



LRQA Independent Assurance Statement

Relating to FROCH ENTERPRISE CO., LTD.'s GHG Inventory Report for the calendar year 2024

服務條件

本保證聲明書乃為彰源企業股份有限公司所準備。

英商勞盛股份有限公司台灣分公司(以下簡稱 LRQA)受彰源企業股份有限公司(以下簡稱 FROCH)之委託以查證其 2024 日曆年度 1/1/2024~31/12/2024 期間溫室氣體盤查報告(發行日期:2025 年 03 月 20 日,第三版),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溫室氣體排放。彰源企業股份有限公司包含下列的地址範圍內的製造不銹鋼管、鋼板、鋼捲為主要業務相關活動,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:彰源企業股份有限公司溫室氣體盤查報告書

彰源企業股份有限公司

總部與一廠:雲林縣斗六市工業路 122 號

二廠:雲林縣斗六市民有街 35 號

三廠:雲林縣斗六市民樂街 19 號

大連廠:雲林縣斗六市光復路 999 號

元山廠:雲林縣斗六市工業路 98 號

元富廠:雲林縣斗六市斗工十路 138-8 號

Terms of Engagement

This Assurance Statement has been prepared for FROCH ENTERPRISE CO., LTD.

LRQA was commissioned by FROCH ENTERPRISE CO., LTD. (hereafter referred to as the “FROCH”) to assure its GHG Inventory Report¹ of FROCH for the calendar year 2024 (hereafter referred to as the “GHG Inventory Report”).

The GHG Inventory 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.

The main activities of the organization include “ Manufacture of welded stainless pipes, tubes, plates and coils.” and the associated facilities & equipment as set out in GHG Inventory Report¹.

FROCH’s geographical boundary includes its operations and site as mentioned below (as referred in the GHG Inventory Report):

HQ and plant 1: No.122, Industrial Rd., Douliu City, Yunlin County 640404, Taiwan

Plant 2: No.35, Minyou St., Douliu City, Yunlin County 640153, Taiwan

Plant 3: No.19, Minle St., Douliu City, Yunlin County 640153, Taiwan

¹ Final_GHG report_ISO14064-1-2018_calendar year (2024)_ FROCH, dated 20 March 2025, 3rd Edition.



Dalian Plant: No.999, Guangfu Rd., Douliu City, Yunlin County 640155, Taiwan
Wonsan Plant: No.98, Gongye Rd., Douliu City, Yunlin County 640404, Taiwan
Yuanfu Plant: No.138-8, Dougong 10th Rd., Douliu City, Yunlin County 640153, Taiwan

管理責任

彰源企業股份有限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彰源企業股份有限公司間的合約執行查證。

最終的，溫室氣體盤查報告由彰源企業股份有限公司所核准並負有責任。

Management Responsibility

FROCH's management was responsible for preparing the GHG Inventory 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 GHG Inventory Report in accordance with our contract with FROCH.

Ultimately, the GHG Inventory Report has been approved by, and remains the responsibility of FROCH.

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)，以提供對彰源企業股份有限公司符合 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與類別二之合理保證查證以及類別三與類別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；
- 查核來自於環境部之相關係數與 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記錄及資料來源；
- 查證類別三在上游的原料運輸（冷軋鋼捲與熱軋鋼捲）與產品下游運輸之整合層級溫室氣體排放與活動數據彙整；
- 查證類別四在購買的產品和服務（冷軋鋼捲與熱軋鋼捲）；以及廢棄物運輸與一般事業廢棄物焚化處置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 Category 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;
- verified emission factors sourced from Ministry of Environment (MOENV) 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 an aggregated level GHG emissions data and records for Category 3 from upstream raw materials (cold-rolled steel coils and hot-rolled steel coils) and downstream products transportation;
- verified an aggregated level GHG emissions data and records for Category 4 from products purchased (cold-rolled steel coils and hot-rolled steel coils) and waste transportation & general industrial waste incineration treatment; and
- 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(類別一與類別二)，有限保證等級及5%的實質性(類別三與類別四)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 & 2 and at a limited level of assurance at a materiality of 5% for Category 3 & 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日曆年西元 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 Category 1 and 2 disclosed in the report as summarised in the Table 1 below are materially correct.
- nothing has come to our attention that would cause us to believe that the GHG emissions for Category 3 and 4 disclosed in the Report as summarized in Table 1 below is not materially correct.
- and that the GHG Inventory Report has been prepared in conformance with ISO 14064-1:2018.

LRQA's 建議

彰源企業股份有限公司需考量:

- 強化人員對於活動數據蒐集之知識與技巧.



- 改進活動數據輸入與換算之一致性.

LRQA's Recommendations

FROCH ENTERPRISE CO., LTD. should:

- strengthen staff's knowledge and skills in activity data collection.
- improve the consistency of data input and use of conversion factors.

Signed

日期 Dated: 20 March 2025

James Hsiao *James Hsiao*

Lead Verifier 主導查驗員

On behalf of LRQA Limited
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LRQA Reference number: TWN0992007 /O_2024/Date Issued: 25 April 2025

MOENV Control Number 管制編號: NA

Chiang-shan Chen
General Manager 總經理





Table 1. Summary of FROCH's GHG Inventory Report for the calendar year 2024(01 January ~31 December 2024)

彰源實業股份有限公司 2024 年度溫室氣體清冊

Scope of GHG emissions(溫室氣體排放之範疇)	Tonnes CO₂e CO₂ 當量噸
Direct GHG emissions (Category 1) 直接溫室氣體排放	4,418.3131
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) (Category 2, Location-based 地區基礎)	12,178.7633
Indirect GHG emissions from transportation (Category 3) 由運輸產生之間接溫室氣體排放	3,287.9912
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	369,435.1578
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 MOENV.

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環境部規定執行。