

Independent Verification Opinion

Verification Opinion No.:
C687015-2023-AG-TWN-DNV

Issued Place:
Taipei

Issued Date:
23 August, 2024

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

Zyxel Communications Corporation

Scope of Verification

DNV Business Assurance (DNV) has been commissioned by Zyxel Communications Corporation ('the Organization') to perform a verification of the greenhouse gas statements of Greenhouse Gas Inventory Management Report (2023) (hereafter the "Inventory Report") in Taiwan, R.O.C. with respect to the sites listed in Appendix A.

The Reporting Boundary for the verification including direct GHG emissions and removals, indirect GHG emissions from imported energy, indirect GHG emissions from transportation, indirect GHG emissions from products used by the Organization and indirect GHG emissions associated with the use of products from the Organization. The further descriptions for the Reporting Boundary listed in Appendix B.

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 May 21st 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.

Makoto Chen
GHG Verifier



Place and date:

Taipei, 23 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

☒ CO₂ ☒ CH₄ ☒ N₂O ☒ HFCs ☒ PFCs ☒ SF₆ ☒ NF₃

The Quantification of GHG emissions:

Category	Direct and indirect GHG emissions categorization*	Emissions and removals verified, tonnes CO ₂ -e
1	Direct emissions and removals	78.3040
2	Indirect GHG emissions from imported energy	455.7831
Total greenhouse gas emissions and removals in Category 1 & 2		534.0871
3	Indirect GHG emissions from transportation	2684.7008
4	Indirect GHG emissions from products used by the Organization	5528.9330
5	Indirect GHG emissions associated with the use of products from the Organization	578995.1237
Total greenhouse gas emissions and removals in Category 3,4 & 5		587208.7575

(The Imported Energy Indirect Emissions was calculated based on 2023 electricity emission factor of 0.494 kg CO₂-e/kwh, which was announced by Energy Administration, Ministry of Economic Affairs. The Global Warming Potential (GWP) defined in IPCC AR6 (2021) has been chosen and correctly referred by the Organization.)

Verification Opinion

☒ unmodified ☐ modified ☐ adverse

Appendix to Verification Opinion No. C687015-2023-AG-TWN-DNV

APPENDIX A

The greenhouse gas statements of Zyxel Communications Corporation Greenhouse Gas Inventory Management Report (2023) with respect to the following sites :

Site	Address
Zyxel Communications plant	No. 2, Industry East Rd. IX, Hsinchu Science Park, Hsinchu 30075, Taiwan (R.O.C.) (Including Zyxel Communications Corporation Park parking lot)
Zyxel Communications (mitrastar plant)	3F., 4F., No. 6, Chuangxin 2nd Rd., Hsinchu Science Park, Hsinchu County 30076, Taiwan (R.O.C.)
Zyxel Communications (Zhunan Warehouse)	4F, No. 2, Kebei 6th Road, Zhunan Town, Miaoli County , Taiwan (R.O.C.)
Zyxel Communications Taichung office	4F-8, No. 213, Chaofu Road, Taichung City (R.O.C.)
Zyxel Communications Kaohsiung office	No. 3, Ziqiang 3rd Rd., Lingya Dist., Kaohsiung City 802751 , Taiwan (R.O.C.)

APPENDIX B

The Reporting Boundary of Zyxel Communications Corporation Greenhouse Gas Inventory Management Report (2023)

Category	Reporting Boundary
Direct GHG emissions and removals	Mainly from fuel consumption, HFCs emission, other GHG sources or sinks inside organizational boundaries and that are owned or controlled by the organization
Indirect GHG emissions from imported energy	The amount of greenhouse gas emissions produced by the input of electricity and energy.
Indirect GHG emissions from transportation	<ul style="list-style-type: none"> - Upstream transportation and distribution of selected purchased goods (Top 80% suppliers by transaction value. 100% by weight, Excluded Exhibit, RMA, Sample). - Downstream transportation and distribution - Transportation of employees for business-related activities. - Employee commuting
Indirect GHG emissions from products used by the Organization	<ul style="list-style-type: none"> - Upstream (cradle-to-gate) emissions of Energy ,Fuel and selected purchased goods. - Emissions from tap water - Emissions from the manufacturing and processing of capital goods - Disposal or treatment of waste and waste transportation.
Indirect GHG emissions associated with the use of products from the organization	<ul style="list-style-type: none"> - Emissions during product use stage - Emissions from product disposal

The scope of other indirect emissions (other than Imported Energy with specified/limited list of sources) was defined by Zyxel Communications Corporation's own pre-determined criteria for significance of indirect emissions, considering the intended use of the GHG inventory.

APPENDIX C

For direct emissions and removals, quantified separately for each GHG as below, in tonnes of CO₂-e:

CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	NF ₃	TOTAL
3.5034	39.8890	0.0978	34.8138	-	-	-	78.3040
4.47%	50.94%	0.12%	44.46%	0.00%	0.00%	0.00%	100%