



LRQA Independent Assurance Statement

Relating to GlobalWafers Co., Ltd. Taisil Branch's GHG Inventory Report for the calendar year 2023

服務條件

本保證聲明書乃為環球晶圓股份有限公司中德分公司所準備。

英商勞盛股份有限公司台灣分公司(以下簡稱 LRQA)受環球晶圓股份有限公司中德分公司(以下簡稱 GW TAISIL)之委託以查證其 2023 年日曆年度(2023 年 1 月 1 日~12 月 31 日)期間溫室氣體盤查報告(發行日期:2024 年 3 月 22 日,第五版),以下簡稱為"溫室氣體盤查報告"。

此溫室氣體盤查報告包含直接,能源間接以及其其他間接(由運輸產生之間接溫室氣體排放以及由組織使用的產品所產生之間接溫室氣體排放)之溫室氣體排放。環球晶圓股份有限公司中德分公司包含下列的地址範圍內的矽晶棒和矽晶圓的製造相關活動,與其他相關設施設備活動,如溫室氣體盤查報告中所描述。溫室氣體排放使用營運控制權。

溫室氣體報告: 2023 年溫室氣體盤查報告書_2024.03.22(v5)(for ISO 14064-1 方案)

環球晶圓股份有限公司中德分公司: 新竹科學工業園區新竹縣寶山鄉研新一路 2 號

Terms of Engagement

This Assurance Statement has been prepared GlobalWafers Co., Ltd. Taisil Branch.

LRQA was commissioned by GlobalWafers Co., Ltd. Taisil Branch (hereafter referred to as the "GW TAISIL") to assure its GHG Report for the calendar year 2023(01 January 2023~31 December 2023) (hereafter referred to as "the Report").

The Report relates to direct GHG emissions, energy indirect GHG emissions and other indirect GHG emissions (Indirect emissions from transportation and Indirect emissions from products used by the organization). GlobalWafers Co., Ltd. Taisil Branch includes the manufacturing of silicon ingots and silicon wafers and associated facilities, and equipment as set out in the GHG Report as follows. The GHG emissions have been consolidated using 'Operational' control approach.

GHG Report: Fianal_GHG report_ISO14064-1-2018_Calendar year (2023)_ GWT, dated 22 March 2024, 5th Edition.
GlobalWafers Co., Ltd. Taisil Branch: No. 2, Yanxin 1st Rd., Baoshan Township, Hsinchu County 300093, Taiwan

管理責任

環球晶圓股份有限公司中德分公司的管理階層對本溫室氣體盤查報告之準備及維持有效的內部控管包含溫室氣體盤查報告中揭露之資料負責。LRQA 的責任為依據我們與環球晶圓股份有限公司中德分公司的合約執行查證。

最終的, 溫室氣體盤查報告由環球晶圓股份有限公司中德分公司所核准並負有責任。

Management Responsibility

GW TAISIL's management was responsible for preparing the Report and for maintaining effective internal controls over the data and information disclosed. LRQA's responsibility was to carry out an assurance engagement on the Report in accordance with our contract with GW TAISIL.



Ultimately, the Report has been approved by, and remains the responsibility of GW TAISIL.

LRQA 的方法

LRQA 查證已依循 ISO 14064-3:2019 (溫室氣體主張之確証與查証附指引之規範), 以提供對環球晶圓股份有限公司中德分公司符合 ISO 14064-1:2018 (組織層級溫室氣體溫室氣體排放與移除之量化及報告附指引之規範)規定所準備的溫室氣體盤查報告之類別一二之合理保證查證以及類別三四有限保證等級查證。

為作成結論, 本保證以抽樣方式執行並涵蓋下列的活動:

