

C0. Introduction

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C0.1

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**(C0.1) Give a general description and introduction to your organization.**

GIGABYTE is a Taiwanese technology firm founded in 1986 and has become one of the world’s leading brands of motherboards and graphics cards. As we believe in excellent quality, innovation, and service, we have continually expanded our product variety to satisfy consumer needs over the years. We are confident in our continuing ability to provide high-quality products in our core businesses such as motherboards, graphics cards, laptop computers, and servers. The following is a simple description of our various products:

**Motherboards:**

GIGABYTE’s motherboard offerings cater to the requirements of a wide range of users from gamers to professionals by providing models of varying specifications that satisfy any performance requirement. GIGABYTE motherboards are known for their high quality, stability, and reliability. Support for PCIe 4.0, Thunderbolt 4, and Wi-Fi 6E ensures our customers can access the latest and most advanced technologies.

**Graphics Cards:**

Graphics cards developed by GIGABYTE focus on providing high performance, low power consumption, and premium functions such as ray tracing technology. Graphics cards of varying specifications are provided to satisfy any customer requirement. Graphics cards enjoy a wide range of applications from gaming to cryptocurrency mining. GIGABYTE continues to invest in R&D to push the latest, most advanced graphics card technology to market.

**Laptop Computers:**

The design of GIGABYTE laptops focuses on performance, portability, and user experience. We offer laptop models with various display sizes, processing power, and battery life to satisfy the requirements of varying customers. In addition to advanced technologies such as Intel Evo, NVIDIA RTX graphics cards, and AI noise reduction, GIGABYTE laptops also feature upgraded cooling performance to ensure they remain cool and quiet under high loading.

**Servers:**

Server products aim to provide high performance, reliability, and scalability to satisfy the requirements of enterprise customers. In addition to providing models of varying specifications to satisfy the application requirements of small enterprises to large data centers, our servers have adopted advanced technologies such as AMD EPYC processors, PCIe Gen 4.0, and NVMe SSD to provide optimal performance and efficiency. The Company continues to invest in performance improvements of our server products to decrease energy consumption and carbon footprint.

GIGABYTE is always aware of our production processes’ impacts on the natural and social environment, and we have increased our attention and actions on assuming corporate social responsibilities (CSR). Through continuous learning and improvement, we aim to become a fully sustainable and leading company.

C0.2

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**(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.**

**Reporting year**

**Start date**

January 1 2022

**End date**

December 31 2022

**Indicate if you are providing emissions data for past reporting years**

No

**Select the number of past reporting years you will be providing Scope 1 emissions data for**

<Not Applicable>

**Select the number of past reporting years you will be providing Scope 2 emissions data for**

<Not Applicable>

**Select the number of past reporting years you will be providing Scope 3 emissions data for**

<Not Applicable>

C0.3

(C0.3) Select the countries/areas in which you operate.

China  
Taiwan, China

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

TWD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	TW0002376001

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual or committee	Responsibilities for climate-related issues
Board Chair	<p>1. In 2009, GIGABYTE officially established the Green Sustainable Development Committee (the Committee) as the highest level in charge of sustainability of business governance, including climate-related management and issues.</p> <p>2. The Green Sustainable Development Committee is chaired by the Board Chair, under which the Director of the Sustainable Development Office serves as the convener, and the head of the Quality Assurance Division, the heads of Engineering of R&amp;D Section in all business units, as well as the heads of R&amp;D in subsidiaries serve as assistant conveners. Other members of the Committee contain the presidents of all business units and subsidiaries, the VP of the Group's Resource Management Center, the COO of the Group's Operations Management Center, and the Director of Customer Service Center.</p> <p>3. For more details on the GIGABYTE Green Sustainable Development Committee, please refer to the GIGABYTE CSR website: <a href="https://csr.gigabyte.tw/en/commitment-to-csr-en/">https://csr.gigabyte.tw/en/commitment-to-csr-en/</a></p>

C1.1b

**(C1.1b) Provide further details on the board’s oversight of climate-related issues.**

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – all meetings	Reviewing and guiding annual budgets Overseeing and guiding employee incentives Reviewing and guiding strategy Overseeing the setting of corporate targets Monitoring progress towards corporate targets Overseeing value chain engagement Reviewing and guiding the risk management process	<Not Applicable>	1. The GIGABYTE Green Sustainable Development Committee convenes meetings across business units, plants, and subsidiaries monthly and reports the conclusions or decision-to-be-made biweekly to the Board Chair. At the end of each year, the Committee reports the sustainability-related accomplishments of the year to the Board of directors. They then give a general review of the company’s performance on sustainability and approve the actions to be implemented next year. 2. The topics discussed at the Committee meetings include a wide range of green technical and strategic issues such as compliance with product regulations, clean production, climate change mitigation, adaptation, etc. These issues are key factors that help us track the progress of implementing CSR-related policies. Climate-related topics are one of these crucial focuses. The followings are some examples of climate-related issues that have been discussed at the meetings and proceeded to the Board of directors afterward: 2.1 Approved by the Chair and directors of the Board, the Green Action Plan was launched in 2009 as GIGABYTE’s core policy and guiding strategy for sustainable development. Its ultimate goal is to shift GIGABYTE into an environmentally-friendly corporate that can reach zero emission, zero waste, and low pollution. It sets up 3 phases and several stages, and so far, we have entered the 3rd stage of the 3rd phase (2022-). 2.2 The Green Action Plan, supervised by the Board, sets company-wide long-term targets to reduce carbon emissions, water use, and waste. Also, the 333 Reduction Plan was established as a short-term target. The Board monitors and reviews the progress of both targets every year. For instance, each year, we carry out Scope 1+2+3 carbon emission inventory, analyze emission reduction performance, identify potential hot spots of reduction in the next stage, and report these at the Committee meeting and high-level meetings attended by the Board chair. 2.3 The 3rd phase of the Green Action Plan contains various projects and actions such as sustainable supply chain management, LCA for all-product lines, low-carbon substitute for packing, etc. The implementation and performance of these projects are all supervised by the Board. 2.4 A comprehensive sustainability assessment is applied to critical suppliers every year. The board chair reviews and approves the assessment result and the list of suppliers excellent in sustainability management and presents awards to them at the Supplier End-of-Year Party. 2.5 Climate scenario analysis is conducted or updated at least once a year. The result of scenario analyses as well as identified climate-related risks and opportunities are disclosed in the annual Sustainability Report, of which the publication is reviewed and approved by the board chair.

**C1.1d**

**(C1.1d) Does your organization have at least one board member with competence on climate-related issues?**

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	The GIGABYTE’s Board Vice-Chair has competence on climate-related issues. In spite of the fact that he has no professional background, he is used to considering the environmental and social impacts that GIGABYTE might have. For instance, the G-HOME GIGABYTE Sustainability Eco-roof established in 2013 is based on his concept of "returning trees to the earth". He once stated, "What if we make money but lose the planet?", at a senior manager’s annual meeting to indicate his belief that business operations should never disregard their impact on society and the environment.	<Not Applicable>	<Not Applicable>

**C1.2**

**(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.**

**Position or committee**

Sustainability committee

**Climate-related responsibilities of this position**

- Managing annual budgets for climate mitigation activities
- Setting climate-related corporate targets
- Monitoring progress against climate-related corporate targets
- Managing value chain engagement on climate-related issues
- Managing climate-related risks and opportunities

**Coverage of responsibilities**

<Not Applicable>

**Reporting line**

Reports to the board directly

**Frequency of reporting to the board on climate-related issues via this reporting line**

More frequently than quarterly

**Please explain**

As mentioned in C.1.1a and C1.1b, the GIGABYTE Green Sustainable Development Committee is the primary decision-making and operational organization for promoting sustainable development affairs, in which climate-related management is one of the most critical issues.

Representatives from each BU, site, and subsidiaries meet every 1-2 months. Each representative reports the current status or trend of sustainability issues, environmental issues, and product regulations and proposes responding strategies in order to help the Company timely adjust the internal policy and keep up with the global tendency.

The conclusions and messages from the monthly meetings are regularly reported to the Office of the President during the joint monthly meetings. In addition, the yearly outcomes of implemented sustainable development actions and an executive plan for the next year are also reported to the board of directors for further decision-making that can effectively integrate the corporate governance policies with sustainable development trends.

**Position or committee**

Chief Operating Officer (COO)

**Climate-related responsibilities of this position**

Managing annual budgets for climate mitigation activities

Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)  
 Providing climate-related employee incentives  
 Managing climate-related risks and opportunities

**Coverage of responsibilities**

<Not Applicable>

**Reporting line**

Reports to the board directly

**Frequency of reporting to the board on climate-related issues via this reporting line**

More frequently than quarterly

**Please explain**

The GIGABYTE Green Sustainable Development Committee is convened and administratively operated by the Sustainable Development Office, which is subordinate to the Group Operations Management Center led by the Chief Operating Officer (COO). That is, the Board Chair serves as the chair of the Committee, and the COO directs and manages the Committee's executive unit.

More details of the responsibilities of the Sustainable Development Office are provided in the next row. The personnel of the Office in charge of each program, project, and action reports the progress or periodical outcomes to the Office's director at weekly meetings. Remarkable periodical outcomes or decision-to-be-made would be selected and reported to the Chief Operation Officer (COO) and the Board Chair at monthly meetings in order to make further decisions and ensure all implementations are on the track.

**Position or committee**

Environment/ Sustainability manager

**Climate-related responsibilities of this position**

- Managing annual budgets for climate mitigation activities
- Implementing a climate transition plan
- Integrating climate-related issues into the strategy
- Conducting climate-related scenario analysis
- Monitoring progress against climate-related corporate targets
- Managing value chain engagement on climate-related issues
- Assessing climate-related risks and opportunities
- Managing climate-related risks and opportunities

**Coverage of responsibilities**

<Not Applicable>

**Reporting line**

Operations - COO reporting line

**Frequency of reporting to the board on climate-related issues via this reporting line**

More frequently than quarterly

**Please explain**

The Sustainable Development Office used to be the Quality and Strategy Management Office in charge of ensuring our products comply with all target market safety and harmful substance regulations and forming corporate strategies for product quality management. It became the "Sustainable Development Office" to scale up its responsibility in managing and promoting green initiatives.

The Office comprises the Corporate Sustainable Development Department, the Quality and Risk Management Department, and the Environmental Health and Safety Division. Each department monitors climate-related issues through various programs, projects, or actions depending on its responsibilities and profession. The following are specific climate-related responsibilities of the Office.

1. Plan, track, and manage group-wide climate-related programs, projects, or actions:
  - 1.1 Serve as the main implementer and monitor of the "Green Action Plan", which is GIGABYTE's core sustainable development policy and guiding strategy.
  - 1.2 Research and monitor international and national trends of climate-related issues and propose responding strategies or actions that are the most feasible by GIGABYTE to the Green Sustainable Development Committee and the Board.
  - 1.3 Collect CSR-related statistics, including climate-related data, from all bases (Taiwan and China) annually and conduct comprehensive analyses and evaluations of annual CSR performance.
  - 1.4 Analyze and disclose GIGABYTE's climate-related risks and opportunities, as well as actions' implementation and performances through various corporate channels, such as CSR reports, annual reports, the official website, etc.
2. Implement specific climate mitigation and adaptation programs.
  - 2.1 Conduct annual greenhouse emission inventory (scope 1+2+3) and analyze and identify hotspots for reducing emissions along our value chain.
  - 2.2 Manage and implement the "333 Reduction Plan", which aims at reducing company-wide carbon emission, water use, and waste by 3% each year.
  - 2.3 Develop an internal carbon footprint calculation platform and conduct life-cycle analyses for all main product lines.
  - 2.4 Cooperate with various international and domestic partners to initiate tree-planting actions and encourage our partners, suppliers, consumers, and other stakeholders to join the activities and attach more importance to the benefits of trees towards mitigating global warming.
  - 2.5 Establish and manage GIGABYTE's urban climate adaptation experiment site, "G-HOME GIGABYTE Sustainable Eco-rooftop". It demonstrates how to transform an old urban building into a more climate-resilient and ecologically friendly building.
3. Promote sustainable supply chain management:
 

Conduct sustainable supply chain assessment annually, by which we collect suppliers' climate-related information, such as greenhouse gas inventory and water-saving actions, which are helpful for our identification of climate risks and opportunities along the supply chain.

