

Greenhouse Gas Verification Opinion

The inventory of Greenhouse Gas emissions in year 2024 of

TAIWAN HIGH SPEED RAIL CORPORATION

13F~15F., No. 66, Jingmao 2nd Rd., Nangang Dist.,
Taipei City 115, 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

8,637.6283 tonnes of CO_{2e}

Indirect emissions

428,917.7835 tonnes of CO_{2e}

Direct emissions and indirect emissions

437,555.412 tonnes of CO_{2e}

Authorized by



Stephen Pao

Business Assurance Director

Date: 11 June 2025

Version 1

TGP56B-15-1 2501

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Validation and Verification

VB002

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	27.7902
		Direct emissions from mobile combustion	1,405.2027
		Direct process emissions and removals from industrial processes	0.0000
		Direct fugitive emissions arise from the release of GHGs in anthropogenic systems	7,204.6354
		Direct emissions and removals from land use, land use change and forestry	0.0000
Indirect emissions	Imported energy	Indirect emissions from imported electricity	313.256.0974
	Transportation	Emissions from upstream transport and cargo distribution	282.3004
		Emissions from employee commuting (car/taxi/MRT)	4,437.4085
		Emissions from business travel (MRT/taxi/airplane)	115.9165
	Products used by an organization	Emissions from purchased goods (consumables and spare parts / tap water / upstream from energy resources during the service process)	100,406.3574
		Emissions from capital goods (purchased machinery and equipment)	97.1196
		Emissions from solid and liquid waste processing	1,507.7344
		Emissions from leased assets (electricity/water)	10.0178
	Associated with the use of products from the organization	Emissions from downstream leased assets (electricity/water)	8,804.8315
	Other sources	Undisclosed	NA
Direct emissions and indirect emissions			437,555.412

The emission of each site is described as below:

Unit: tonnes of CO₂e

Site	Direct emissions	Indirect emissions		Total GHG emissions
	Category 1	Category 2	Category 3~6	
Nangang Station	6.4454	7,868.3455	4,740.1877	12,614.979
Taipei Station	110.0055	6,060.8545	5,267.8904	11,438.750
Banqiao Station	2.3211	5,052.7021	2,473.3710	7,528.394
Taoyuan Station	1,494.1502	2,999.1548	4,547.8214	9,041.126
Hsinchu Station	711.8132	2,749.6395	2,167.5883	5,629.041
Miaoli Station	7.4195	1,050.1702	1,127.2325	2,184.822
Taichung Station	43.7302	4,964.8966	10,173.1306	15,181.757
Changhua Station	2.6826	1,229.2025	964.6573	2,196.542
Yunlin Station	42.5591	1,263.6252	1,078.9312	2,385.116
Chiayi Station	76.0681	2,481.7474	2,004.3072	4,562.123
Tainan Station	37.7637	1,930.6510	2,673.3477	4,641.762
Zuoying Station	35.3155	4,310.2372	3,661.6268	8,007.180
Liujia Depot	526.2745	612.2781	595.3993	1,733.952
Wuri Depot	471.0863	1,711.3296	5,361.2503	7,543.666
Taibao Depot	180.2877	88.2778	436.4758	705.041
Yanchao Main WorkShop	1,728.3728	3,737.1620	2,802.2212	8,267.756
Zuoying Depot	1,732.1544	2,613.3563	2,160.7456	6,506.256
Taoyuan OMC Building	0.7797	2,634.9596	1,698.4661	4,334.205
Taipei Headquarters	16.6351	696.2978	2,931.1604	3,644.093
Main Line (Train and Trackside Equipment)	1,411.7637	259,201.2097	58,795.8753	319,408.849

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

ISO 14064-3:2019

as provided by TAIWAN HIGH SPEED RAIL CORPORATION (hereinafter referred to as “TAIWAN HIGH SPEED RAIL”) , 13F.~15F., No. 66, Jingmao 2nd Rd., Nangang Dist., Taipei City 115, Taiwan (R.O.C.), in the GHG Statement in the form of GHG report.