- 依溫室氣體盤查報告中所界定的設施設備, 進行現場查訪; 同時審查與溫室氣體排放數據及資料管理相關的過程;
- 訪談組織中對於相關溫室氣體排放數據與紀錄管理與維持之權責人員
- 查核來自於環境部以及生命週期(SimaPro)軟體之相關係數與 IPCC 2021 年第六次評估報告之 GWP 值
- 查證類別一與類別二的歷史數據及資料來源; 以及
- 查證類別三之上游的原料運輸 (常態性採購達 80%金額); 下游的運輸(實際成品)、員工通勤以及商務旅行之活動數據彙整及資料來源; 以及
- 查證類別四之源自購買的產品和服務之活動數據彙整 (燃料, 能源, 自來水與常態性採購達 80%金額); 以及廢棄物處理及運輸產生的排放之活動數據彙整及資料來源; 以及
- 查證報告排放類別之重大性原則。

LRQA's Approach

Our verification has been conducted in accordance with ISO 14064-3:2019, 'Specification with guidance for verification and validation of greenhouse gas statements' to provide reasonable assurance for Categories 1 and 2 and limited assurance for Categories 3, and 4 that GHG data as presented in the Report have been prepared in conformance with ISO 14064-1:2018, 'Specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals'.

To form our conclusions the assurance engagement was undertaken as a sampling exercise and covered the following activities:

- conducted site tour of the facilities and reviewed processes related to the control of GHG emissions data and records;
- interviewed relevant staff of the organization responsible for managing GHG emissions data and records; and
- verified emission factors sourced from EPA & software of SimaPro and the Global Warming Potentials (GWPs) from the Sixth Assessment Report of the Intergovernmental Panel on Climate Change 2021 (AR6).
- Verified the historical GHG emissions data and records back to source for Categories 1 and 2 emissions;
- Verified the aggregated level GHG emissions data for Category 3 from transportation of raw materials upstream (Regular purchases reach 80% of the amount); downstream transportation (actual finished product), employee commuting and business travel.
- Verified the aggregated level GHG emissions data for Category 4 from goods purchased and services (Fuel, energy, city water and regular purchases reach 80% of the amount); and emissions from waste treatment and transportation activity data and data sources.
- Confirmed significance criteria on reporting of emission categories.

查證等級及實質性

依據合約的協議, 查證是在合理保證等級及 5%的實質性等級(類別一與類別二), 有限保證等級及 5%的實質性等級(類別三與類別四)及下執行的, 本查證意見基於此形成。



Level of Assurance & Materiality

In accordance with our contract agreement, the assurance was conducted at a reasonable level of assurance at a materiality of 5% for Categories 1 and 2 and at a limited level of assurance at a materiality of 5% for Category 3 and 4. The opinion expressed in this Assurance Statement has been accordingly formed.

LRQA意見

基於 LRQA 的方法, 依溫室氣體盤查報告中揭露年西元 2023 年度之全部直接及能源間接的溫室氣體(類別一與類別二)排放總量實質正確,其他間接溫室氣體排放(類別三與類別四)沒有任何情形引起我們注意到計算沒有實質正確;溫室氣體盤查報告之準備也符合 ISO 14064-1:2018 (組織層級溫室氣體溫室氣體排放與移除之量化及報告附指引之規範)相關要求

LRQA's Opinion

Based on LRQA's approach,

- The GHG emissions for Categories 1 and 2 disclosed in the Report as summarized in Table 1 below are materially correct.
- Nothing has come to our attention that would cause us to believe that the GHG emissions for Categories 3 and 4 disclosed in the Report as summarized in Table 1 below are not materially correct; and that the Report has been prepared in conformance with ISO 14064-1:2018.

LRQA's 建議

環球晶圓股份有限公司中德分公司需考量:

- 強化人員對於活動數據蒐集之知識與技巧.
- 改進活度數據輸入與換算之一致性.

LRQA's Recommendations

GW TAISIL should:

- Strengthen staff's knowledge and skills in activity data collection.
- Improve the consistent for data input and conversion.