**C1.3**

**(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?**

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

**(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).**

**Entitled to incentive**

Board Chair

**Type of incentive**

Non-monetary reward

**Incentive(s)**

Public recognition

**Performance indicator(s)**

Progress towards a climate-related target  
 Implementation of an emissions reduction initiative  
 Reduction in absolute emissions  
 Energy efficiency improvement  
 Reduction in total energy consumption  
 Increased engagement with suppliers on climate-related issues  
 Company performance against a climate-related sustainability index (e.g., DJSI, CDP Climate Change score etc.)

**Incentive plan(s) this incentive is linked to**

Not part of an existing incentive plan

**Further details of incentive(s)**

GIGABYTE has conducted an annual greenhouse gas emission inventory since 2010 and has been implementing emission reduction actions for years. Our unremitting efforts and achievements in emission reduction and other climate-related actions have won us several CSR awards and honors in Taiwan, such as the Role Model Award of the GVM's CSR Survey, being scored as A- by CDP Climate Change for two consecutive years. Our Board Chair was invited to attend the award ceremony as an Awardee. Moreover, because of the plentiful accomplishment of ESG actions, the Board Chair has been invited to share GIGABYTE's CSR strategies and practices with universities and other corporates.

**Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan**

In 2009, GIGABYTE introduced the "Green Action Plan" that included various reduction measures. Compared to 2009, the Company has cut its emissions by 42.99%. Energy savings also reduce operational costs, but they may not be seen as significant financial benefits since the electricity fee is quite low in Taiwan. In contrast, external recognitions can raise awareness among the board and senior executives not only by providing non-monetary incentives, such as a sense of honor, but also through demonstrating the importance of environmental issues and how businesses are expected to fulfill their responsibilities to society and the environment, regardless of their size.

**Entitled to incentive**

Other C-Suite Officer

**Type of incentive**

Monetary reward

**Incentive(s)**

Bonus – set figure

**Performance indicator(s)**

Achievement of a climate-related target  
 Implementation of an emissions reduction initiative  
 Reduction in absolute emissions  
 Energy efficiency improvement  
 Reduction in total energy consumption

**Incentive plan(s) this incentive is linked to**

Long-Term Incentive Plan

**Further details of incentive(s)**

GIGABYTE launched a 6-year program "Sustainability Fund" in 2019. The budget of the Fund comes from the money saved from the energy reduction and water saving in the previous year, and it invests in three objectives: Factory Reduction Reward, Reduction Proposal Reward, and Green Project. In terms of the Factory Reduction Reward, the Factories' managers would be rewarded if their Factories achieve yearly emission reduction goals. The managers can then decide the use of the reward (e.g., investing in equipment improvement or distributing to employees). In 2022, only one of the three factories reach the predefined emission reduction goal. The factory manager was rewarded a total of TWD200,000.

**Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan**

Since the "Green Action Plan" initiated in 2009, GIGABYTE has invested in various measures to reduce emissions, such as replacing low-efficient equipment with more energy-saving ones. As a result, the group emissions have successfully cut by more than 40% compared to the 2009 level. However, the effectiveness of those measures has somehow reached limits. Moreover, the Company faces increasing external pressures on climate-related performance from target markets, downstream stakeholders, and emerging ESG or climate regulations. Hence, achieving more efficient emission reductions by means of more aggressive, strategically integrated, and motivation-connected measures are urgently required. Therefore, the Sustainability Fund was designed and launched to provide a new scheme that enables all Company members to become not only contributors but also beneficiaries of improvement in reduction performance.

**Entitled to incentive**

All employees

**Type of incentive**

Monetary reward

**Incentive(s)**

Bonus – set figure

**Performance indicator(s)**

Implementation of an emissions reduction initiative

Reduction in absolute emissions  
 Energy efficiency improvement  
 Reduction in total energy consumption

**Incentive plan(s) this incentive is linked to**

Long-Term Incentive Plan

**Further details of incentive(s)**

As mentioned in the row above, the 6-year Sustainability Fund also provides Reduction Proposal Reward to the departments or individuals who develop excellent emission reduction projects or low-carbon products. The number of reward winners depends on the budget of the Fund (i.e. the money saved from the energy and water saving in the previous year). Each winner can receive monetary rewards ranging from TWD3,000 to TWD10,000, depending on the level of benefit or value that their projects or products can make. As of June 2023, the total reward given back to departments and individual employees was TWD797,000.

**Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan**

Same explanation as the previous row.

**C2. Risks and opportunities**

**C2.1**

**(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?**

Yes

**C2.1a**

**(C2.1a) How does your organization define short-, medium- and long-term time horizons?**

	From (years)	To (years)	Comment
Short-term	1	3	The issues that are very likely to cause significant impacts on our business operation or affect our business strategies within 3 years are identified as highly concerning risks and opportunities and thus the responding actions are urgently necessary.
Medium-term	3	5	The issues that are likely to cause significant impacts on our business operation or affect our business strategies in 3-5 years are identified as secondary risks and opportunities. The actions might not be put into practice at this stage but should be already scheduled in the risk and opportunity management meetings and strategies.
Long-term	5	10	The issues that have the potential to cause significant impacts on our business operation or affect our business strategies in 5-10 years are identified as relatively minor risks and opportunities. However, a monitoring mechanism is continuously proceeding in order to control any variable owing to changes in, for example, regulations or physical climatic factors.

**C2.1b**

**(C2.1b) How does your organization define substantive financial or strategic impact on your business?**

GIGABYTE defines the substantive level of financial and strategic impact caused by climate-related risks by looking at three quantifiable indicators:

**1. The scale of financial loss**

Climate-related risks may cause GIGABYTE financial loss, such as decreased revenues, increased operating costs, or unexpected expenses led by an emergency. However, not all financial losses are substantial. Take the impact on revenue as an example. In 2022, the European market shared 29.61% of GIGABYTE's sales amounts, while the market in Taiwan merely stood at 2.90%. Therefore, if reducing demands for our products due to climate-related issues take place in the European market (e.g., being unqualified for a new carbon footprint requirement), the impact on GIGABYTE will be more substantial than when the same situation happens in the Taiwan market.

**2. The extent of the operational strategies or modes that need to be adjusted**

Some considered risks do cause direct financial losses, while some do not. To avoid those risks with higher costs, we must make a great effort to adjust or radically change the original strategies or operational processes. For instance, we need to introduce more emerging initiatives and analytical tools, invest in new examination methodologies to be in line with reporting standards such as SBT and TCFD, strengthen the cross-disciplinary competence of the personnel who are responsible for these works, and automate production processes to improve energy efficiency. The more needs for strategic changes, the more substantial the impacts are.

**3. The scale of influence along the value chain**

The last condition we seriously consider when defining the materiality of impact is the scale range of the risk along GIGABYTE's value chain. The larger the scale, the more significant the impact. Some risks may neither cause severe financial losses nor a substantial change in business strategies for GIGABYTE; however, to well-respond to the risk, we need to partner with the value chain, and thus it drives us to communicate with the suppliers and customers increasingly. Moreover, we have to initiate new management tools and processes to meet the demand side's requirements or ensure low-carbon manufacturing. These inevitably need cost-effective support and involvement by the supply chain.

## C2.2

### (C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

#### Value chain stage(s) covered

Direct operations  
Upstream  
Downstream

#### Risk management process

Integrated into multi-disciplinary company-wide risk management process

#### Frequency of assessment

More than once a year

#### Time horizon(s) covered

Short-term  
Medium-term  
Long-term

#### Description of process

GIGABYTE Sustainable Development Office is responsible for tracking global climate-related issues, such as international climate agreements and regulatory developments in specific regions or markets, and identifying and reviewing the risks and opportunities associated with climate change for GIGABYTE. The Office meets weekly. High-risk issues identified and assessed from the above process would be discussed and reported to the superior level, i.e., the Green Sustainable Development Committee or the Board chair.

To identify and assess climate-related risks, the Office follows three steps:

Step 1. Understanding and identifying climate-related risks that businesses like GIGABYTE may face locally and globally.

Several sources are considered when identifying climate-related risks, including the physical consequences of global warming and extreme weather events, amendments to existing or emerging regulations that aim to strengthen climate mitigation actions and performance, and all changes brought about by government, business, or even market changes. Climate-related risks can be categorized into three groups at this stage:

1.1 Responses to policies and regulations: All the climate-related policies and regulations that GIGABYTE is subject to or will be subject to.

1.2 International trends: GIGABYTE may stir a change in business models, processes, technical evolution, and innovation as information disclosure requirements for organizational climate-related performance, products, and services, as well as consumer and customer pressures, increase.

1.3 Substantial impacts from physical climate factors: Taiwan is one of the riskiest regions in the world severely threatened by natural disasters, including typhoons, earthquakes, floods, and rising sea levels.

Step 2. Identifying whether GIGABYTE is affected by the potential risk sources identified in STEP 1.

In the 2nd step, GIGABYTE connects the identified risk sources to the issues that really matter to its operations. These issues contain substantial financial impacts, such as increasing operation and manpower costs, increasing investment in technical innovation and transition, and decreasing revenue. Moreover, a new effort must also be put into researching, developing, and implementing climate-related strategies and actions, which is not only about financial costs but also about new skills and knowledge demands.

Step 3. After identifying actual impact issues on GIGABYTE caused by various risk sources, we assess to what extent GIGABYTE is exposed to each impact through a matrix. Three main criteria are used to determine impacts in our risk assessment matrix:

3.1 Would the risk affect any part of our value chain? Climate-related risks would impact the upstream supply chain, business operation, and downstream demands. Additionally, since GIGABYTE has factories in Taiwan and China, it is essential to consider the local impacts. Therefore, different responses and management strategies are required for different effects occurring along the value chain.

3.2 When would the risk be the most likely to occur? Also, we define the exposure to risk by its time horizon. Risks that are likely to occur within three years are deemed the most urgent, those that will occur in 3-5 years are considered medium urgent, and those that will appear in 5-10 years need more caution since they will happen eventually. The time horizon is consistent with C2.1a.

3.3 To what extent will GIGABYTE be affected by the risk? Risks that have more substantive financial impacts require more immediate management and response. For example, increasing operational costs due to failure to comply with climate-related regulations and increased power consumption due to rising summer temperatures can result in substantial financial impacts. Furthermore, our revenue would be affected if we fail to respond to changes in the market and consumer preferences.

With the assessment matrix, we can identify that, for example, a risk that impacts our revenue within three years shall be considered extremely pressing. Having a clearer picture of each risk allows us to devise more effective management strategies.

