

# Greenhouse Gas Verification Statement

The inventory of Greenhouse Gas emissions in year 2021 of

**Taiwan Mobile Co., Ltd.**

11F., No.88, Yanchang Rd., Xinyi Dist.,  
Taipei City 110, Taiwan



has been verified in accordance with ISO 14064-3:2006 as  
meeting the requirements of

**ISO 14064-1:2018**

Direct emissions

**6,177.7965 tonnes of CO<sub>2</sub>e**

Indirect emissions

**619,609.3243 tonnes of CO<sub>2</sub>e**

Direct emissions and indirect emissions

**625,787.121 tonnes of CO<sub>2</sub>e**

Authorized by



David Huang

Senior Director

Date: 10 May 2022

Version 1

TGP56A-15-6 2103

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Statement TW22/00104GG, continued

The emission of each category is described as below:

Unit: tonnes of CO<sub>2</sub>e

Reporting Boundaries			GHG Emissions	
Inventory categories		Description	Location-based	Market-based
Direct emissions		This direct GHG emissions are the sum of owned or controlled by the organization within the organization.	6,177.7965	
Indirect emissions	Imported energy	Imported Electricity	269,124.5399	269,124.5399
	Transportation	3.1 Upstream transportation and distribution	3,448.6227	
		3.2 Business travel		
		3.3 Employee commuting		
		3.4 Downstream transportation and distribution		
	Products used by an organization	4.1 Purchased goods and services	325,562.5138	
		4.2 Capital goods		
		4.3 Fuel- and energy- related activities (not included in category 1 or category 2)		
		4.4 Waste generated in operations		
		4.5 Upstream leased assets		
	Associated with the use of products from the organization	5.1 Use of sold products	21,473.6480	
		5.2 End-of-life treatment of sold products		
		5.3 Downstream leased assets		
		5.4 Franchises		
	Other sources	NA	0.0000	
Direct emissions and indirect emissions			625,787.121	625,787.121
Owned Renewable Energy Certificate(s) Information				
Site/Location	Type	Renewable Energy Source/Location	Imported energy emissions	
			Location-based	Market-based
Taiwan Mobile/ Taiwan	T-REC (bundled T-RECs)	Solar Energy/ Taiwan	269,124.5399	269,124.5399



SGS has been contracted by Taiwan Mobile Co., Ltd. (hereinafter referred to as "Taiwan Mobile"), 11F., No.88, Yanchang Rd., Xinyi Dist., Taipei City 110, Taiwan for the verification of direct and indirect Greenhouse Gas emissions in accordance with

## **ISO 14064-3:2006**

as provided by Taiwan Mobile Co., Ltd. (hereinafter referred to as "Taiwan Mobile") , 11F., No.88, Yanchang Rd., Xinyi Dist., Taipei City 110, Taiwan, in the GHG Assertion in the form of GHG report covering GHG emissions of the period 01 January 2021 to 31 December 2021.

## **Roles and responsibilities**

The management of Taiwan Mobile 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.

It is SGS's responsibility to express an independent GHG verification opinion on the GHG emissions as provided in the GHG Assertion for the period 01 January 2021 to 31 December 2021.

SGS conducted a third party verification of the provided GHG assertion against the principles of ISO 14064-1:2018, ISO 14064-3:2006 in the period 22 February 2022 to 10 March 2022. The verification was based on the verification scope, objectives and criteria as agreed between Taiwan Mobile and SGS on 19 November 2021.

## **Level of Assurance**

The level of assurance for category 1 and category 2 agreed is that of reasonable assurance.

## **Scope**

Taiwan Mobile has commissioned an independent verification by SGS Taiwan of reported GHG emissions of Taiwan Mobile arising from Provision of telecommunication services activities, to establish conformance with ISO 14064:2018 principles within the scope of the verification as outlined below.

This engagement covers verification of emission from anthropogenic sources of greenhouse gases included within the organization's boundary and is based on ISO 14064-3:2006.

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- Title or description activities: GHG verification for Taiwan Mobile in year 2021
- Location/boundary of the activities:

Company	Address
Taiwan Mobile Co., Ltd.	11F~13F, No. 88, Yanchang Rd., Xinyi District, Taipei
Taiwan Fixed Network Co., Ltd.	4F, No. 111, Dunhua S. Rd., Sec. 1, Da-an District., Taipei
Taiwan Teleservices & Technologies Co., Ltd.	7F, No. 206, Dunhua S. Rd., Sec. 2, Da-an District., Taipei
Taiwan Digital Service Co., Ltd.	7F, No. 206, Dunhua S. Rd., Sec. 2, Da-an District., Taipei
Taiwan Kuro Times Co., Ltd.	12F, No. 88, Yanchang Rd., Xinyi District, Taipei
TFN Media Co., Ltd.	11F, No. 98, Zhouzi St., Neihsu District, Taipei
Win TV Broadcasting Co., Ltd.	11F, No. 98, Zhouzi St., Neihsu District, Taipei
Taihsin Property Insurance Agent Co., Ltd.	7F, No. 206, Dunhua S. Rd., Sec. 2, Da-an District., Taipei