Signed

日期 Dated: 22 March 2024

Sean Chiang

LRQA Lead Verifier 主導查驗員

Chiang-shan Chen

General Manager 總經理

On behalf of LRQA Limited
CIT, No. 1, Yumen St.,
Zhongshan Dist., Taipei City, Taiwan.
台北市中山區玉門街 1 號 台北創新中心(CIT)

LRQA reference number: TWN00000322/O_2023/Date Issued: 06 May 2024



Table 1. Summary of GlobalWafers Co., Ltd. Taisil Branch, GHG Report for the calendar year 2023 (01 January ~31 December 2023)

Scope of GHG emissions	Tonnes CO ₂ e
Direct GHG emissions (Category 1) 直接溫室氣體排放	1,553.2856
Direct GHG emissions from the combustion of biomass (生質燃燒溫室氣體排放)	None
Indirect GHG emissions from imported energy (purchased electricity) 輸入能源產生之間接溫室氣體排放(電力採購) (Category 2, Location-based 地區基礎)	122,507.4154
Indirect GHG emissions from imported energy (Category 2, Market-based 市場基礎)	None
Indirect GHG emissions from transportation(Category 3) 由運輸產生之間接溫室氣體排放	6,043.9315
Indirect GHG emissions from products used by the organization (Category 4) 由組織使用的產品所產生之間接溫室氣體排放	165,110.3612
Indirect GHG emissions associated with the use of products from the organization (Category 5) 與組織的產品使用相關連之間接溫室氣體排放	Not significant
Indirect GHG emissions from other sources (Category 6) 由其他來源產生的間接溫室氣體排放	Not identified

Note 1: : The national electricity emission factor of year 2022 was quoted, the factor was taken from Taiwan Energy Administration as published on 21 June 2023.

Note 2: GHG emission figures above are being reported with four decimal places as required by Taiwan EPA

備註 1：國家電力溫室氣體排放係數引用能源署在 2023 年 6 月 21 日公佈之民國 111 年度電力排碳係數作為外購電力之排放係數。

備註 2:溫室氣體盤放數據相關小數點規定依據環境部規定執行。

This Assurance Statement is subject to the provisions of this legal section:

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LRQA Independent Assurance Statement

Relating to GlobalWafers Co., Ltd. Taisil Branch's GHG Inventory Report for the calendar year 2024

服務條件

本保證聲明書乃為環球晶圓股份有限公司中德分公司所準備。

英商勞盛股份有限公司台灣分公司(以下簡稱 LRQA)受環球晶圓股份有限公司中德分公司(以下簡稱 TAISIL)之委託以查證其 2024 年日曆年度(2024 年 1 月 1 日~12 月 31 日)期間溫室氣體盤查報告(發行日期:2025 年 3 月 13 日,第四版),以下簡稱為"溫室氣體盤查報告"。

此溫室氣體盤查報告包含直接、能源間接以及其他間接之溫室氣體排放,環球晶圓股份有限公司中德分公司包含下列的地址範圍內的矽晶棒和矽晶圓的製造相關活動,與其他相關設施設備活動,如溫室氣體盤查報告中所描述,溫室氣體排放使用營運控制權。

溫室氣體報告: 2024 年 GHG 盤查報告書_中德_(ISO 14064-1 方案)_2025.03.13_V4

環球晶圓股份有限公司中德分公司: 新竹科學工業園區新竹縣寶山鄉研新一路 2 號

Terms of Engagement

This Assurance Statement has been prepared Global Wafers Co., Ltd. Taisil Branch.

LRQA was commissioned by GlobalWafers Co., Ltd. Taisil Branch (hereafter referred to as the "TAISIL") to assure its GHG Report for the calendar year 2024 (01 January 2024~31 December 2024) (hereafter referred to as "the Report").

The Report relates to direct GHG emissions, energy indirect GHG emissions and other indirect GHG emissions. The GHG emissions have been consolidated using 'Operational' control approach.