## C2.2a

### (C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

Relevance & inclusion	Please explain
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	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	<p>Some existing international and domestic policies and regulations are affecting or are likely to affect GIGABYTE. Taking the domestic situation in Taiwan as an example, the Taiwan government has made more and more effort to develop and enforce climate-related issues to timely and promptly respond to the international trend of net zero transition. Currently, the domestic climate-related regulations that most affect businesses in Taiwan include Climate Change Response Act, Electricity Act, and Renewable Energy Development Act.</p> <ol style="list-style-type: none"> <li>Taiwan's "Greenhouse Gas Reduction and Management Act," adopted in 2015, was amended in January 2023 to become the "Climate Change Response Act." The revised Act legislates a net-zero emissions target by 2050 within the law. Subsequently, several managing and supporting measures will be adopted, including carbon fees, extending the scope of objects required for greenhouse emission inventory and verification, using renewable energy, etc.</li> <li>The Financial Supervisory Commission Taiwan released the "Roadmap for the Sustainable Development of Listed Companies" in 2022, requiring listed companies to disclose greenhouse gas inventory information by 2027 and conduct verification by 2029. The inventory shall cover the same scope as the consolidated financial statement.</li> <li>According to the Energy Administration Act, issued by the Ministry of Economic Affairs, designated energy users with contracted electricity consumption capacities over 800KW must achieve a 1% power saving rate annually from 2015 to 2024.</li> <li>The Renewable Energy Development Act requires companies whose electricity contract capacity with TaiPower (a state-owned power company) exceeds 5,000 KW to use renewable energy for 10% of their power consumption.</li> </ol> <p>In comparison with other emission-intensive industries and companies in Taiwan, GIGABYTE's carbon emissions and energy consumption are relatively low. So far, we have yet to be included in the lists subject to the Energy Administration Act and the Renewable Energy Development Act. We are also not expected to be taxed in the first phase of implementing the carbon fee mechanism. As these regulations are updated and adjusted according to global trends and pressures from value chains and industries, GIGABYTE will likely become restricted as requirements become stricter. Thus, we consider these current regulations in our climate-related risk assessment.</p>
Emerging regulation	Relevant, always included	<p>To control global warming below 1.5°C compared to the pre-industrial level, more and more climate-related regulations with stricter requirements are evolving at local, national, and regional levels. Some of these emerging regulations are affecting or will likely affect GIGABYTE. Examples are as follows:</p> <ol style="list-style-type: none"> <li>EU will soon implement Carbon Border Adjustment Mechanism (CBAM) in October 2023. To prevent carbon leakage, the products which productions are emission-intensive, such as cement, electricity, iron, and steel, will be taxed while imported to the EU. As a result, the cost of products, particularly from the countries that do not levy a carbon tax or fees, will inevitably increase. As of now, GIGABYTE's main products are not subject to CBAM, and we expect it will only affect GIGABYTE directly after 2030. We still consider it, however, because a product's carbon footprint will become one of the critical and common product information to be transparently disclosed and reported while selling our products worldwide. In addition, as previously mentioned, Taiwan's government is legislating a carbon fee mechanism in response to CBAM. As a result, even if GIGABYTE is not affected by CBAM soon, a domestic policy driven by it could still affect us.</li> <li>Following CBAM, the US government has proposed launching the "Clean Competition Act (CCA)" by 2024, which aims to boost American competitiveness while creating incentives for cleaner manufacturing. It will impose carbon border adjustment on energy-intensive imports whose carbon emissions exceed the average industrial emissions of the US. Initially, for each ton of carbon emission, the import will be levied by USD55.</li> <li>China commits to peaking carbon emissions by 2030 and achieving carbon neutrality by 2060. To reach the goal, one of the critical measures to cut gross emissions is a national ETS, which was officially inaugurated in July 2021. The power sector is the first sector to be regulated in the first phase. Other seven high-emission industries, including petrochemicals, chemicals, building materials, non-ferrous metals, papermaking, steel, power generation, and aviation, will be covered within 1-3 years, according to the Country's initial plan. Even though GIGABYTE does not belong to those industries, two-thirds of our production is based in China. As a result, we expect that our factories will be regulated in the long run, despite the lack of clarity about current rules.</li> </ol>
Technology	Relevant, always included	<p>Climate change is no longer just an environmental issue. It has sublimated to global political and trade matters. More than 90% of GIGABYTE's products are exported worldwide; thereby, we will face increasing challenges in reducing our products' carbon footprint substantially. To achieve that, we have to enhance the energy efficiency of production equipment and invest more in developing low-carbon technology to help our consumers and customers save power while using our products.</p> <p>Following are four examples stirring us to take urgent action on low-carbon technology transition:</p> <ol style="list-style-type: none"> <li>We receive more and more customer requirements asking for information on "product carbon footprint." In some cases, it even becomes a necessary criterion for supplier screening processes. To keep orders or get more orders, GIGABYTE has to strengthen product lifecycle analysis capability and optimize emission productivity and collaborate with suppliers to reduce product carbon footprints from upstream.</li> <li>As mentioned before, the EU implementing CBAM indicates that product carbon footprint will sooner or later become one of the tariff items in global markets, although electronic industries will not be levied CBAM certificates in the first phase. The US is likely to be the next market to implement carbon tariffs after the EU. Nearly 60% of GIGABYTE's revenue comes from these two markets. As a result, GIGABYTE will benefit from lower tariffs if the low-carbon transition succeeds; otherwise, the cost of exportation will increase, or in the worst case, we will lose market share.</li> <li>Taiwan government has committed to achieving net zero emissions by 2050 and targets to raise the proportion of renewable energy to 60-70% within the same timeframe (currently around 7-8%). To achieve this goal, the investment and construction of renewable energy and supporting electricity utilities must speed up. However, the cost of developing renewable energy in Taiwan is not low due to geographic restrictions, potential ecological disruption, and limited land appropriate for building equipment. That means the average electricity fees will rise sooner or later to reflect the actual costs.</li> <li>GIGABYTE has considered investing in renewable energy facilities or reaching available sources of green power to reduce our carbon emissions. There will be an increase in direct operational costs due to the new investment as well as the rising electricity costs resulting from the circumstances mentioned in point 3.</li> </ol>
Legal	Not relevant, included	<p>As mentioned above, GIGABYTE is currently not subject to existing energy consumption and emission reduction regulations. We are therefore not exposed to legal risks at this point. Nevertheless, GIGABYTE may be restricted as regulations become stricter and stricter. We use this risk type in our assessment as a reference to estimate the potential financial consequences of not meeting the legal requirements.</p>
Market	Relevant, always included	<p>With a rise in consumers' awareness of climate issues and environmental protection, there will be a shift in the preference of customers and consumers that subsequently affects the competitiveness as well as the demands of our products. As a result, we always consider this type of risk in our climate-related assessment. For instance, in recent years, we have received more requests from our B2B customers asking us to participate in their supplier CSR audits or fill out environmental activity questionnaires. This indicates that customers increasingly integrate environmental performance into their supplier screening and assessment processes. If we fail to meet their standard of environmental performance, we may lose opportunities for cooperation.</p>
Reputation	Relevant, always included	<p>The positive relationship between corporate reputation and environmental protection has become increasingly obvious in recent years. With the issue of climate change gaining importance in civil society and consumers and producers becoming more aware of the urgency to address climate change, businesses will gain reputations for taking action on climate change mitigation and adaptation. Conversely, continuously increasing emissions or not responding to the demand for cutting carbon footprint would discredit a business image. GIGABYTE is an OBM. Reputation and brand image are critical to us. Thus, climate-related risks that may affect our reputation are always included in our risk assessment. For example, we have noticed a significant shift in consumer preference from the sales that energy-saving electronic products have become more and more popular. If we do not keep up with the tendency, we will lose market competitiveness as well as product demands.</p>
Acute physical	Relevant, always included	<ol style="list-style-type: none"> <li>The headquarters of GIGABYTE is located in Taiwan. According to studies, about one-third of typhoons in the world occur in the north-western Pacific region, of which 13% pass by Taiwan. Furthermore, historical records show a northward shift in typhoon paths, meaning more typhoons will probably pass through Taiwan. Records also show that more typhoons will reach Taiwan at their strongest status, bringing destructive rainfalls and wind to the island.</li> <li>Besides typhoons, rainstorms have brought more and more threats to urban security in Taiwan in recent years. For example, a brief shower in the afternoon could cause flooding in the urban area, which affects company operations and employee safety.</li> </ol> <p>These examples show that the acute physical impacts of climate events on businesses in Taiwan, like GIGABYTE, are likely to get much worse than before. As a result, when assessing the impact of this risk type, we focus more on extreme weather events, such as typhoons and rainstorms, which have already affected us, causing our factories to shut down and posing safety and absenteeism threats to our workforce.</p>



	Relevance & inclusion	Please explain
Chronic physical	Relevant, always included	<p>GIGABYTE identifies the increase in average temperature and the increasingly uneven rainfall patterns as the two most relevant chronic physical impacts caused by climate change.</p> <p>1. Many research results and observations by the Central Weather Bureau, Taiwan, have shown a rising mean temperature for the past 100 years, 50 years, and 30 years in Taiwan. Particularly in the past two decades, we saw an increasing frequency of temperature extremes. The rising temperature in summer means increasing energy consumption for process cooling and air conditioning. As mentioned before, the power price is very likely to rise due to Taiwan's energy transition policy (In fact, the price has increased by around 25% since 2022). These would add up to our operation cost.</p> <p>2. Because of the steep terrain and highly uneven distribution of rain seasons and regions, Taiwan is one of the countries facing severe water shortages in the world, even though it is also one of the rainiest countries. In addition, precipitation patterns become increasingly uncertain and extreme, so the severity of the impact is increasing. For instance, Taiwan is continually encountering large-scale droughts that used to happen once in decades, forcing local governments to take strict water restriction measures.</p> <p>3. GIGABYTE conducts a self-research on water risks along our supply chain with consideration that all our manufacturing bases and most of our key large 1-tier suppliers are located in Taiwan or the coastal regions in China. The assessment finds that water pressure along our supply chain is relatively high, resulting from extreme climate events and uneven distribution of precipitation.</p> <p>These chronic physical risks already affect our operation, although not too significant. Therefore, we need to include them in our risk assessment.</p>

## C2.3

### (C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

## C2.3a

### (C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

#### Identifier

Risk 1

#### Where in the value chain does the risk driver occur?

Direct operations

#### Risk type & Primary climate-related risk driver

Current regulation	Carbon pricing mechanisms
--------------------	---------------------------

#### Primary potential financial impact

Increased indirect (operating) costs

#### Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

#### Company-specific description

Taiwanese government passed the "Greenhouse Gas Reduction and Management Act" in July 2015, which sets a national GHG reduction goal to cut the gross GHG emission of Taiwan shall by 50% in 2050 compared with the level of 2005. In addition, Taiwan voluntarily submitted its Intended Nationally Determined Contribution (INDC) with the same target in the same year. However, as extreme climate events have become more frequent and severe worldwide in recent years, many countries, regions, and corporates have declared a climate emergency and committed to net zero-emission targets. As a result, Taiwan's "Greenhouse Gas Reduction and Management Act" can no longer cope with the precarious climate change. Furthermore, Taiwanese businesses will likely lose competitiveness due to global economics pursuing a zero-carbon economy. Thus, in January 2023, the Taiwan Government amended and renamed it the "Climate Change Response Act." The amendment of the Act has two critical implications for businesses in Taiwan, including legislating achieving net zero by 2050 as a law and launching a domestic carbon fee mechanism.

In the first phase, businesses with direct emissions (scope 1 emissions) higher than 25,000 t-CO<sub>2</sub>e will be affected. Most of GIGABYTE's emissions come from scope 2 emissions, and the total emissions of every single site do not reach the 25,000-ton level, so we do not expect to be affected by the new regulation too soon. However, the Act and related rules may become stricter and probably will consider controlling scope 2 emissions in the next phase if the integral situation shows a necessity for doing so. We can foresee the tendency of change yet cannot be sure of when and how exactly the regulations are going to change; therefore, we see it as a risk.

#### Time horizon

Medium-term

#### Likelihood

Likely

#### Magnitude of impact

Medium

#### Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

#### Potential financial impact figure (currency)

3246009

#### Potential financial impact figure – minimum (currency)

<Not Applicable>

#### Potential financial impact figure – maximum (currency)

<Not Applicable>

#### Explanation of financial impact figure

According to the draft proposed by the Environmental Protection Administration last year, the carbon Fee rate will be levied at least TWD300 per metric ton of emissions.

