

# Independent Verification Opinion

**Verification Opinion No.:**  
C686334-2023-AG-TWN-DNV

**Issued Place:**  
Taipei

**Issued Date:**  
09 August, 2024

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

## NUVOTON TECHNOLOGY CORPORATION SUBSIDIARY

### Scope of Verification

DNV Business Assurance (DNV) has been commissioned by NUVOTON TECHNOLOGY CORPORATION SUBSIDIARY ('the Organization') to perform a verification of the greenhouse gas statements of Greenhouse Gas Inventory Management Report (2023) (hereafter the "Inventory Report") with respect to the sites listed in Appendix.

The Reporting Boundary for the verification including direct GHG emissions and removals, indirect GHG emissions from imported energy. The further descriptions for the Reporting Boundary listed in Appendix A.

### Verification Criteria and GHG Programme

The verification was performed on the basis of ISO 14064-1:2018 as well as criteria given to provide for consistent GHG emission identification, calculation, monitoring and reporting. The verification was conducted in accordance with ISO 14066:2011, ISO 14065:2020, ISO14064-3:2019

### Verification Opinion

It is DNV's opinion that the Inventory Report (2023), which was published on 21 May 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 (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, the involved information was verified and tested using agreed-upon procedures, AUP, defined in Inventory Report.

Also, the GHG information as stated in Appendix B and C has been verified during the process.

Jesse Wu  
GHG Verifier



Place and date:  
**Taipei, 09 August, 2024**

For the issuing office:

**DNV Business Assurance Co., Ltd.**  
**29Fl., No. 293, Sec. 2, Wenhua Rd.,**  
**Banqiao District, New Taipei City**  
**220, Taiwan**



Management Representative



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## Supplement to Verification Opinion

### Process and Methodology

The reviews of the Inventory Report and relevant documents, 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 2023 to 31 December 2023, it is DNV's opinion that GHG emissions and removals identified within the Reporting Boundary has been included in the Inventory Report as claimed in accordance with the verification criteria identified as stated above, and results in quantification of GHG emissions that are real, transparent and measurable.

### Organizational Boundary of Verification

Financial Control  Operational Control  Equity Share

### GHGs Verified

CO<sub>2</sub>  CH<sub>4</sub>  N<sub>2</sub>O  HFC<sub>s</sub>  PFC<sub>s</sub>  SF<sub>6</sub>  NF<sub>3</sub>

The Quantification of GHG emissions:

| Category   |   | Emission<br>(ton CO <sub>2</sub> e) |
|------------|---|-------------------------------------|
| Category 1 | Direct GHG emissions and removals           | 21,045.3824                         |
| Category 2 | Indirect GHG emissions from imported energy | 62,855.1426                         |
| Total      |   | 83,900.525                          |

\*The Imported Energy Indirect Emissions was calculated based on

- 1) The electricity emission factor of 0.5703 kg CO<sub>2</sub>e/kwh was used in China, as announced by the Ministry of Ecology and Environment of the People's Republic of China.
- 2) The electricity emission factor of 0.55 kg CO<sub>2</sub>e/kwh was used in Hong kong, as announced by Climate Related Disclosures Report (2022).
- 3) The electricity emission factor of 0.3736874 kg CO<sub>2</sub>e/kwh was used in U.S.A., as announced by the EPA Center for Corporate Climate Leadership.
- 4) The electricity emission factor of 0.538 kg CO<sub>2</sub>e/kwh was used in Israel, as announced by the Carbon intensity of electricity generation.
- 5) The electricity emission factor of 0.4168 kg CO<sub>2</sub>e/kWh used in Singapore, as announced by the Singapore National Statistical Yearbook.
- 6) The electricity emission factor of 0.7132 kg CO<sub>2</sub>e/kWh used in India from the 2022 Grid Electricity Emissions Factors v0.1 - February 2023
- 7) The electricity emission factor of 0.4781 kg CO<sub>2</sub>e/kWh used in India from the EG-TIPS 에너지온실가스 종합정보 플랫폼-소비단 CO<sub>2</sub>eq, 배출계수.