TAISIL's geographical boundary includes the operations and activities relevant with the "Manufacturing silicon ingots and silicon wafers", and the associated facilities & equipment as set out in the GHG Inventory Report.

- GHG report_ISO14064-1-2018_Y2024_GlobalWafers Co., Ltd. Taisil Branch, dated 13 March 2025, 4th edition.
- No. 2, Yanxin 1st Rd., Baoshan Township, Hsinchu County 300093, Taiwan

管理責任

環球晶圓股份有限公司中德分公司的管理階層對本溫室氣體盤查報告之準備及維持有效的內部控管包含溫室氣體盤查報告中揭露之資料負責。LRQA 的責任為依據我們與環球晶圓股份有限公司中德分公司的合約執行查證。

最終的, 溫室氣體盤查報告由環球晶圓股份有限公司中德分公司所核准並負有責任。

Management Responsibility

TAISIL's management was responsible for preparing the Report and for maintaining effective internal controls over the data and information disclosed. LRQA's responsibility was to carry out an assurance engagement on the Report in accordance with our contract with TAISIL.



Ultimately, the Report has been approved by and remains the responsibility of TAISIL.

LRQA 的方法

LRQA 查證已依循 ISO 14064-3:2019 (溫室氣體主張之確証與查証附指引之規範), 以提供對環球晶圓股份有限公司中德分公司符合 ISO 14064-1:2018 (組織層級溫室氣體溫室氣體排放與移除之量化及報告附指引之規範)規定所準備的溫室氣體盤查報告之類別一二之合理保證查證以及類別三四有限保證等級查證。

為作成結論, 本保證以抽樣方式執行並涵蓋下列的活動:

- 依溫室氣體盤查報告中所界定的設施設備, 進行現場查訪; 同時審查與溫室氣體排放數據及資料管理相關的過程;
- 訪談組織中對於相關溫室氣體排放數據與紀錄管理與維持之權責人員
- 查核來自於環境部以及生命週期(SimaPro)軟體之相關係數與 IPCC 2021 年第六次評估報告之 GWP 值
- 查證類別一與類別二的歷史數據及資料來源; 以及
- 查證類別三之上游的原料運輸(常態性採購達 80%金額); 下游的運輸(實際成品)、員工通勤以及商務旅行之整合層級溫室氣體排放與活動數據彙整; 以及
- 查證類別四之源自購買的產品和服務之活動數據彙整(燃料,能源,自來水與常態性採購達 80%金額); 以及廢棄物處理及運輸產生的排放之整合層級溫室氣體排放與活動數據彙整; 以及
- 查證報告排放類別之重大性原則。

LRQA's Approach

Our verification has been conducted in accordance with ISO 14064-3:2019, 'Specification with guidance for verification and validation of greenhouse gas statements' to provide reasonable assurance for Categories 1 and 2 and limited assurance for Categories 3, and 4 that GHG data as presented in the Report have been prepared in conformance with ISO 14064-1:2018, 'Specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals'.

To form our conclusions the assurance engagement was undertaken as a sampling exercise and covered the following activities:

- conducted site tour of the facilities and reviewed processes related to the control of GHG emissions data and records.
- interviewed relevant staff of the organization responsible for managing GHG emissions data and records; and
- verified emission factors sourced from MOENV & software of SimaPro and the Global Warming Potentials (GWPs) from the Sixth Assessment Report of the Intergovernmental Panel on Climate Change 2021 (AR6).
- Verified the historical GHG emissions data and records back to source for Categories 1 and 2 emissions;
- Verified the aggregated level GHG emissions data and records for Category 3 from transportation of raw materials upstream (Regular purchases reach 80% of the amount); downstream transportation (actual finished product), employee commuting and business travel.
- Verified the aggregated level GHG emissions data and records for Category 4 from goods purchased and services (Fuel, energy, city water and regular purchases reach 80% of the amount); and emissions from waste treatment and transportation activity data and data sources.
- Confirmed significance criteria on reporting of emission categories.