However, according to an investigation by Greenpeace, many businesses think that the fee shall fall to TWD900 per metric ton. The too-low carbon fee will not help companies to avoid carbon taxes while exporting products to the countries that levy carbon taxes upon imported products. Taking CBAM in the EU as an example, its carbon price level refers to the average of all auctions of EU ETS allowances, of which the price level has once risen to EUR100 per metric ton this year (2023), equivalent to TWD3,300 per metric ton. The government has not decided the price level of the carbon fee so far but says it will not rule out our reference to international carbon price levels.

The gross emissions of GIGABYTE sites in Taiwan in 2022 were 10,820.03 t-CO<sub>2</sub>e. The scope covers the Headquarters, Nanping Factory, and the Silicon Valley Offices, where several substantial subsidiaries operate. If the domestic carbon fee is put into practice and the price level is set at TWD300 per t-CO<sub>2</sub>e, the financial impact would be TWD3,246,009.

### Cost of response to risk

2000000

### Description of response and explanation of cost calculation

1. Strategies: Continue the GHG emission inventory annually, invest manpower in following the regulation change and the Green Sustainable Development Committee serves as the gatekeeper, and budget annually for encouraging business units and employees to dedicate to energy saving and emission reduction.

2. Actions:

2.1 Set a company-wide goal of emission reduction and carry out ISO 14064 GHG emission inventory annually. The result of the inventory is certificated by a third party. Each year a yearly review of GHG emissions is provided to the Sustainable Development Committee.

2.2 The "Sustainability Fund" was launched in 2019, which budget comes from the money saved from cutting energy consumption, water use, and generated waste in the previous year. It aims to provide monetary feedback and encourage factories, departments, and individual employees that achieve cutting emissions or propose ideas for reducing energy consumption, water use, and waste.

2.3 The Green Sustainable Development Committee ensures the internal sustainability strategies and measures are functioning properly. These focuses include risk identification and management. As a potential risk becomes very likely to influence our operation and benefits, it will be put onto the round table and the committee will decide subsequent responses and actions.

2.4 The Sustainable Development Office invests manpower to continuously monitor the progress of regulations while keeping an eye on the global tendency after the new climate agreement was passed.

2.5 By participating in forums and conferences discussing issues associated with the post-Paris Agreement trend and low-carbon technology, we would be much able to foresee the future direction and prepare for possible changes.

3. Explanation of cost of response:

3.1 GIGABYTE has implemented GHG inventory annually since 2010, the cost is around TWD200,000 per year.

3.2 We need personnel to manage the risk, indicating that the personnel cost would rise. Currently, the average salary of an engineer at a basic level in GIGABYTE is around TWD1,000,000 per year.

3.3 The budget for the "Sustainability Fund" in 2023 is TWD800,000.

3.4 As for the cost derived from measures in order to follow the new rules, it is not calculated yet as the details of the new acts are still unclear.

### Comment

#### Identifier

Risk 2

#### Where in the value chain does the risk driver occur?

Direct operations

#### Risk type & Primary climate-related risk driver

Current regulation	Other, please specify (Enhanced emissions-reporting obligations)
--------------------	------------------------------------------------------------------

#### Primary potential financial impact

Increased indirect (operating) costs

#### Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

#### Company-specific description

The Taiwan Financial Supervisory Commission (FSC) released the Roadmap for the Sustainable Development of Listed Companies in March 2022, which stipulates that listed companies must take inventory of and disclose their greenhouse gas inventory no later than 2027 and obtain external verification of their emission data no later than 2029. Moreover, the inventory information shall be identical in scope to that of their consolidated financial statements.

GIGABYTE has conducted a greenhouse gas emissions inventory since 2009. Our latest inventory covers five main operational areas: Headquarters, three factories in Taiwan, Chain, and the Taipei Silicon Valley Office, where our influential subsidiaries are based. In terms of consolidated revenue, the inventoried scope accounts for 94% because it is not easy to access necessary data that are qualitatively sufficient for the emissions verification standard for some subsidiaries, most of which are overseas. Although challenging, GIGABYTE will have to extend its GHG inventory scope to all affiliated enterprises included in our consolidated financial reports in order to comply with FCS regulations. Thus, we consider it a risk that will occur quickly.

In addition to the requirement for greenhouse gas emission inventories, FCS will likely revise its internal control requirement targeting listed companies for further sustainability information in response to the International Sustainability Standards Board (ISSB) planning to issue the first two IFRS Sustainability Disclosure Standards in 2023. GIGABYTE will then need to conduct more detailed climate-related information collection, systematic analysis, and comprehensive disclosures.

**Time horizon**

Short-term

**Likelihood**

Very likely

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

&lt;Not Applicable&gt;

**Potential financial impact figure – minimum (currency)**

10000000

**Potential financial impact figure – maximum (currency)**

200000000

**Explanation of financial impact figure**

According to the "Securities and Exchange Act," a company that makes false statements on financial reports or any other business documents as required to be produced in compliance with acts or regulations prescribed by the Competent Authority shall be punished with imprisonment for not less than one year and not more than seven years and, in addition, a fine of not more than TWD20 million may be imposed. In addition, a Sustainability Report is seen as one of the business documents belonging to the "Securities and Exchange Act." When the essential content of the business documents contains misrepresentations or nondisclosures, the issuer shall be punished with imprisonment not less than three years and not more than ten years, as well as a fine not less than TWD10 million and no more than TWD200 million. Therefore, listed companies that fail to meet FCS's emission inventory and reporting requirements will face a fine of up to TWD220 million in the most serious situation.

**Cost of response to risk**

11192000

**Description of response and explanation of cost calculation**

1. Strategies: Continually cut electricity consumption by various measures and the Sustainable Development Committee serves as the supervisor.

2. Actions:

2.1 Continually implement measures following the strategies of the 'Green Action Plan'.

2.2 Carry out GHG emission inventory and get certified by a third party every year. The inventory is always overseen by the Sustainable Development Committee and the Sustainable Development Office.

2.3 To reduce electricity consumption and improve energy efficiency, we have implemented several actions such as replacing old facilities with more energy-saving ones and holding several internal education activities to raise employees' environmental awareness and stimulate their behaviour change.

2.4 Introduce new tools to help us examine other emission sources that may have been missed in the past. For instance, we introduced MFCA to Nanping Plant in 2018 to help find out emission hot spots within the manufacturing processes that probably can be reduced.

2.5 Introduce a new management method to stimulate power saving. For instance, we launched the "Sustainability Fund" project in 2019. The budget of the Fund comes from the energy cost saved from the previous year, and the Fund will be used to reward the factories that cut the most emissions, the departments, or individual employees that develop excellent energy-saving projects or low-carbon products. By promoting the Fund, we hope we can reduce more energy consumption in the future.

3. Explanation of cost of response:

3.1 The financial outgoings for replacing old equipment with more energy-saving and energy-efficient ones vary year by year, depending on the budget as well as the urgency level. The total cost of renewing equipment in 2022 was around TWD9,962,000.

3.2 As for the organization of internal education activities, the expenditure is between TWD250,000 per year.

3.3 The fee for introducing MFCA to the Nanping factory is around TWD180,000.

3.4 The cost of running the committee and other associated reporting processes is relatively low as the mechanism has been proceeding for years.

3.5 The budget of the Sustainability Fund in 2023 is TWD800,000.

**Comment****Identifier**

Risk 3

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Current regulation	Other, please specify (Enhanced renewable energy development obligations)
--------------------	---------------------------------------------------------------------------

**Primary potential financial impact**

Increased indirect (operating) costs

**Climate risk type mapped to traditional financial services industry risk classification**

&lt;Not Applicable&gt;

**Company-specific description**

To mitigate carbon emissions and rely more on cleaner sources of energy, the Taiwan government has set up a goal of increasing the ratio of power generated from

renewable energy from the current 7-8% to 20% in 2025. Furthermore, Taiwan's Pathway to Net-Zero Emissions in 2050, released in March 2022, aims to increase the proportion of electricity generated from renewable sources to 60-70% by 2050. To achieve these goals, the "Renewable Energy Development Act," issued by the Ministry of Economic Affairs, requires power users who sign a chartered capacity of more than 5,000 kW with the electricity retailing utility enterprise to self-generate or purchase 10% of their power from renewable sources. The compulsory user of renewable energy can fulfill its obligation by installing renewable energy generation equipment, installing energy storage equipment, purchasing Renewable Energy Certificates (RECs), or paying money substitution (TWD 4/kWh).

So far, GIGABYTE has not been included in the lists that are subject to the Acts. Our energy consumption capacity is below the regulated levels. However, as these regulations are reviewed and adjusted regularly according to the global trends as well as the pressures from value chains and industries, the requirements may become stricter in the future and GIGABYTE will be likely to become restricted. Moreover, the electricity utilities have pressure from the government's goal and thus are investing in various renewable energy plans. These costs will unavoidably reflect on the power fees in the future. If GIGABYTE keeps relying on the power provided by the electricity utilities instead of developing our own renewable energy sources, our expenditure on purchased electricity would be likely to go higher and higher.

In short, we consider these current regulations in our climate-related risk assessment.

**Time horizon**

Medium-term

**Likelihood**

Very likely

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

73149217

**Potential financial impact figure – maximum (currency)**

75717217

**Explanation of financial impact figure**

GIGABYTE's operation and manufacturing highly depend on electricity more than on other energy resources. In 2022, GIGABYTE's Headquarters and Nanping factory consumed 20,557 MWh of electricity. If GIGABYTE is obligated to ensure 10% of electricity use (2,056 MWh) is from renewable energy, we would need to invest in installing renewable energy generation equipment, purchasing RECs, or paying money substitution. The cost of the measures applicable to GIGABYTE is estimated as follows:

1. Based on our internal assessment, the maximum installed solar capacity on the roof of Nanping Factory is around 1,088 kW, and the total costs of the solar electric system will be around TWD 72,293,217.
2. Following above, the annual average power generation is estimated at 1,200 MWh. This means we still need to purchase 856 MWh in order to comply with the 10% requirement, and this could be fulfilled by:
  - 2.1 The average price of renewable power in Taiwan is TWD5.5 per kWh, around TWD2.8 higher than unrenewable electricity per kWh. Purchasing 856 MWh of renewable electricity from external sources would cost us an additional TWD 2,396,800 per year.
  - 2.2 The price of the Taiwan Renewable Energy Certificate (T-REC) ranges between TWD1 to TWD2.2 per kWh. To purchase 856 MWh of T-RECs, we would need to pay from TWD 856,000 to TWD 1,883,200 per year.
  - 2.3 If we choose to pay money substitution, it would cost us TWD 3,424,000 per year.

To sum up, the total financial cost will then be ranged from TWD 73,149,217 to TWD 75,717,217.

**Cost of response to risk**

11192000

**Description of response and explanation of cost calculation**

1. Strategies: Continually cut electricity consumption by various measures and the Sustainable Development Committee serves as the supervisor.
2. Actions:
  - 2.1 Continually implement measures following the strategies of the 'Green Action Plan'.
  - 2.2 Carry out GHG emission inventory and get certified by a third party every year. The inventory is always overseen by the Sustainable Development Committee and the Sustainable Development Office.
  - 2.3 To reduce electricity consumption and improve energy efficiency, we have implemented several actions such as replacing old facilities with more energy-saving ones and holding several internal education activities to raise employees' environmental awareness and stimulate their behaviour change.
  - 2.4 Introduce new tools to help us examine other emission sources that may be missed in the past. For instance, we introduced MFCA to Nanping Plant in 2018 to help find out emission hot spots within the manufacturing processes that probably can be reduced.
  - 2.5 Introduce a new management method to stimulate power saving. For instance, we launched the "Sustainability Fund" project in 2019. The budget of the Fund comes from the energy cost saved from the previous year, and the Fund will be used to reward the factories that cut the most emissions, the departments, or individual employees that develop excellent energy-saving projects or low-carbon products. By promoting the Fund, we hope we can reduce more energy consumption in the future.
3. Explanation of cost of response:
  - 3.1 The financial outgoings for replacing old equipment with more energy-saving and energy-efficient ones vary year by year, depending on the budget as well as the urgency level. The total cost of renewing equipment in 2022 was around TWD9,962,000.