- Physical infrastructure, activities, technologies and processes of the organization: Provision of telecommunication services
- GHG sources, sinks and/or reservoirs included: Sources as presented in the inventory spreadsheet provided by Taiwan Mobile
- Types of GHGs included: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>, NF<sub>3</sub>, CFCs
- The IPCC 2021 AR6 GWP values are applied in this inventory.
- Emission factor:
  - Direct emissions: Greenhouse Gas Emission Factor Table (6.0.4), EPA.
  - Indirect emissions:
    - Electricity emission factor is 0.502 kgCO<sub>2</sub>e/kwh (Announced by Bureau of Energy, Ministry of Economic Affairs in 2021).
    - The secondary database has TWEPA Carbon Footprint Information Platform, Simapro 9.0 (Ecoinvent 3.0) and CFP study for specific purchased goods/ service.
    - The EEIO emission factor is used for category 3/4/5 emissions. This EEIO emission factor was calculated by National Taipei University of Technology (NTUT). It combined Taiwan Input-Output Table 2016 (published by TW DGBAS, 2019), Taiwan Energy Balance Sheet 2020 (published by TW DOE, 2021), IPCC guideline 2006, National GHG Inventory for Taiwan 2021 (published by TW EPA, 2021) and calculated the EEIO emission factor for industrial value chain. The limitation of this EEIO Methodology: (1) It is assumed that the relationship between input and output of industry in year 2016 to 2021 is the same. (2) The EEIO emission factor is only calculated for GHG emissions by industry, and not be calculated for specific goods or activities.



- Directed actions: NA
- GHG information for the following period was verified: 01 January 2021 to 31 December 2021
- The version of inventory sheet: 2022.04.20
- The version of GHG assertion: 2022.04.20
- Intended user of the verification statement: 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 assertion
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

## Criteria

Criteria against which the verification assessment is undertaken are the principles of ISO 14064-1:2018

## Materiality

The materiality required of the verification was considered by SGS to 5%, based on the needs of the intended user of the GHG Assertion.

## Conclusion

Taiwan Mobile provided the GHG assertion based on the requirements of ISO 14064-1: 2018. The GHG information for the period 01 January 2021 to 31 December 2021 disclosing emissions of 625,787.121 metric tonnes of CO<sub>2</sub> equivalent and 0.0000 metric tonnes of direct CO<sub>2</sub> emissions from the combustion of biomass are verified by SGS to a reasonable level of assurance, consistent with the agreed verification scope, objectives and criteria.

The emission of each category is described as below:

Unit: tonnes of CO<sub>2</sub>e

Reporting Boundaries		GHG Emissions
Inventory categories	Description	
Direct emissions	This direct GHG emissions are the sum of owned or controlled by the organization within the organization.	6,177.7965

## Statement TW22/00104GG, continued

Reporting Boundaries			GHG Emissions
Inventory categories		Description	
Indirect emissions	Imported energy	Imported Electricity	269,124.5399
	Transportation	3.1 Upstream transportation and distribution	3,448.6227
		3.2 Business travel	
		3.3 Employee commuting	
		3.4 Downstream transportation and distribution	
	Products used by an organization	4.1 Purchased goods and services	325,562.5138
		4.2 Capital goods	
		4.3 Fuel- and energy- related activities (not included in category 1 or category 2)	
		4.4 Waste generated in operations	
		4.5 Upstream leased assets	
	Associated with the use of products from the organization	5.1 Use of sold products	21,473.6480
		5.2 End-of-life treatment of sold products	
		5.3 Downstream leased assets	
		5.4 Franchises	
	Other sources	NA	0.0000
Direct emissions and indirect emissions			625,787.121

Taiwan Mobile owned 7,472 Bundled Renewable Energy Certificate(s) in 2021. The bundled renewable energy certificates are from two type renewable energy: renewable electricity generated from installations owned by Taiwan Mobile, direct procurement from offsite grid-connected generators. The imported energy emissions by location-based and market-based approach shown as the following table :

Unit: tonnes of CO<sub>2</sub>e

Owned Renewable Energy Certificate(s) Information				
Site/Location	Type	Renewable Energy Source/Location	Imported energy emissions	
			Location-based	Market-based
Taiwan Mobile/ Taiwan	T-REC (bundled T-RECs)	Solar Energy/ Taiwan	269,124.5399	269,124.5399



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 we considered necessary to provide a reasonable level of assurance that the GHG emissions of category 1 and category 2 for the period 01 January 2021 to 31 December 2021 are fairly stated.

We conducted our verification with regard to the GHG assertion of Taiwan Mobile which included assessment of GHG information system, monitoring and reporting plan/protocol. This assessment included the collection of evidence supporting the reported data, and checking whether the provisions of the protocol reference, were consistently and appropriately applied.

In SGS's opinion the presented GHG assertion

- is materially correct and is a fair representation of the GHG data and information, and
- is prepared in accordance with ISO14064-1:2018 on GHG quantification, monitoring and reporting.

