

# VERIFICATION OPINION OF GREENHOUSE GAS STATEMENT

Opinion No.:  
00017-2024-GHG-RGC

Date of issue:  
22 March 2024

Page 1 of 5

This is to verify initiate reporting of Greenhouse Gas Emissions Inventory Report (2023) of

## **TSMC Nanjing Company Limited.**

### **Scope of Verification**

DNV Business Assurance (DNV) has been commissioned by TSMC Nanjing Company Limited. (hereafter the "Company") to perform a verification of its GHG Emissions Inventory Report (2023) (hereafter the "Inventory Report"), the scope of the verification is set to the reporting boundary covered by this Inventory Report, as detailed in Appendix A&B of this opinion.

### **Verification Criteria and GHG Programme**

The verification was performed on the basis of ISO 14064-1, as well as those given to provide for consistent GHG emission identification, calculation, monitoring and reporting. The implementation process of the verification, is in accordance with the requirements of standards of ISO 14066:2023, ISO 14065:2010 and ISO 14064-3:2019 etc.

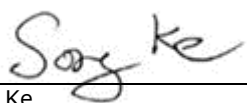
### **Verification Opinion**

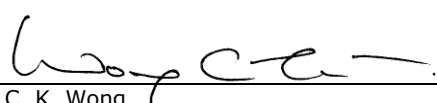
It is DNV's opinion that the Inventory Report (2023), which was published on 2 March 2024, is free from material discrepancies in accordance with the verification criteria identified as stated above. The opinion is decided based on the following approaches,

- For the Direct GHG emissions (Category 1) and Indirect GHG emissions from imported energy (Category 2), the reliability of the information within the Inventory Report (2023) were verified with reasonable level of assurance.
- For the other Indirect GHG emissions (Category 4), the involved information was verified and tested using agreed-upon procedures (AUP).

In addition, the information listed in attached Appendix A&B&C were also verified during the process.

DNV Business Assurance  
China

  
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SONG Ke  
GHG Verifier

  
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C. K. Wong  
Management Representative

Place and date: Shanghai, 22 March 2024

## Supplement to Statement

### Process and Methodology

The reviews of the Inventory Report 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 1 January to 31 December 2023, it is DNV's opinion that the Inventory Report 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>

GHG Inventory Categories	Amount (tCO <sub>2</sub> e)
Category 1 - Direct GHG emissions <sup>1</sup>	45,117.64
Category 2 - Indirect GHG emissions from imported energy <sup>2</sup>	488,043.31
<b>GHG emissions of Category 1 &amp; 2</b>	<b>533,160.95</b>
Category 4 - CDP1 Indirect GHG emissions from purchased goods and services	145,463.93
Category 4 - CDP3 Fuel-and-energy-related activities (not included in category 1 and 2)	354,507.36
<b>GHG emissions of Category 4</b>	<b>499,971.29</b>
<b>Total Emissions<sup>3</sup></b>	<b>1,033,132.24</b>

- For details of the Direct GHG emissions please refer to Annex C;
- The electricity consumption related indirect emissions from imported energy were calculated by the factor of 0.5703 ton CO<sub>2</sub>/MWh (2022) which was required by Ministry of Ecology and Environment of PRC;
- The Global Warming Potential (GWP) 100 year defined in IPCC 2013 AR5 has been chosen and referred by the Organization.

*During this reporting period, the company has implemented following mitigation activities:*

- has applied and retired 855,766 MWh i-RECs under International REC Standard (equivalent to its electricity consumption in 2023);
- has purchased and retired the equivalent 45,118 tonCO<sub>2</sub>e (equivalent to its Direct GHG emissions in 2023) of VCUs (Verified Carbon Unit) generated by "Hechu Afforestation Project in Anhui Province" (VCS ID 1855) under Verra Registry.