3.2 As for the organization of internal education activities, the expenditure is between TWD250,000 per year.

3.3 The fee for introducing MFCA to the Nanping factory is around TWD180,000.

3.4 The cost of running the committee and other associated reporting processes is relatively low as the mechanism has been proceeding for years.

3.5 The budget of the Sustainability Fund in 2023 is TWD800,000.

## Comment

### Identifier

Risk 4

### Where in the value chain does the risk driver occur?

Direct operations

### Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms
---------------------	---------------------------

### Primary potential financial impact

Increased direct costs

### Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

### Company-specific description

There will be more and more regulations requesting a higher standard of carbon reduction, energy efficiency, waste recovery, and other environment-related issues at local, national, and regional levels. Most of GIGABYTE's products are sold internationally, and we will be likely to be affected by some of these emerging regulations, even though the rules and specific measures have yet to become clear so far.

1. EU will implement the Carbon Border Adjustment Mechanism (CBAM) in 2023 under its Green Deal proclaimed in 2020. To prevent carbon leakage, the products with a high carbon footprint upstream such as cement, electricity, iron, and steel will be taxed while imported to the EU. Particularly the cost of products from countries that do not levy a carbon tax will definitely increase. GIGABYTE's main products are not subject to CBAM so far, and we expect CBAM will not affect GIGABYTE directly before 2030. However, we still take it into account because apparently carbon footprint will become one of the critical and common product information that needs to be disclosed and reported while selling our products.

2. China commits to peaking carbon emissions by 2030 and achieving carbon neutrality by 2060. To reach the goal, one of the critical measures to cut gross emissions is a national ETS, which was officially inaugurated on 16 July 2021. The power sector is the first sector to be regulated in the first phase. Other seven high-emission industries, including petrochemicals, chemicals, building materials, non-ferrous metals, papermaking, steel, power generation, and aviation will be covered within 1-3 years. China is one of GIGABYTE's best-selling distribution areas and is where our two other factories are located. Although GIGABYTE does not belong to those industries, we believe that other industries will be controlled by the new system and its related regulations sooner or later. If we become subject to the additional taxes and the obligation to be involved in cap and trade, our operating costs will likely increase.

### Time horizon

Long-term

### Likelihood

Likely

### Magnitude of impact

High

### Are you able to provide a potential financial impact figure?

Yes, an estimated range

### Potential financial impact figure (currency)

<Not Applicable>

### Potential financial impact figure – minimum (currency)

332501031

### Potential financial impact figure – maximum (currency)

3150000000

### Explanation of financial impact figure

1. The EU CBAM certificates are levied based on the carbon footprint of imported products. Despite that electronic products will not be levied in the first phase, we still estimate the potential financial impact on GIGABYTE under the assumption that all of our products sold to the EU are obligated to purchase CBAM certificates. According to our product carbon footprint calculation and analysis, carbon content before use is around 63 kg-CO<sub>2</sub>e per piece of motherboard, 31 kg-CO<sub>2</sub>e per piece of VGA, 130 kg-CO<sub>2</sub>e per laptop, and 442 kg-CO<sub>2</sub>e per piece of our server. According to the sales statistic in 2022, the total cradle-to-gate carbon footprint of the products sold to EU market was 125,472 t-CO<sub>2</sub>e. Given that the CBAM certificate fee is EUR 80 (around TWD 2,650) per metric ton of CO<sub>2</sub>e, GIGABYTE would have to pay approximately TWD332,501,031 for purchasing sufficient CBAM certificates for the year.

2. The financial implication derived from the new regulations in China will be quite considerable to us because two of our major factories are in China. The operating cost would increase as soon as we are subject to the cap and trade system. The amount of financial loss from the regulations is still unclear as so far there are no sufficient criteria for us to estimate. However, what can be estimated is that if the two factories in China temporarily shut down because of failing to meet the mandates by China government. It would result in at least a loss of TWD10 million in output value per day, equivalent to TWD3,000 million per year. Besides, the loss of manpower cost is around TWD150 million per year.

### Cost of response to risk

2590500

### Description of response and explanation of cost calculation

1. Strategies: Invest manpower in following the regulation change and the Sustainable Development Committee serves as the gatekeeper, and conduct the calculation of the carbon footprint of all products.

## 2. Actions:

2.1 The Sustainable Development Office invests exclusive manpower in continuously monitoring any potential changes in regulations with regards to trading, carbon reduction policies, environmental protection policies, and so on.

2.2 The Sustainable Development Committee identifies risks and takes responses accordingly to ensure the internal sustainability strategies and measures functioning properly.

2.3 Carry out the product carbon footprint calculation for all main types of GIGABYTE's products such as motherboards and laptops. An internal Product Carbon Footprint Calculation System (LCA System) was established by the end of 2018. The method is based on the methodology suggested by the EPA of Taiwan, and the emission factors refer to the database of SimaPro. Moreover, we continue to update the database in order to improve the system's accuracy, comprehensiveness, and credibility. Verification by a third party in the future is also taken into account.

## 3. Explanation of cost of response:

3.1 The manpower cost of managing the risk is around TWD1,000,000 per year.

3.2 The cost of Product carbon footprint calculation and LCA System is at least TWD1,500,000 including manpower cost and the expenditure on purchasing and training. Another TWD 90,500 is required each year to renew the software.

3.3 As for the cost derived from measures in order to follow the new rules, it is not calculated yet as the details of the new act are still unclear.

### Comment

GIGABYTE's Product Environment Reports mentioned in 2.4 above can be found at our CSR Website: <https://csr.gigabyte.tw/en/extended-product-responsibility-en>

### Identifier

Risk 5

### Where in the value chain does the risk driver occur?

Direct operations

### Risk type & Primary climate-related risk driver

Technology	Transitioning to lower emissions technology
------------	---------------------------------------------

### Primary potential financial impact

Decreased revenues due to reduced demand for products and services

### Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

### Company-specific description

With a global consensus on keeping the temperature rise well below 1.5 °C compared to the pre-industrialized period, there would be more and more regulations and demands focusing on disclosure or standard of product's carbon footprint. More than 95% of GIGABYTE's products are exported. That means we would face increasing demands from customers or the markets we put our products in to ask us to present carbon footprint data for products. For example, in recent years, many potential customers have begun to include "product carbon footprint" as a necessary criterion in their processes of supplier selection. To get the order, GIGABYTE has to analyze and disclose the carbon footprint of our products. Moreover, this selection mechanism reflects that low-carbon products are much more competitive. The lower the product's carbon footprint, the higher the chance of winning an order.

The quantity of product carbon footprint will also affect the demands of GIGABYTE's products. If the carbon content of our products is higher than the products of competitors, we would have fewer opportunities to get orders from customers. Besides, we will need to pay more carbon tariffs in order to export products to certain markets (e.g. EU CBAM). That means we have to keep reducing carbon emissions from R&D and manufacturing processes. GIGABYTE successfully developed and launched an internal "Product Carbon Footprint Calculation System" in 2017. The system assists us in calculating the carbon footprint of each product at the design and development stages. However, the platform is based on a simplified methodology of LCA in order to lower the complexity and difficulty of using it. Besides, it has not been verified through an internationally accepted standard, like ISO 14067, by a third party. Therefore, even if the system has been set, the uncertainty of solving this risk remains high.

### Time horizon

Medium-term

### Likelihood

Very likely

### Magnitude of impact

High

### Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

### Potential financial impact figure (currency)

6211000000

### Potential financial impact figure – minimum (currency)

<Not Applicable>

### Potential financial impact figure – maximum (currency)

<Not Applicable>

### Explanation of financial impact figure

The risk could affect our sales rate as well as revenue. In 2022, exports accounted for 97.1% of our revenue. Among different markets, we assume that EU and North American markets place a greater emphasis on sustainability and low-carbon performance. Their governments have implemented or are planning to implement management regulations on imported products with high carbon footprints. Therefore, our revenue from these two markets will be most likely affected. The number in 2022 was TWD62.11 billion, which accounted for 57.9% of the year's total revenue.

**Cost of response to risk**

13152500

**Description of response and explanation of cost calculation**

1. Strategies: Conduct the calculation of the carbon footprint of all products and publicize the data to consumers, and enhance the energy efficiency of operation and production processes to reduce product carbon footprint in the assembly stage.

2. Actions:

2.1 Continually invest in improving processing equipment and stimulating assembly line automation for the purpose of reducing emission intensity of production and business operation.

2.2 Carry out the product carbon footprint calculation for all main types of GIGABYTE's products such as motherboards and laptops. An internal Product Carbon Footprint Calculation System (LCA System) was established in 2018. The method refers to the Taiwan EPA and the emission factors are from the database of SimaPro. Moreover, the database is updated regularly to ensure accuracy, comprehensiveness, and credibility. Verification by a third party in the future is also taken into account.

2.3 The "Sustainability Fund" was launched in 2019, which budget comes from the money saved from cutting energy consumption, water use, and generated waste in the previous year. It aims to provide monetary feedback and encourage factories, departments, and individual employees that achieve or propose ideas for reducing energy consumption, water use, and waste.

2.4 GIGABYTE has disclosed Product Environmental Reports of several main product lines on our CSR website. The reports tell consumers about the impacts of the product on the environment such as climate change and air quality. Also, it includes recycling information to educate consumers on the proper way to recycle WEEE.

2.5 Invest manpower in following the progress of standards and regulations, and also maintain and conduct the product life cycle assessment system.

3. Explanation of cost of response:

3.1 The financial outgoings for replacing old equipment with more energy-saving and energy-efficient ones vary year by year, depending on the budget as well as the extent of urgency. The total cost of renewing equipment in 2022 was around TWD9,962,000.

3.2 The cost of Product carbon footprint calculation and LCA System is at least TWD 1,500,000, including manpower cost and the expenditure on purchasing and training. Another TWD 90,500 is required each year to renew the software.

3.3 The budget for the "Sustainability Fund" in 2023 is TWD800,000.

3.4 The manpower cost in following and managing the risk resulting from the relevant tendency is around TWD 800,000 per year.

**Comment**

GIGABYTE's Product Environment Reports mentioned in 2.4 above can be found at our CSR Website: <https://csr.gigabyte.tw/en/extended-product-responsibility-en>

**Identifier**

Risk 6

**Where in the value chain does the risk driver occur?**

Downstream

**Risk type & Primary climate-related risk driver**

Reputation	Shifts in consumer preferences
------------	--------------------------------

**Primary potential financial impact**

Decreased revenues due to reduced demand for products and services

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

The positive relationship between corporate reputation and environmental protection has become increasingly evident in recent years. We have seen a similar trend that businesses, no matter how large their scales are, could be put under a boycott by the public if they ignore environment-friendly principles like pollution avoidance and food safety. If the businesses are brand owners, their brand value and market cap would be influenced subsequently. As the climate change issue gains more importance in civil society, consumers concerned with the issue may change their preferences, such as intending to buy products with lower carbon footprints to decrease the environmental impacts of their behaviors. Also, while the number of companies that publish their CSR reports and disclose environment-related information to the public has kept increasing in recent years, consumers are more informed about which company is relatively environmentally friendly. They probably would intend to purchase products from it. Conversely, a producer that continues to provide harmful products or services will likely see a reduction in consumer demand.