### 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 statement shall be interpreted with the GHG assertion of Taiwan Mobile as a whole.

## Verifier Group

Above statements coincide with auditing process with fairness and impartiality, and aim at the emission of year 2021 of clients.

Lead Verifier:

*Darren Chan*

Verifier:

*Alfie Cheng*

*Hans Lin*

*Emma Kao*

*Dance Lin*

Note: This Statement 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](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 statement, the findings and the supporting GHG Assertion may be consulted at Taiwan Mobile Co., Ltd., 11F., No.88, Yanchang Rd., Xinyi Dist., Taipei City 110, Taiwan, This Statement 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.



## Appendix A Reporting Boundaries for Taiwan Mobile

The company included within Taiwan Mobile Co., Ltd. for 2021 GHG inventory.

Company	Address	Category & Sub-Category
Taiwan Mobile Co., Ltd.	11F~13F, No. 88, Yanchang Rd., Xinyi District, Taipei	1, 2, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5, 5.1, 5.2, 5.3, 5.4
Taiwan Fixed Network Co., Ltd.	4F, No. 111, Dunhua S. Rd., Sec. 1, Da-an District., Taipei	1, 2, 3.1, 3.2, 3.3, 4.2, 4.3, 4.4, 4.5
Taiwan Teleservices & Technologies Co., Ltd.	7F, No. 206, Dunhua S. Rd., Sec. 2, Da-an District., Taipei	1, 2, 3.1, 3.2, 3.3, 4.2, 4.3, 4.4, 4.5
Taiwan Digital Service Co., Ltd.	7F, No. 206, Dunhua S. Rd., Sec. 2, Da-an District., Taipei	1, 2, 3.1, 3.2, 3.3, 4.2, 4.3, 4.4
Taiwan Kuro Times Co., Ltd.	12F, No. 88, Yanchang Rd., Xinyi District, Taipei	1, 2, 3.1, 3.2, 3.3, 4.2, 4.3, 4.4, 4.5
TFN Media Co., Ltd.	11F, No. 98, Zhouzi St., Neihu District, Taipei	1, 2, 4.1, 4.2, 4.3, 4.4, 4.5, 5.1, 5.2, 5.3
Win TV Broadcasting Co., Ltd.	11F, No. 98, Zhouzi St., Neihu District, Taipei	1, 2, 4.2, 4.3, 4.4, 4.5
Taihsin Property Insurance Agent Co., Ltd.	7F, No. 206, Dunhua S. Rd., Sec. 2, Da-an District., Taipei	1, 2, 3.2, 3.3, 4.2, 4.3, 4.4

## Appendix B GHG emissions from Taiwan Mobile (Category by GHG Protocol)

The GHG emissions from Taiwan Mobile Co., Ltd. for 2021 GHG inventory.

Category by GHG Protocol	Description	Emissions (tonnes of CO <sub>2</sub> e)
Scope 1	Direct GHG emissions	6,177.7965
Scope 2	Energy indirect GHG emissions	269,124.5399
Scope 3 Other indirect GHG emissions		
01 Purchased goods and services	Upstream GHG emissions from the production of products purchased by Taiwan Mobile (including smartphone, pad, smart watch, camera drone, other 3C products, accessories) and TFN Media (giveaway).	153,940.2750
02 Capital goods	Upstream GHG emissions from the production of capital goods purchased by Taiwan Mobile, including tangible and intangible assets.	118,331.1274
03 Fuel- and energy-related activities (not included in scope 1 or scope 2)	Upstream GHG emissions related to the production of diesel oil, gasoline and Electricity consumed.	50,109.8447
04 Upstream transportation and distribution	GHG emissions related to the fuel consumed by internal logistics.	1,095.7580
05 Waste generated in operations	GHG emissions related to the treatment of domestic waste, industrial Waste (used cable, scrap battery and waste electric and electronic equipment), sewage.	862.2519
06 Business travel	GHG emissions from the transportation of employees for business related activities.	79.7491
07 Employee commuting	GHG emissions from the transportation of employees between their homes and worksites.	1,649.9768
08 Upstream leased assets	GHG emissions from the manufacturing of upstream leased assets, including official vehicles, MFP, PC and Notebook.	2,319.0149
09 Downstream transportation and distribution	GHG emissions from the transportation and distribution of sold products in vehicles. (virtual channel, myfone logistics)	623.1388
11 Use of sold products	GHG emissions from the use of products sold by Taiwan Mobile (including smartphone, pad and smart watch) and TFN Media (giveaway).	14,024.0447
12 End-of-life treatment of sold products	GHG emissions from the waste disposal and treatment of products sold by Taiwan Mobile, including smartphone, pad, smart watch and TV set-top box.	1,060.4324
13 Downstream leased assets	GHG emissions from the operation of downstream leased assets (building).	1,505.1861
14 Franchises	GHG emissions from the operation of franchises, including electricity consumption and the fugitive emissions of refrigerator.	4,883.9848