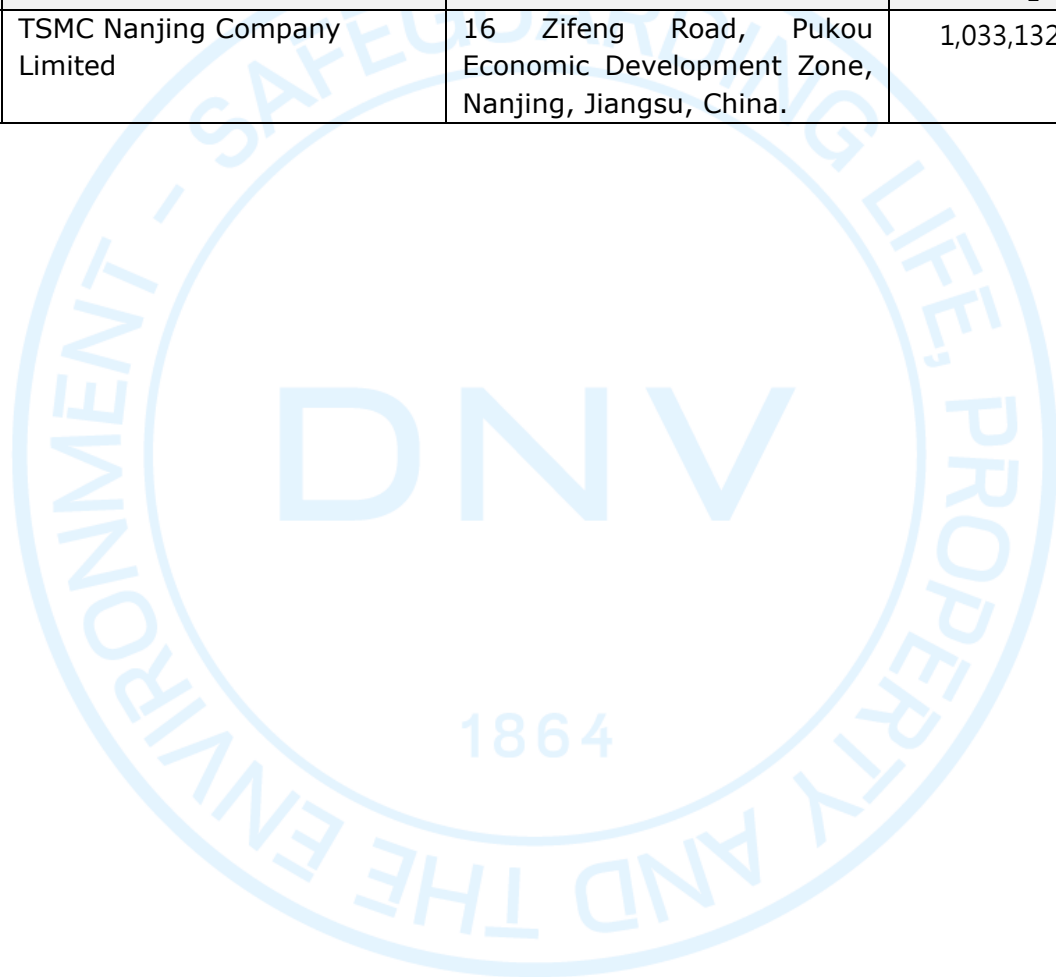
### Verification Opinion

Verified without Qualification  
 Unable to Verify

## APPENDIX A

The GHG statement proposed by the reporting entity for this Inventory Report includes the following addresses:

No.	Facility	Address	Total emissions tCO <sub>2</sub> e
1	TSMC Nanjing Company Limited	16 Zifeng Road, Pukou Economic Development Zone, Nanjing, Jiangsu, China.	1,033,132.24



## APPENDIX B

The reporting boundary of the Inventory Report (2023) is identified by organization as :

Category	Reporting Boundary*
1. Category 1 - Direct GHG emissions	Wafer manufacturing, Fuel combustion (incl. Natural gas and diesel), VOCs treatment, wastewater treatment, refrigerant fugitive and fire extinguisher etc. These facilities and process were owned or controlled by the reporting entity within its organizational boundary.
2. Category 2 - Indirect GHG emissions from imported energy	Indirect emissions from imported electricity.
3. Category 4 - Indirect GHG emissions from products used by the Company	Manufacturing of purchased energy, incl. upstream processing of fuel (not included in category 1 emissions), and upstream processing of electricity generation (not included in category 2 emissions), and indirect emissions from purchased good and service.

\*The scope of other indirect emissions (excl. imported energy with designated/limited source) is determined by the reporting entity based on predetermined criteria for assessing significant indirect emissions and considering the intended use of its GHG inventory.

## APPENDIX C

For direct GHG emissions and removals, the quantified results for each GHGs are as follows, in tCO<sub>2</sub>e units.

CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs	PFCs	SF <sub>6</sub>	NF <sub>3</sub>	Sum
13,185.48	167.98	7,963.94	3,421.53	5,018.71	545.84	14,814.15	45,117.64
29.22%	0.372%	17.65%	7.58%	11.12%	1.21%	32.83%	100.00%