GIGABYTE is an Original Brand Manufacturer (OBM). Brand value and consumer loyalty are very important to us. Consumers are the final users of our products, so their inclinations, interests, and feelings are all considered at the stage of product design and in our marketing policies. As a result, any change in consumer preference is essential to GIGABYTE.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

2236000000

**Potential financial impact figure – minimum (currency)**

<Not Applicable>

**Potential financial impact figure – maximum (currency)**

<Not Applicable>

**Explanation of financial impact figure**

GIGABYTE will lose market share and revenue if we fail to adapt and adequately meet the changing consumer preference. According to our previous experience, the change in consumer preference can reduce nearly 30% of revenue from a certain type of product. Furthermore, to regain our reputation, we have to not only meet the requirement and standards but also invest more in advertisement and disclosure. In 2022, the expenditure on marketing and service was around TWD960.7 million, and 30% of revenues from motherboards and graphic cards, two mainstream product types of GIGABYTE, was approximately TWD 21.4 billion. As a result, we estimate that the preference change of consumers can have an influence of TWD22.36 billion on our revenue.

**Cost of response to risk**

2231800000

**Description of response and explanation of cost calculation**

1. Strategies: Invest in product R&D to meet the market demands, disclose product environmental impact information to the public, and the Sustainable Development Committee serves as a supervisor and gatekeeper.

2. Actions

2.1 Each year, around 3% of the total revenue is dedicated to R&D to ensure our products are more market-favorable and user-friendly.

2.2 The Sustainable Development Committee holds monthly meetings to cope with the risks that are very likely to influence our operation and benefits. The committee will decide on subsequent responses and actions.

2.3 The "Sustainability Fund" launched in 2019 also provides monetary feedback to departments or individual employees who develop low-carbon products or green products. The better the product's sustainability, the higher the reward. We hope the Fund could stimulate more green ideas from employees and motivate the R&D department to design and create low-carbon and environmental-friendly products.

3. Explanation of the cost of response

3.1 The R&D and product design investment was TWD 2,23 billion in 2022, accounting for 2.1% of the annual revenue.

3.2 The manpower cost of researching the development of the market demands and consumer preference is up to TWD1,000,000 at the Sustainable Development Office.

3.3 The budget of the Sustainability Fund in 2023 is TWD800,000.

3.4 The cost of running the committee and other associated processes is relatively low as the mechanism has been proceeding for years.

**Comment**

**Identifier**

Risk 7

**Where in the value chain does the risk driver occur?**

Downstream

**Risk type & Primary climate-related risk driver**

Market	Changing customer behavior
--------	----------------------------

**Primary potential financial impact**

Decreased revenues due to reduced production capacity

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

As climate change gains more importance in civil society, not only consumers but also producers are more aware of the consequences if they fail to meet stakeholders' expectations and requirements on climate-related performance. It is common for companies to ask their suppliers to collaborate on tackling the climate crisis, such as setting a common goal, such as saving a certain amount of energy, obtaining certificates for reducing energy consumption or using renewable energy, or collecting environmental performance information for supplier assessment.

In recent years, GIGABYTE has also received more and more customer requirements that ask us to respond to questionnaires regarding environmental performance, social engagement, and corporate governance. Besides, some customers include "product carbon footprint" as a necessary criterion in their supplier screening processes. For instance, we have been asked to assess and provide the carbon footprint of 18 server product models since January 2023, which has already exceeded the total number of requests we received in 2021. To get the order, GIGABYTE has to analyze and disclose the carbon footprint of our products. The screening mechanism reflects that low-carbon products are much more competitive. The lower the product's carbon footprint, the higher the chance of winning an order.

With these significant changes in our customers' concerns about our product sustainability and CSR performance, we need to adequately respond to these customer requests in order to maintain demands from our downstream chain.

**Time horizon**

Short-term

**Likelihood**

Virtually certain

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**



Yes, a single figure estimate

**Potential financial impact figure (currency)**

15100000000

**Potential financial impact figure – minimum (currency)**

<Not Applicable>

**Potential financial impact figure – maximum (currency)**

<Not Applicable>

**Explanation of financial impact figure**

If we fail to respond to customers' requirements on environmental performance and disclosure, orders will fall, subsequently influencing our sales amount and revenue. In 2022, around 18.7% of our revenue came from B2B products, which implied that the financial impact of this risk type could be up to TWD 20.1 billion

**Cost of response to risk**

2242552500

**Description of response and explanation of cost calculation**

1. Strategies: Invest in product R&D to reduce the environmental impacts of products, make great efforts to cut the emissions emitted from the company, and enhance supply chain management to reduce the possibility of problematic products.

2. Actions:

2.1 Around 3% of our revenue is dedicated to R&D each year. We aim to improve products by reducing carbon footprint, enhancing energy efficiency, and decreasing waste from packaging.

2.2 Set a group-wide target of carbon reduction and carry out several energy-saving projects and activities at all the sites. The total carbon emission has decreased by 38.85% in 2021 since 2009.

2.3 Voluntarily adopt emission management and analysis tools such as LCA and Scope 3 emission inventory to help us with fulfilling environmental responsibility. We completed conducting a life cycle analysis of all main types of GIGABYTE's products in 2018. We also share this information by publishing "Product Environment Reports" on our CSR Website. The consumers and stakeholders can know the extent of the impact the product will have to climate change, air quality, ecological impact, etc. Moreover, it includes recycling information to educate consumers about the proper way to recycle WEEE. Additionally, 11 categories of Scope 3 emissions related to GIGABYTE are calculated based on the methodology provided by the GHG Protocol.

2.4 Continue to carry out annual supplier audit and evaluation processes. GIGABYTE has done it for 9 years and has seen a trend that more and more major suppliers recognize the purpose of the evaluation.

3. Explanation of cost of response:

3.1 The investment in R&D and product design was around TWD2.23 billion in 2022, accounting for 2.1% of the annual revenue.

3.2 The investment in improving manufacturing processes and replacing equipment with more energy-saving and energy-efficient ones varies year by year, depending on the budget as well as the extent of urgency. The total cost of renewing equipment in 2021 was around TWD 9,962,000.

3.3 The cost of Product carbon footprint calculation and LCA System is at least TWD1,500,000, including manpower cost and the expenditure on purchasing and training. Another TWD90,500 is required each year to renew the software.

3.4 The manpower cost of Scope 3 emission inventory and value chain management is around TWD1,000,000 per year.

**Comment**

GIGABYTE's Product Environment Reports mentioned in 2.3 above can be found at our CSR Website: <https://csr.gigabyte.tw/en/extended-product-responsibility-en/>

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**Identifier**

Risk 8

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Acute physical	Cyclone, hurricane, typhoon
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**Primary potential financial impact**

Decreased revenues due to reduced production capacity

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

About one-third of typhoons occur yearly in the north-western Pacific region, out of which 13% pass by Taiwan. Historical records show that there is a trend that more typhoons pass through Taiwan, as we have seen a northward shift in the average path of typhoons. Records also show that there is a trend of typhoons reaching Taiwan at their strongest in the aspect of rain and wind. Typhoon Megi attacking Taiwan in September 2016, forced most businesses and factories to call off work for two days, leading to immense financial losses. As typhoons become more and more severe, they may bring damage, power shortage, and casualties, which will affect our operation. Moreover, some of the typhoons in the north-western Pacific reach China's coasts, with more incidences in the south than in the north. Our suppliers in China, as a result, will be affected.

**Time horizon**

Short-term

**Likelihood**

More likely than not

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

2900000

**Potential financial impact figure – minimum (currency)**

<Not Applicable>

**Potential financial impact figure – maximum (currency)**

<Not Applicable>

**Explanation of financial impact figure**

Regarding production disruption, typhoons may result in a loss of thousands to millions of dollars per day. Taking Nanping Factory as an example, extreme climate events leading to factory shutdown could cause a cost of at least TWD3,000,000 per day due to the loss of productivity. In addition, in Taiwan, the government would call off work if a typhoon is sure to encroach upon Taiwan. When it happens, companies shall still pay each employee a one-day salary even though productivity is zero. For GIGABYTE, the amount of the payment is at least TWD1,450,000 per day. In recent years, on average, Taiwan has been influenced by two typhoons per year, so we assume that GIGABYTE will likely face at least 2-day shut down every year because of increasingly severe typhoons. That is, GIGABYTE would confront a loss of TWD2.9 million every year.

**Cost of response to risk**

260000

**Description of response and explanation of cost calculation**

1. Strategies: Formulate an emergency management procedure for typhoons, and allocate supply chain risk by increasing the diversification of suppliers.

2. Actions:

2.1 Establish the 'Risk Emergency Management Procedure' based on ISO 14001 standards. The procedure helps to respond to various emergencies immediately and effectively and to prevent or mitigate the negative impacts that may cause. Responding measures for typhoons, storms, and floods are included in the document, and a detailed procedure of how to cope with the emergencies is provided. Moreover, the document also provides a guide to reallocating productivity if partial facilities are damaged during the disaster.

2.2 Lower supply chain risks by working on diversifying our suppliers, ensuring that there are always substitutes to supply us with the components we need should an unexpected event occurs.

3. Explanation of cost of response:

3.1 The costs associated with these management actions are relatively low as these are part of the ISO 14001 environmental management standard. The validity period of ISO14001 is 3 years, thus re-certification is required every 3 years. The certification cost is about TWD200,000.

3.2 On average, 2 typhoons hit Taiwan per year. The additional expense of manpower for examining the extent of damage during the disaster and monitoring the progress of recovery after the disaster is around TWD3,000 per person per day, and we assume that at least 10 persons are needed to complete the process.

**Comment**

**Identifier**

Risk 9

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Chronic physical	Changing temperature (air, freshwater, marine water)
------------------	------------------------------------------------------

**Primary potential financial impact**

Increased indirect (operating) costs

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

Research and observations by the Central Weather Bureau, Taiwan, have shown a rising mean temperature for the past 100 years, 50 years, and 30 years in Taiwan. Particularly in the past two decades, we saw an increasing frequency of temperature extremes, including extremely high temperatures in summer and speedy freezing temperatures in winter. According to the downscaling data based on the SSP5-8.5 model analyzed by Taiwan Climate Change Projection Information and Adaptation Knowledge Platform, the mean temperature in the summertime will increase by 0.8°C between 2021 and 2040 and by 1.6°C between 2041 and 2060 in New Taipei City and Taoyuan, where GIGABYTE's Headquarters and most of our subsidiaries are based. The hotter, the more electricity we will consume for cooling. Moreover, extreme heat waves may also lead to employee health problems.

In accordance with the company-specific description in Risk 3, the cost of electricity will likely increase due to increased investments in renewable energy development by the electricity utilities in the near future. Ideally, the percentage of electricity generated by renewable energy sources will rise from 7-8% to 20% by 2025 and to 60-70% by 2050, according to current Taiwan's energy transition roadmap. GIGABYTE will soon encounter the risk that energy expenditure will increase because, on the one hand, electricity use for cooling and air conditioning will increase in response to the warming climate; on the other hand, electricity prices will continue to rise.

**Time horizon**

Medium-term

**Likelihood**

Virtually certain

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

5883781

**Potential financial impact figure – maximum (currency)**

82265499

**Explanation of financial impact figure**

The potential financial implication that temperature extremes will cause includes:

1. The too-warm temperature will disrupt the production machine due to overheating. To avoid the problem, we need to invest more in improving cooling facilities and air-conditioners in factories. In 2022, the investment related to HVAC equipment in factories was around TWD1,160,000.
2. Heatwaves affect employees' health; thus, improving the air-conditioning system of offices is also crucial. In 2022, the cost of replacing air conditioners was TWD1.15 million.
3. Besides investment in hardware, our electricity expenditure will also increase. According to our scenario analysis based on SSP5-8.5 scenario, our total power cost will rise by TWD4,035,311 in 2030 and by TWD82,265,499 in 2050 purely due to the increasing mean temperature in summer. Even under SSP2-2.6 scenario, the total power cost will reach TWD3,573,781 by 2030 and TWD20,625,975 by 2050. For details of the scenario analysis, please refer to C3.2a.

