dr. August Tsai  
Director for Certification  
ON BEHALF OF  
AFNOR ASIA

報告編號：(TH24-317 / 第 2 版)

多場址範圍之地理位置：

廠區 / 公司	活動範圍地址
公司	300091 新竹市科學園區工業東二路 8 號
竹南廠	350401 苗栗縣竹南鎮科中路 21 號

各類別排放量數據：

類別	內容說明	溫室氣體排放量 (公噸 CO <sub>2</sub> e)	備註
(類別 1) 直接溫室氣體排放	固定式燃燒源、移動式燃燒源、逸散性排放源	536.7184	
(類別 2) 輸入能源之間接溫室氣體排放	電力	19,714.5047	所在地基準
		19,679.0533	市場基礎
(類別 3) 運輸之間接溫室氣體排放	原物料上游運輸、產品下游運輸、員工通勤、商務旅行	773.0712	
(類別 4) 組織使用的產品之間接溫室氣體排放	購買產品、資本財、廢棄物處理、子類別中未描述使用服務而產生的排放	26,581.0773	
(類別 5) 使用組織的產品之間接溫室氣體排放	NS	NS	
(類別 6) 其他來源之間接溫室氣體排放	NA	NA	

生質燃燒排放： 0.0000 公噸 CO<sub>2</sub>e

註：本意見書之數據小數點後呈現方式，依照受查驗方之盤查程序等文件之定義呈現；如未定義，則依環境部組織型方案規定呈現-各類別排放量：小數點後 4 位。

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其他查驗相關資訊

組織邊界設定：	營運控制權
溫室氣體類型：	二氧化碳(CO <sub>2</sub> )、甲烷(CH <sub>4</sub> )、氧化亞氮(N <sub>2</sub> O)、氫氟碳化物(HFCs)、全氟碳化物(PFCs)、六氟化硫(SF <sub>6</sub> )、三氟化氮(NF <sub>3</sub> )
預期使用目的：	自願理解溫室氣體排放狀況做為減量策略依據。 (本聲明責任僅適用於上述預期使用目的，不適用其他任何目的。)
電力係數：	引用 2025 年 04 月 14 日經濟部能源署公告之 2024 年度電力係數
數據來源：	<input checked="" type="checkbox"/> 初級數據來源於現場營運活動的數據蒐集。 <input checked="" type="checkbox"/> 類別 3~6 排放量計算為使用估算數據。 次級數據來源為：環境部產品碳足跡資料庫、Ecoinvent <input type="checkbox"/> 其他說明：
查驗方法	<input checked="" type="checkbox"/> 現場查證 <input type="checkbox"/> 其他_____
保留意見：	無
其他：	無
查驗作業實施日期：	2026 年 01 月 27 日 2026 年 01 月 28 日 2026 年 02 月 04 日
報告日期及版次：	2026 年 03 月 30 日日，第 02 版。

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## 查驗團隊與技術審查

主導查驗員： 鄭謙興

簽名：鄭謙興

查驗員： 呂木成

簽名：呂木成

查驗員： 林浚騰

簽名：林浚騰

獨立審查者： 陳怡靜

簽名：陳怡靜

## 查驗程序

法標以風險評估方法及管制為基礎，證據蒐集程序包括：行前評估、現場訪視、與場址的人員訪談、確認所提供的文件證據、對排放數據進行抽樣、評估數據管理系統、確認排放數據的蒐集與彙總、生產與能源消耗之間的分析，並確認所參考的協議條款是否被適當應用。

## 角色與職責

受查組織責任方依據查驗準則規定，負責準備並提出溫室氣體聲明。此項責任包括規劃、實施及維護與溫室氣體聲明有關的數據管理系統，溫室氣體盤查清冊和盤查報告確認。

法標對所報告的溫室氣體排放量提供獨立的第三方查驗，出具本次查驗組織型溫室氣體排放量之查驗意見。查驗團隊具獨立及公正性，不存在任何利益衝突。

# Independent Verification Opinion

**Verification Opinion No.:**  
C744622-2024-AG-TWN-DNV

**Issued Place:**  
Taipei

**Issued Date:**  
27 February, 2025

This is to verify initiate reporting of Greenhouse Gas Inventory Management Report (2024) of

## GlobalWafers Co., Ltd. Hsinchu Plant

### Scope of Verification

DNV Business Assurance (DNV) has been commissioned by GlobalWafers Co., Ltd. ('the Organization') to perform a verification of the greenhouse gas statements of Greenhouse Gas Inventory Management Report (2024) (hereafter the "Inventory Report") in Taiwan, R.O.C. with respect to the sites listed as below.

Site	Address
GlobalWafers Co., Ltd. Hsinchu Plant	No. 8, Industrial East Road 2, Science-Based Industrial Park, Hsinchu ,Taiwan

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 A.

### Verification Criteria and GHG Programme

The verification was performed on the basis of Financial Supervisory Commission Sustainable Development Roadmap Scheme and ISO 14064-1:2018 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 (2024), which was published on January 24, 2025 (Final Version), 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 (2024) were verified with reasonable level of assurance.
- For the other indirect GHG emissions, the involved information was verified and tested with limited level of assurance.