\*\*The Global Warming Potential (GWP) defined in IPCC AR5 (2013) has been chosen and correctly referred by the Organization.)

\*\*\* Nuvoton Technology Corporation Japan's data verified by the JQA (No. 1811004723)

### Verification Opinion

unmodified  modified  adverse

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**APENDIX A**

The organization boundary of report:

| Plant   | Address  | Category 1<br>(Ton CO <sub>2</sub> e) | Category 2<br>(Ton CO <sub>2</sub> e) | Total<br>(Ton CO <sub>2</sub> e) |
|---|--|---------------------------------------|---------------------------------------|----------------------------------|
| <b>Total Emissions of<br/>NUVOTON TECHNOLOGY CORPORATION SUBSIDIARY</b> |  | 21,045.3824                           | 62,855.1426                           | 83,900.525                       |
| 芯唐電子科技(上海)有限公司  | 上海市延安西路 2299 號 27 樓 2701 室   | 15.1154                               | 46.0843                               | 61.1997                          |
| Nuvoton Technology Corporation America                                  | 251 Little Falls Drive, Wilmington, DE 19808, Delaware, United States  | 4.8272                                | 208.4695                              | 213.2967                         |
| 芯唐電子科技(香港)有限公司  | Unit 9-11, 22F, Millennium City 2, No 378 Kwun Tong Road, Kowloon, Hong Kong   | 1.0556                                | 9.7532                                | 10.8088                          |
| 芯唐電子科技(深圳)有限公司  | 深圳市南山區高新南六道 6 號邁科龍大廈 8 樓 801 室   | 7.4455                                | 40.2836                               | 47.7291                          |
| Nuvoton Technology Israel Ltd.  | 8 Hasadnaot Street, Herzliya B, 4672835 Israel   | 172.9908                              | 595.4632                              | 768.454                          |
| Nuvoton Technology India Private Limited                                | PS22-23, Bridge+, Unit No. 02-02 to 15, 2nd Floor, Ascendas Park Square Mall, Whitefield Road, ITPB, Bengaluru, 560066 | 0.168                                 | 3.1244                                | 3.2924                           |
| Nuvoton Technology Singapore Pte. Ltd.                                  | 3 Bedok South Road, Singapore, 469269  | 9.0076                                | 109.3404                              | 118.348                          |
| Nuvoton Technology Korea Ltd.   | 2507 Room, Trade Tower, Yeongdong-daero 511, Gangnam-Gu, Seoul, Korea, 06164   | 1.7138                                | 15.1995                               | 16.9133                          |
| 松智電子科技(蘇州)有限公司  | 蘇州高新區塔園路 379 號 1 號樓 4 樓  | 3.5585                                | 17.2245                               | 20.7831                          |
| Nuvoton Technology Corporation Japan*                                   | 1 Kotari-yakemachi, Nagaokakyo City, Kyoto 617-8520, Japan   | 20,829.5*                             | 61,810.2*                             | 82,639.7*                        |
| Nuvoton Technology Germany GmbH   | Konrad-Zuse-Platz 8, 81829 München   | 0                                     | 0                                     | 0                                |
| Marketplace Management Limited  | Vistra Corporate Services Centre, Wickhams Cay II, Road Town, Tortola, VG1110, British Virgin Islands                  | 0                                     | 0                                     | 0                                |
| Goldbond LLC  | 1912 Capitol Ave, Cheyenne, WY 82001, United States  | 0                                     | 0                                     | 0                                |
| Nuvoton Investment Holding Ltd.   | 3rd Floor, Omar Hodge Building, Wickhams Cay I, P.O. Box 362, Road Town, Tortola, British Virgin Islands               | 0                                     | 0                                     | 0                                |
| 松勇投資股份有限公司  | 台北市中山區敬業一路 192 號 3 樓   | 0                                     | 0                                     | 0                                |
| Nuvoton Technology Holdings Japan                                       | 1 Kotari-yakemachi, Nagaokakyo City, Kyoto 617-8520, Japan   | 0                                     | 0                                     | 0                                |