Based on the above experiences and analyses, we expect the risk will lead to a financial implication between TWD5,883,781 and TWD82,265,499 per year.

**Cost of response to risk**

15000000

**Description of response and explanation of cost calculation**

1. Strategies: Renovate the air conditioners to improve energy efficiency, formulate an emergency management procedure for extreme climate events, and green the rooftop to lower indoor temperature.

2. Actions:

2.1 Replace traditional and old air conditioners with inverter air conditioners at all the sites to improve the electrical efficiency.

2.2 Establish the 'Risk Emergency Management Procedure' based on ISO 14001 standards. The procedure helps to respond to various emergencies immediately and effectively and to prevent or mitigate the negative impacts that may cause. Responding measures for any emergency are included in the document, and detailed procedures on how to cope with different urgent situations are provided.

2.3 Built the "G-HOME Sustainable Eco-roof" on the rooftop of the headquarters in 2013. The indoor temperature of the highest floor is reduced by 2.5°C in the summertime because the rooftop is covered with soil and plants. In 2017, Nanping Factory also built its green roof in order to enhance the self-cooling ability of the building.

3. Explanation of cost of response:

3.1 The financial outgoings for equipment replacement or renewal vary each year, depending on the budget as well as the cost of projects. The total expenditure on electrical facilities, including air conditioners, in 2022 was TWD9,962,000.

3.2 The additional expense of manpower for examining the extent of damage during the disaster and monitoring the progress of recovery after the disaster is around TWD 3,000 per person per day, and we assume that at least 10 persons are needed to complete the process.

3.3 The investment in the eco-roof was TWD 4,770,000 million, and the cost of maintaining and managing the eco-roof is around TWD238,000 per year.

**Comment**

**Identifier**

Risk 10

**Where in the value chain does the risk driver occur?**

Upstream

**Risk type & Primary climate-related risk driver**

Chronic physical	Changing precipitation patterns and types (rain, hail, snow/ice)
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**Primary potential financial impact**

Increased indirect (operating) costs

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

1. According to the official study of climate change in Taiwan, we have seen a decrease in total precipitation days in a year for the last 100 years, 50 years, and 30 years; on the other hand, we have seen more days of heavy precipitation and fewer days of light precipitation. The report predicts that that trend will continue. The implication of the uneven distribution of rain and the change in precipitation trend is that more flooding events may occur, and given the capacity of water dams, water shortage may also occur.

Unfortunately, these undesired situations are no longer research but reality. Taiwan experienced its worst drought in decades in the spring of 2021; however, the record was broken again just two years later. Taiwan faced a severer water crisis in the spring of 2023. The capacity of all main reservoirs in southern Taiwan dropped to 20% below, causing a shortage of water supply to agriculture and industries in several important science parks. The water shortage has not directly impacted GIGABYTE's operation. However, it may pose threats to our suppliers located in southern Taiwan. Therefore, we regard this as one of the potential risks to our operation and production.

2. Our main first-tier suppliers are located in Dongguan and Ningbo, China, with second-tier suppliers located in countries bordering seas, such as Thailand and Japan. According to the World Bank study on global natural disaster hotspots, China and Thailand are at high risk of mortality and GDP losses in terms of flooding. Also, GIGABYTE conducts a water pressure risk analysis to analyze the extent of water risk in the regions in which our operational bases, branch companies, and top 100 1-tier suppliers are located. The latest analyzed results shows that most research sites are located the areas with medium to extremely high water pressure.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

76705995000

**Potential financial impact figure – minimum (currency)**

<Not Applicable>

**Potential financial impact figure – maximum (currency)**

<Not Applicable>

**Explanation of financial impact figure**

1. Taking Nanping Factory as an example, extreme storms and floods leading to factory shutdown could cause at least a loss of TWD3,000,000 per day. Averagely, the factory produces 10,000 pieces of motherboard per day. Shutting down leads to a direct loss of productivity, and the Company still has to pay salaries to the employee although they do not come to work. The workforce cost per day is around TWD1,450,000. In addition, factories have to work extra hours to compensate for lost production during shutdowns, resulting in additional manpower costs and energy fees. Nanping Factory's electricity use costs at least TWD95,000 per day according to its electricity bills in 2022. Therefore, we estimate that shutting down a factory for one day would cost TWD5,995,000.

2. With a value of approximately TWD 76.7 billion in 2022, 92% of the total procurement amount was sourced from critically first-tier suppliers in Taiwan, China, and Southeast Asia. That ratio has significantly increased in the past few years due to restructuring global supply chains driven by epidemics and geopolitics. Yet, these areas are facing increasingly rigorous water pressures as precipitation type changes. The more GIGABYTE relies on suppliers with high water pressure, the more financial implications we would face from procurement risks.

**Cost of response to risk**

3840000

**Description of response and explanation of cost calculation**

1. Strategies: Formulate an emergency management procedure for storms and flooding, drill the factories in a water shortage, establish water recycling systems in factories, and allocate supply chain risk by increasing the diversification of suppliers.

2. Actions:

2.1 Establish the 'Risk Emergency Management Procedure' based on ISO 14001 standards. The procedure helps to respond to various emergencies immediately and effectively and to prevent or mitigate the negative impacts that may cause. Responding measures for storms and floods are included in the document, and a detailed procedure of how to cope with the emergency is provided. Moreover, the document also provides a guide to reallocating productivity if partial facilities are damaged during the disaster.

2.2 Exercise a drill of water shortage at Nanping Factories to be prepared for stricter water rationing caused by persisting drought.

2.3 Establish water recycling systems in Dongguan Factory and Ningbo Factory. Especially the water recovery rate of the sewage treatment system in Ningbo Factory is up to 100%.

2.4 Lower supply chain risks by working on diversifying our suppliers, ensuring that there are always substitutes to supply us with the components we need should an unexpected event occurs.

2.5 Conduct supplier audit and sustainability assessment annually to evaluate the extent of suppliers coping with climate change and thus foresee the potential risk that may happen due to suppliers' failure in properly tackling climate issues.

3. Explanation of cost of response:

3.1 The costs associated with these management actions are relatively low as these are part of the ISO 14001 environmental management standard. The validity period of ISO14001 is 3 years, thus re-certification is required every 3 years. The certification cost is about TWD200,000.

3.2 The total investment in the water recycling system and sewage treatment system of all the factories is TWD1,500,000, and the yearly management cost is around TWD110,000.

3.3 The additional expense of manpower for examining the extent of damage during the disaster and monitoring the progress of recovery after the disaster is around TWD3,000 per person per day, and we assume that at least 10 persons are needed to complete the process.

3.4 The cost of supplier audit, sustainability assessments, as well as regular review of water risk assessment every year is around TWD2,000,000 per year.

**Comment**

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**C2.4**

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**(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes

**(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.****Identifier**

Opp1

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Resource efficiency

**Primary climate-related opportunity driver**

Use of more efficient production and distribution processes

**Primary potential financial impact**

Reduced indirect (operating) costs

**Company-specific description**

GIGABYTE is constantly improving production processes to maximize energy efficiency, especially in our three factories where automation has been gradually implemented. Since 2009, the intensity of our emissions per 1,000 pieces of products has decreased from 3.16 t-CO<sub>2</sub>e to 2.86 t-CO<sub>2</sub>e, while the revenue per tonne of emissions has increased by 3.4 times.

Improving energy efficiency and controlling emission intensity also help GIGABYTE respond to climate-related policies and regulations in Taiwan and China as early as possible. For example, the Taiwan government has just amended the "Greenhouse Gas Reduction and Management Act," released in 2015, to the "Climate Change Response Act", in which a net zero target by 2050 is set and a carbon fee mechanism is planned and will soon be put into practice. Besides, China launched its National Emission Trade Scheme (CN ETS) in July 2021 and has committed to reaching an emission peak by 2030 and carbon neutrality by 2060. Despite GIGABYTE not being obliged to comply with these two regulations, the electronic manufacturing industry will eventually be regulated due to global attention on climate emergencies. Responding sooner is therefore sharing the future cost of complying with the regulation.

Furthermore, the implementing process helps GIGABYTE examine critical or unnecessary emission sources. Headquarters and all manufacturing bases report their environmental data as well as measures to cut power and water consumption to the Sustainable Development Office every year. The Office can then not only review the group's environmental performance of the year but also analyze resource-saving potentials, estimate future resource use pathways, and, based on these results, conduct cost-effectiveness analyses of possible avoiding or improving strategies and measures.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

&lt;Not Applicable&gt;

**Potential financial impact figure – minimum (currency)**

52900000

**Potential financial impact figure – maximum (currency)**

54700000

**Explanation of financial impact figure**

This opportunity has two financial implications: cost savings from resource efficiency improvements in business operations and avoiding future fines and ineffective costs for non-compliance with related regulations.

1. According to internal statistics, GIGABYTE has saved TWD685,000,000 purchasing energy and resources, including electricity, water, fuel, and steam, since 2009 when we launched the "Green Action Plan" and set up our first targets for emissions, water, and waste reduction. That is, over the past decade, we have saved an average of TWD52,700,000 per year by improving resource efficiency in production lines, offices, and other controlled infrastructures.

2. Taking action beforehand reduces the risk of penalties for not meeting an obligation. For instance, according to the "Greenhouse Gas Reduction and Management Act", an entity that fails to meet requirements and register GHG emissions or makes a false report about GHG emission data would be subject to a fine between TWD200,000 and TWD2,000,000. Furthermore, to comply with regulations, the cost of setting personnel in charge of relevant responsibility and purchasing and installing equipment in a short period of time is estimated to be at least TWD5,000,000. The figure is based on the average annual investment in energy-saving measures over the past three years.

As a result, this opportunity would bring GIGABYTE financial benefits ranging from TWD52,900,000 to TWD54,700,000 in total.

**Cost to realize opportunity**

5624000

**Strategy to realize opportunity and explanation of cost calculation**

1. Strategies: Continue to carry out annual emission management mechanism, and invest more manpower in conducting carbon-emission-related analyses or projects in anticipation of regulation changes in the future.

2. Actions:

2.1 Set a company-wide goal of emission reduction and have been carrying out ISO 14064 GHG emission inventory annually since 2010. The annual result of inventory is always certificated by a third party.

2.2 Voluntarily adopt emission management and analysis tools such as LCA and Scope 3 emission inventory. GIGABYTE completed a life cycle assessment for all main product types in 2018, and 11 categories of Scope 3 emissions related to GIGABYTE are calculated annually based on the methodology provided by the GHG Protocol.

2.3 Launched the "Sustainability Fund" in 2019, which budget comes from the money saved from cutting energy consumption, water use, and generated waste in the previous year. It aims to provide monetary feedback and encourage factories, departments, and individual employees that achieve cutting emissions or propose ideas for reducing energy consumption, water use, and waste.

2.4 Invest manpower in researching and preparing for setting a science-based target (SBT) and making an ambitious commitment to carbon reduction.

3. Explanation of cost to realize the opportunity

3.1 The cost of carrying out GHG emission inventory and certification is TWD500,000 per year.

3.2 The Manpower cost of carrying out LCA, Scope 3 emission inventory, and setting an SBT is around TWD1,850,000 per year.

3.3 The cost of Product carbon footprint calculation and LCA System is at least TWD1,500,000, including manpower cost and the expenditure on purchasing and training. Another TWD90,500 is required each year to renew the software.

3.4 The budget for the "Sustainability Fund" in 2023 is TWD800,000.

3.5 If we want to verify our SBT, the verification fee, as well as consulting fee, would be at least TWD883,500.

## Comment

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### Identifier

Opp2

### Where in the value chain does the opportunity occur?

Downstream

### Opportunity type

Products and services

### Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

### Primary potential financial impact

Increased revenues resulting from increased demand for products and services

### Company-specific description

The growing development of green economies, along with the Paris Agreement and following initiatives, has led to the formation of regional climate policies and requirements, such as the "European Green Deal," as well as several regulations at the national and local levels that are aimed at encouraging energy-saving and environmentally friendly products. Over the past few years, more and more energy-efficient products have been released. Low-carbon product and service producers will benefit from these local, national, and regional regulations if they want to develop and sell their products there.