查證等級及實質性

依據合約的協議, 本查證聲明書的查證意見基於合理保證等級(類別一與類別二)及 5%的實質性, 有限保證等級(類別三與類別四)及 5%的實質性執行的。



Level of Assurance & Materiality

In accordance with our contract agreement, the assurance was conducted at a reasonable level of assurance at a materiality of 5% for Categories 1 and 2 and at a limited level of assurance at a materiality of 5% for Category 3 and 4. The opinion expressed in this Assurance Statement has been accordingly formed.

LRQA意見

基於 LRQA 的方法, 依溫室氣體盤查報告中揭露年西元 2024 年度之全部直接及能源間接的溫室氣體(類別一與類別二)排放總量實質正確,其他間接溫室氣體排放(類別三與類別四)沒有任何情形引起我們注意到計算沒有實質正確;溫室氣體盤查報告之準備也符合 ISO 14064-1:2018 (組織層級溫室氣體溫室氣體排放與移除之量化及報告附指引之規範)相關要求

LRQA's Opinion

Based on LRQA's approach,

- The GHG emissions for Categories 1 and 2 disclosed in the Report as summarized in Table 1 below are materially correct.
- Nothing has come to our attention that would cause us to believe that the GHG emissions for Categories 3 and 4 disclosed in the Report as summarized in Table 1 below are not materially correct; and that the Report has been prepared in conformance with ISO 14064-1:2018.

LRQA's 建議

環球晶圓股份有限公司中德分公司需考量:

- 不同廢棄物處理方式其排放係數的選擇.

LRQA's Recommendations

GW TAISIL should:

- Consideration for different disposal methods and its' GHG emission factors.

Signed

日期 Dated: 14 March 2025

James Guo

LRQA Lead Verifier 主導查驗員

Chiang-shan Chen

General Manager 總經理

On behalf of LRQA Limited
CIT, No. 1, Yumen St.,
Zhongshan Dist., Taipei City, Taiwan.
台北市中山區玉門街 1 號 台北創新中心(CIT)

LRQA reference number: TWN00000322/O_2024/Date Issued: 24 March 2025





Table 1. Summary of GlobalWafers Co., Ltd. Taisil Branch, GHG Report for the calendar year 2024 (01 January ~31 December 2024)

Scope of GHG emissions	Tonnes CO ₂ e
Direct GHG emissions (Category 1) 直接溫室氣體排放	1592.4686
Direct GHG emissions from the combustion of biomass (生質燃燒溫室氣體排放)	None
Indirect GHG emissions from imported energy (purchased electricity) 輸入能源產生之間接溫室氣體排放(電力採購) (Category 2, Location-based 地區基礎)	129,580.9424
Indirect GHG emissions from transportation (Category 3) 由運輸產生之間接溫室氣體排放	6,594.7782
Indirect GHG emissions from products used by the organization (Category 4) 由組織使用的產品所產生之間接溫室氣體排放	196,448.5972
Indirect GHG emissions associated with the use of products from the organization (Category 5) 與組織的產品使用相關連之間接溫室氣體排放	Not significant
Indirect GHG emissions from other sources (Category 6) 由其他來源產生的間接溫室氣體排放	Not identified
Location based and Market based are terminologies from Annex E of ISO 14064-1:2018	

Note 1: The national electricity emission carbon factor of year 2023 was quoted, the factor was taken from Taiwan Energy Administration as published on 26 April 2024.

Note 2: GHG emission figures above are being reported with four decimal places as required by Taiwan Ministry of Environment.

備註 1：國家電力溫室氣體排放係數引用能源署在 2024 年 4 月 26 日公佈之民國 112 年度電力排碳係數作為外購電力之排碳係數。

備註 2：溫室氣體盤放數據相關小數點規定依據行政院環境部規定執行。

This Assurance Statement is subject to the provisions of this legal section:

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