\*Data verified by the JQA (No. 1811004723)

## APPENDIX B

### The Reporting Boundary of NUVOTON TECHNOLOGY CORPORATION SUBSIDIARY Greenhouse Gas Inventory Management Report (2023)

#### Indirect emissions verification procedures:

| Category    | Subcategory  | Verification Procedures          |
|-------------|--|----------------------------------|
| Category 2  | 2.1 Imported electricity   | -Bill and invoice from suppliers |
| Category 3* | Indirect GHG emissions from transportation                                       | Not Significant Emissions        |
| Category 4* | Indirect GHG emissions from products used by an organization                     | Not Significant Emissions        |
| Category 5* | Indirect GHG emissions associated with the use of products from the organization | Not Significant Emissions        |
| Category 6* | Indirect GHG emissions from other sources  | Not Significant Emissions        |

NOTE: Category 3, Category 4, Category 5 & Category 6 were evaluated as Not Significant Emissions base on NUVOTON TECHNOLOGY CORPORATION SUBSIDIARY's significant emission identification process reported in GHG inventory report.

## APPENDIX C

For direct emissions and removals, quantified separately for each GHG as below:

芯唐電子科技(上海)有限公司:

| GHG Type                             | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs   | PFCs   | SF <sub>6</sub> | NF <sub>3</sub> | Total   |
|--------------------------------------|-----------------|-----------------|------------------|--------|--------|-----------------|-----------------|---------|
| Emissions<br>(ton CO <sub>2</sub> e) | 11.1667         | 3.6032          | 0.3445           | 0.0000 | 0.0000 | 0.0000          | 0.0000          | 15.1154 |
| Proportion<br>(%)                    | 73.88           | 23.84           | 2.28             | 0.00   | 0.00   | 0.00            | 0.00            | 100.00  |

Nuvoton Technology Corporation America:

| GHG Type                             | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs   | PFCs   | SF <sub>6</sub> | NF <sub>3</sub> | Total  |
|--------------------------------------|-----------------|-----------------|------------------|--------|--------|-----------------|-----------------|--------|
| Emissions<br>(ton CO <sub>2</sub> e) | 0.000           | 4.8272          | 0.0000           | 0.0000 | 0.0000 | 0.0000          | 0.0000          | 4.8272 |
| Proportion<br>(%)                    | 0.00            | 100             | 0.00             | 0.00   | 0.00   | 0.00            | 0.00            | 100.00 |

芯唐電子科技(香港)有限公司:

| GHG Type  | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs   | PFCs   | SF <sub>6</sub> | NF <sub>3</sub> | Total  |
|-----------|-----------------|-----------------|------------------|--------|--------|-----------------|-----------------|--------|
| Emissions | 0.000           | 1.0556          | 0.0000           | 0.0000 | 0.0000 | 0.0000          | 0.0000          | 1.0556 |

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid. This Verification Opinion is based on the information made available to us and the engagement conditions detailed above. Hence, DNV cannot guarantee the accuracy or correctness of the information. DNV cannot be held liable by any party relying or acting upon this Verification Opinion.

DNV Business Assurance Co., Ltd. 29Fl., No.293, Sec.2, Wenhua Road 220 Ban Chiau Dist., New Taipei City Taiwan TEL: +886-2-82537800, website: <https://www.dnv.com/tw/>

DNV ZNATW-OP-F50, Rev.12, 2024-4

(ton CO<sub>2</sub>e)

| Proportion (%) | 0.00 | 100 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
|----------------|------|-----|------|------|------|------|------|--------|
|----------------|------|-----|------|------|------|------|------|--------|

芯唐電子科技(深圳)有限公司:

| GHG Type                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs   | PFCs   | SF <sub>6</sub> | NF <sub>3</sub> | Total  |
|-----------------------------------|-----------------|-----------------|------------------|--------|--------|-----------------|-----------------|--------|
| Emissions (ton CO <sub>2</sub> e) | 2.4474          | 4.8986          | 0.0795           | 0.0000 | 0.0000 | 0.0000          | 0.0000          | 7.4455 |
| Proportion (%)                    | 32.87           | 66.06           | 1.07             | 0.00   | 0.00   | 0.00            | 0.00            | 100.00 |