Huang Chung-Lung, Allan  
GHG Verifier



Place and date:  
Taipei, 27 February, 2025

For the issuing office:  
DNV Business Assurance Co., Ltd.  
29Fl., No. 293, Sec. 2, Wenhua Rd., Banqiao  
District, New Taipei City 220, Taiwan



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.

DNV Business Assurance Co., Ltd. 29Fl., No.293, Sec.2, Wenhua Road 220 Ban Chiau Dist., New Taipei City Taiwan TEL: +886-2-82537800, website: <https://www.dnv.com/tw/>

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Verification Opinion No.:  
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Taipei

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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, 2024 to 31st December, 2024, 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

CO<sub>2</sub>  CH<sub>4</sub>  N<sub>2</sub>O  HFCs  PFCs  SF<sub>6</sub>  NF<sub>3</sub>

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

Category emissions in (tonnes CO <sub>2</sub> e)	GlobalWafers Co., Ltd. Hsinchu Plant
Category 1 (Direct Emissions)	222.6078
Category 2 (Imported Energy Indirect Emissions )	3762.6636

(The Imported Energy Indirect Emissions was calculated based on 2023 electricity emission factor of 0.494 kg CO<sub>2</sub>-e/kwh, which was announced by Energy Administration, Ministry of Economic Affairs. The Global Warming Potential (GWP) defined in IPCC AR6 (2021) 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 <sub>2</sub> e)
Category 3	Transportation	Items included in the inventory are emissions from upstream transport and distribution for goods, emissions from downstream transport and distribution for goods, emissions from employee commuting and emissions from business travel	697.9106
Category 4	Products used by organization	Items included in the inventory are emissions from purchased goods, emissions from capital goods, emissions from fuel and energy purchases (not included in category 1 & category 2) , emissions from transportation and treatment services of industrial waste generated by the organization, and emissions from products used by the Organization- other product/service	9231.7845
Category 5	Indirect GHG emissions associated with the use of products from the organization	-	-

#### Verification Opinion

unmodified  modified  adverse

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**APENDIX A**

The Reporting Boundary of GlobalWafers Co., Ltd. Greenhouse Gas Inventory Management Report (2024)

Category	Reporting Boundary	Report
Direct GHG emissions and removals	Stationary Combustion	Emergency generator sets
	Mobile Combustion	Official car
	Process Activities	Non-applicable
	Direct Fugitive Emissions	Septic tank, fire extinguisher, air conditioner, ice water host, refrigerator and water dispenser
	Land use, Land use change	Non-applicable
Indirect GHG emissions from imported energy	The amount of greenhouse gas emissions produced by the input of electricity.	Electricity Use
Indirect GHG emissions from transportation	-Upstream transportation and distribution-the greenhouse gas emissions emitted during the transportation of the spare parts and consumables on-board supplies purchased.	Raw materials、Packaging materials、Consumables、logistic
	-Downstream transportation and distribution-the greenhouse gas emissions emitted during the transportation of the spare parts and consumables on-board supplies purchased.	Products (Wafer)
	-Emissions from employee commuting include emissions -Employee commuting includes vehicles and motorcycles or public transportation.	High speed rail, Taiwan Railway, highway bus carrier, city bus carrier, automobile, scooter
	-Emissions from customer and visitor transport	Non-applicable
	-Emissions from business travel -Employee travel includes land, sea, and air transportation, such as domestic travel by high-speed rail travel transportation, highway bus travel transportation, Taiwan railway travel transportation, automobile travel.	International Air Travel Transportation
Indirect GHG emissions from products used by the Organization	-Emissions from purchased goods	Upstream emissions from purchased Raw materials、Packaging materials、Consumables (including transportation)
	-Emissions from capital goods	Upstream emissions from purchased capital goods (Instrument、Semiconductor equipment、Office Automation equipment、Construction, engineering, and related services、Communication equipment)
	-Emissions from the production of purchased energy (electricity and oil), but not included in Categories 1 and 2.	Upstream emissions from purchased electricity and water (including transportation) Forklift diesel upstream emissions (including transport) Upstream emissions of motor gasoline (including transport)

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	-Emissions from disposal of solid and liquid waste	Waste disposal (excluding transportation) Waste - Clearance Transport Recycling Transportation
	-Emissions from asset usage-the annual greenhouse gas emissions of category 1 and 2 generated by leasing assets of other businesses.	Non-applicable
	-Emissions from products used by the Organization- other product/service	Group meal
Indirect GHG emissions associated with the use of products from the Organization	-Emissions or removals from the use stage of the product include the total expected lifetime emissions from all relevant products sold.	Not significant

The scope of other indirect emissions (other than Imported Energy with specified/limited list of sources) was defined by GlobalWafers Co., Ltd.'s own pre-determined criteria for significance of indirect emissions, considering the intended use of the GHG inventory.



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