Roles and responsibilities

- The management of TAIWAN HIGH SPEED RAIL 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 01 November 2022.
- Verification Criteria: ISO 14064-1:2018
- Verification Period: 05 April 2025 to 28 April 2025

Scope

- GHG information for the following period was verified: 01 January 2024 to 31 December 2024
- Location/boundary of the activities:

Location	Address
Nangang Station	No.313, Sec. 1, Nangang Rd., Nangang Dist., Taipei City 115018 Taiwan (R.O.C.)
Taipei Station	No. 3, Beiping W. Rd., Zhongzheng District, Taipei City 100230, Taiwan (R.O.C.)
Banqiao Station	No.7, Sec. 2, Xianmin Blvd., Banqiao Dist., New Taipei City 220408, Taiwan (R.O.C.)
Taoyuan Station	No. 6, Sec. 1, Gaotie N. Rd., Cingpu Village, Zhongli Dist., Taoyuan City 320016, Taiwan (R.O.C.)
Hsinchu Station	No. 6, Gaotie 7th Rd., Zhubei City, Hsinchu County 302058, Taiwan (R.O.C.)
Miaoli Station	No. 268, Gaotie 3rd Rd., Houlong Township, Miaoli County 356002, Taiwan (R.O.C.)
Taichung Station	No.8, Jhancyuer 2nd Road, Neighbor 3, Sanhe Village, Wurih Township, Taichung County 414010, Taiwan (R.O.C.)
Changhua Station	No.99, Sec. 2, Jhancyuer Rd., Tianzhong Township, Changhua County 520013, Taiwan (R.O.C.)

Location	Address
Yunlin Station	No.301, Zhanqian E. Rd., Huwei Township, Yunlin County 632007, Taiwan (R.O.C.)
Chiayi Station	No. 168, Gaotie W. Road., Taibau Li, Taibau City , Chiayi 612001, Taiwan (R.O.C.)
Tainan Station	No.100, Guiren Blvd., Guiren Dist., Tainan City 711010, Taiwan (R.O.C.)
Zuoying Station	No. 105 Gaotie Rd., Tsoying District Kaoshiung City 813782, Taiwan (R.O.C.)
Liujia Depot	No. 55, Lane 358, Sec. 5, Xinglong Rd., Zhubei City, Hsinchu County 302053, Taiwan (R.O.C.)
Wuri Depot	No.828, Qingguang Rd., Wuri Dist., Taichung City 414018, Taiwan (R.O.C.)
Taibao Depot	No.360, Kaotie Si Rd., Taibao City, Chiayi County 612001, Taiwan (R.O.C.)
Yanchao Main WorkShop	No. 500, Gaotie-zongchang Rd., Yanchao Dist., Kaohsiung City 824005, Taiwan (R.O.C.)
Zuoying Depot	No.1999, Gaotie Rd., Renwu Dist., Kaohsiung City 814032, Taiwan (R.O.C.)
Taoyuan OMC Building	No. 2, Sec. 1, Gaotie N. Rd., Cingpu Village, Zhongli Dist., Taoyuan City 320016, Taiwan (R.O.C.)
Taipei Headquarters	13~15F., No. 66, Jingmao 2nd Rd., Nangang District, Taipei City 115605, Taiwan (R.O.C.)
Main Line (Train and Trackside Equipment)	The total length of the THSR operating route from Nangang to Zuoying is 350 kilometers.

- Types of GHGs included: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃
- The IPCC 2021 AR6 GWP values are applied in this inventory.
- Emission factor:
 - Direct emissions: Greenhouse Gas Emission Factor, MOENV(2024.02.05)
 - Indirect emissions:
 - Electricity emission factor is 0.474 kgCO₂e/kwh (Announced by Energy Administration, Ministry of Economic Affairs in 2025).
 - The secondary database has Carbon Footprint Information Platform.
- 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.
- Materiality : 5%
- The version of inventory sheet: 29 April 2025
- The version of GHG statement: 29 April 2025
- 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 437,555.412 metric tonnes of CO₂ equivalent
- The emissions from the combustion of biomass is 0.0000 metric tonnes of CO₂ equivalent

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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.
 - The activity data and emission factors of emission sources were incorrect, but no substantial errors were found after correction.
 - Some reference materials have been supplemented and the information has been confirmed to be correct.
- 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 TAIWAN HIGH SPEED RAIL CORPORATION 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:

Kyle Lu.

Verifier:

John Chiang

Kai Ping Teh

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 Statement may be consulted at TAIWAN HIGH SPEED RAIL CORPORATION, 13F., No. 66, Jingmao 2nd Rd., Nangang Dist., Taipei City 115, 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.