Nuvoton Technology Israel Ltd.:

| GHG Type                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs   | PFCs   | SF <sub>6</sub> | NF <sub>3</sub> | Total    |
|-----------------------------------|-----------------|-----------------|------------------|--------|--------|-----------------|-----------------|----------|
| Emissions (ton CO <sub>2</sub> e) | 153.6939        | 14.6064         | 4.6905           | 0.0000 | 0.0000 | 0.0000          | 0.0000          | 172.9908 |
| Proportion (%)                    | 88.85           | 8.44            | 2.24             | 0.00   | 0.00   | 0.00            | 0.00            | 100.00   |

Nuvoton Technology India Private Limited.:

| GHG Type                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs   | PFCs   | SF <sub>6</sub> | NF <sub>3</sub> | Total  |
|-----------------------------------|-----------------|-----------------|------------------|--------|--------|-----------------|-----------------|--------|
| Emissions (ton CO <sub>2</sub> e) | 0.00            | 0.1680          | 0.00             | 0.0000 | 0.0000 | 0.0000          | 0.0000          | 0.1680 |
| Proportion (%)                    | 0.00            | 100             | 0.00             | 0.00   | 0.00   | 0.00            | 0.00            | 100.00 |

Nuvoton Technology Singapore Pte. Ltd.:

| GHG Type                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs   | PFCs   | SF <sub>6</sub> | NF <sub>3</sub> | Total  |
|-----------------------------------|-----------------|-----------------|------------------|--------|--------|-----------------|-----------------|--------|
| Emissions (ton CO <sub>2</sub> e) | 0.00            | 9.0076          | 0.00             | 0.0000 | 0.0000 | 0.0000          | 0.0000          | 9.0076 |
| Proportion (%)                    | 0.00            | 100             | 0.00             | 0.00   | 0.00   | 0.00            | 0.00            | 100.00 |

Nuvoton Technology Korea Ltd.:

| GHG Type                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs   | PFCs   | SF <sub>6</sub> | NF <sub>3</sub> | Total  |
|-----------------------------------|-----------------|-----------------|------------------|--------|--------|-----------------|-----------------|--------|
| Emissions (ton CO <sub>2</sub> e) | 0.4997          | 1.1876          | 0.0000           | 0.0000 | 0.0000 | 0.0000          | 0.0000          | 1.7138 |

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|                |       |       |      |      |      |      |      |        |
|----------------|-------|-------|------|------|------|------|------|--------|
| Proportion (%) | 29.16 | 69.30 | 1.55 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 |
|----------------|-------|-------|------|------|------|------|------|--------|

松智電子科技(蘇州)有限公司:

| GHG Type                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs   | PFCs   | SF <sub>6</sub> | NF <sub>3</sub> | Total  |
|-----------------------------------|-----------------|-----------------|------------------|--------|--------|-----------------|-----------------|--------|
| Emissions (ton CO <sub>2</sub> e) | 0.0000          | 3.5585          | 0.0000           | 0.0000 | 0.0000 | 0.0000          | 0.0000          | 3.5585 |
| Proportion (%)                    | 0.00            | 100.00          | 0.00             | 0.00   | 0.00   | 0.00            | 0.00            | 100.00 |

Nuvoton Technology Corporation Japan:

| GHG Type                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HFCs | PFCs  | SF <sub>6</sub> | NF <sub>3</sub> | Total    |
|-----------------------------------|-----------------|-----------------|------------------|------|-------|-----------------|-----------------|----------|
| Emissions (ton CO <sub>2</sub> e) | 18,594          | 41              | 125              | 3.1  | 1,389 | 677.4           | 0.0000          | 20,829.5 |
| Proportion (%)                    | 89.27           | 0.20            | 0.60             | 0.01 | 6.67  | 3.25            | 0.00            | 100.00   |