As a result, GIGABYTE views this as an opportunity since our products, especially those that are efficient, power-efficient, and long-lasting, will have a competitive advantage in these markets. For example, GIGABYTE is the first company to introduce solid-state capacitors to motherboards. The technological revolution improves motherboard stability, saves power, and extends motherboards' lifecycles and warranty periods. This saves power costs for our consumers while reducing e-waste, which has grown rapidly in recent decades and poses greater threats to ecological and human health.

Growing market demand for green products motivates GIGABYTE to invest more in advancing climate-friendly products, which will further enhance our brand value and reputation. In turn, this will create a win-win-win situation that is beneficial to businesses and consumers as well as the environment as a whole.

### Time horizon

Short-term

### Likelihood

Very likely

### Magnitude of impact

High

### Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

### Potential financial impact figure (currency)

6210000000

### Potential financial impact figure – minimum (currency)

<Not Applicable>

### Potential financial impact figure – maximum (currency)

<Not Applicable>

### Explanation of financial impact figure

As European and North American markets have already implemented strict regulations about energy efficiency, ecological design, use of harmful substances, packaging materials, etc., we anticipate that climate-friendly products and services will be relatively preferable. Moreover, these markets will soon become world pioneers that levy carbon tariffs on imported products.

GIGABYTE generated TWD62.1 billion in revenue from EU and North American markets in 2022, nearly 57.9% of the company's revenue. Due to the growing demand from these two regions in recent years, we expect the amount to continue to increase. Investing in low-emission products and technologies will pay off in the long run as profits from sales will increase as well.

### Cost to realize opportunity

2232214000

### Strategy to realize opportunity and explanation of cost calculation

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1. Strategies: Invest in R&D to design and produce products that are more user- and environmental-friendly and more favorable to the market demands, and the Sustainable Development Committee plays the role of gatekeeper to ensure our products meet all relevant regulations.

2. Actions:

2.1 Each year, 3% of annual revenue is dedicated to the R&D of products or services that are more market-favorable and more beneficial to upgrading consumers' lives. Moreover, R&D personnel would take into account requirements for eco-design products in different regions and nations during the stage of the product design in order to ensure our products stay competitive with competitors.

2.2 The Sustainable Development Committee carries out a cross-departmental meeting monthly. The products or services that may be problematic in terms of meeting environmental standards would be evaluated at the meeting.

3. Explanation of cost to realize the opportunity:

3.1 In 2022, TWD2.23 billion was dedicated to R&D, accounting for 2.1% of the annual revenue.

3.2 The budget for managing the laboratories for testing different functions and the quality of products in 2023 is TWD2,214,000.

3.3 The cost of running the Committee is relatively low as it has been ongoing regularly for years.

#### Comment

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#### Identifier

Opp3

#### Where in the value chain does the opportunity occur?

Downstream

#### Opportunity type

Products and services

#### Primary climate-related opportunity driver

Ability to diversify business activities

#### Primary potential financial impact

Increased revenues through access to new and emerging markets

#### Company-specific description

GIGABYTE began as a motherboard manufacturer. For decades since we were established, motherboards, graphics cards, and computer peripherals have been our main products as well as revenue sources. With climate change and resource depletion becoming more serious, not only low-carbon products but also business models and solutions that can reduce waste generation, improve resource use efficiency, and promote circular economies receive increasing focus and expectations from global markets. In view of that, GIGABYTE has been investing actively in two flourishing markets in recent years:

1. High-speed computing servers with excellent energy efficiency: With the accelerating growth of cloudification and digitalization for enterprise and individual applications, coupled with the increasing demand for 5G, metaverse, extended reality, and self-driving cars, data centers have become more and more vital. Data centers account for 1% of the world's total electricity consumption, according to the Environmental Investigation Agency (EIA), and the ratio is only expected to increase as technology advances. GIGABYTE has been developing and innovating HPC servers with advanced cooling technology that enables superior scalability, higher computing performance, and better energy efficiency. For example, GIGABYTE's Immersion Cooling Solution can reduce energy consumption by 43% in a data center by improving its power usage effectiveness (PUE) from 1.7, a level a traditional air-cooled room used to have, to 1.08.

2. Reverse logistics service for electronic products: Many materials from discarded electronic products are still usable. When properly recycled and reused, these resources can create value and benefit a circular society. In 2018, GIGABYTE drew on more than 20 years of professional experience in PCB repairs and customer service to set up the subsidiary "Bestyield International." It aims to encourage electronic product recycling and reselling without brand restrictions through a circular economy business model. In 2022, 97.7% of temporarily broken e-products were repaired and returned to their users, and 44,665 pieces of e-waste were refurbished, avoiding approximately 675 metric tons of e-waste generated.

#### Time horizon

Medium-term

#### Likelihood

Very likely

#### Magnitude of impact

High

#### Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

#### Potential financial impact figure (currency)

2000300000

#### Potential financial impact figure – minimum (currency)

<Not Applicable>

#### Potential financial impact figure – maximum (currency)

<Not Applicable>

#### Explanation of financial impact figure

Since 2021, GIGABYTE's revenues from server products have exceeded TWD20 billion every year, which is twofold more than in 2020. The ratio of revenues from servers to GIGABYTE's total income has grown from 12% to 19% since 2018.

In terms of revenue from the reverse logistics market expansion, Bestyield's revenue increased 23 times since its launch in 2018. In 2022, its revenue almost reached TWD10 million.

Therefore, it is estimated that GIGABYTE would profit at least TWD 2,000,300,000 a year from this opportunity of business diversification with revenue growth of at least 10% per year for servers and 30% for refurbished e-products.

**Cost to realize opportunity**

2233804500

**Strategy to realize opportunity and explanation of cost calculation**

1. Strategies: Invest in R&D to design and produce products that are more user- and environmental-friendly and more favorable to the market demands, and the Sustainable Development Committee plays the role of gatekeeper to ensure our products meet all relevant regulations.

2. Actions:

2.1 Each year, 3% of annual revenue is dedicated to the R&D of products or services that are more market-favorable and more beneficial to upgrading consumers' lives. Moreover, R&D personnel would take into account requirements on the eco-designed products in different regions and nations during the stage of the product design in order to ensure our products stay competitive with competitors.

2.2 Carry out product carbon footprint calculations for all main types of GIGABYTE's products and publish Product Environment Reports on our CSR website to actively disclose the impacts our products have on the environment to show the responsibility as an electronic product producer.

2.3 The Sustainable Development Committee carries out a cross-departmental meeting monthly. The products or services that may be problematic in terms of meeting environmental standards would be evaluated at the meeting.

3. Explanation of cost to realize opportunity:

3.1 In 2022, TWD2.23 billion was dedicated to R&D, accounting for 2.1% of the annual revenue.

3.2 The budget for managing the laboratories for testing different functions and the quality of products in 2023 is TWD2,214,000.

3.3 The cost of the Product carbon footprint calculation System is at least TWD1,500,000, including manpower cost and the expenditure on purchasing and training. Another TWD90,500 is required each year to renew the software.

3.4 The cost of running the Committee is relatively low as it has been ongoing regularly for years.

**Comment****Identifier**

Opp4

**Where in the value chain does the opportunity occur?**

Upstream

**Opportunity type**

Resilience

**Primary climate-related opportunity driver**

Resource substitutes/diversification

**Primary potential financial impact**

Reduced direct costs

**Company-specific description**

GIGABYTE once faced disruptions to its upstream supply chain due to floods in Thailand. In response to that experience, we developed a strategic supplier management plan to handle the risks caused by climate change, natural disasters, and other unpredictable events threatening our operation, supply chain, and downstream distribution.

To analyze the extent of water stress in the regions where GIGABYTE's operational bases, branch companies, and top 100 1-tier suppliers are located, GIGABYTE conducts a water pressure risk analysis on a regular basis, using data from the World Resources Institute's Aqueduct Water Risk Atlas (Aqueduct). According to the results of the latest analysis, which was conducted in 2022, since most of these research sites are located in the coastal regions of China, Japan, and Southeast Asian countries, practically all of these sites are exposed to medium to very high risk of water stress and risks.

Our risk evaluation and identification of alternative suppliers and backups beforehand allow us to lower losses and reduce the cost of recovery once the undesirable event occurs. Additionally, we would need comprehensive information about all suppliers to manage suppliers and backup solutions, which would enhance our sustainable supply chain management.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

51500000000

**Potential financial impact figure – minimum (currency)**

&lt;Not Applicable&gt;

**Potential financial impact figure – maximum (currency)**

&lt;Not Applicable&gt;

**Explanation of financial impact figure**

With the driver, GIGABYTE can facilitate the enhancement of our supply chain management, especially in regions that are highly vulnerable to climate disasters and water stress, such as Southeast Asia and coastal areas in Southeast China. Around 17.9% of GIGABYTE's first-tier suppliers were located in China and Southeast Asia in 2022. Nevertheless, they accounted for 62% of the annual procurement amount, which was approximately TWD51.5 billion. Having a stable and secure supply chain would prevent upstream uncertainty and ensure product quality and competitiveness.



**Cost to realize opportunity**

3210000

**Strategy to realize opportunity and explanation of cost calculation**

1. Strategies: Enhance supply chain management and reduce the risk caused by climatic factors together with our suppliers.

2. Actions:

2.1 GIGABYTE has launched a supplier sustainability assessment and supplier audit every year since 2012. The evaluation covers diversified facets including environmental management system, green certification, financial, personnel, machinery, material, and equipment audit, productivity audit, and up/downstream supplier audit. The suppliers with excellent performance are awarded the Supplier Sustainability Award by the end of the year.

2.2 In 2015, GIGABYTE called on our suppliers to involve in the Sustainable Supply Chain Partnership Initiative, sharing a goal of reduction in carbon emission, water use, and waste with suppliers and achieving the goal with a collaborative effort. This also helps to reinforce the resilience of our suppliers in terms of extreme climate events.

2.3 The Sustainable Development Office invests manpower in researching and framing responding strategies and better management of climate change risks and opportunities.

3. Explanation of cost to realize opportunity:

3.1 The budget of supplier evaluation per year is around TWD800,000. The expenditure for holding the Supplier Sustainability Award ceremony is around TWD1,410,000 each year.

3.2 The manpower cost of sustainable supply chain management is at least TWD1,000,000 in the Sustainable Development Office. Other business units also invest manpower in supplier management, yet the accurate value is hard to estimate.

**Comment****C3. Business Strategy****C3.1****(C3.1) Does your organization's strategy include a climate transition plan that aligns with a 1.5°C world?****Row 1****Climate transition plan**

No, but our strategy has been influenced by climate-related risks and opportunities, and we are developing a climate transition plan within two years

**Publicly available climate transition plan**

<Not Applicable>

**Mechanism by which feedback is collected from shareholders on your climate transition plan**

<Not Applicable>

**Description of feedback mechanism**

<Not Applicable>

**Frequency of feedback collection**

<Not Applicable>

**Attach any relevant documents which detail your climate transition plan (optional)**

<Not Applicable>

**Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future**

GIGABYTE considers climate change a serious issue affecting our business activities and operations. We have yet to develop an official transition plan aligned with a 1.5 C world; however, we have carried out a number of preparatory measures. For instance, a target emission reduction pathway in line with SBTi's standard has been developed (Abs3 in C4.1a). Furthermore, we conduct and update climate scenarios yearly, considering the domestic and international climate-related regulations we will be subject to and the measures we will implement to reduce emissions.

Different feedback channels are open to all stakeholders for climate issues communication. For shareholders, GIGABYTE discloses climate-related information, including carbon management policies, practices, yearly performance, brief results of scenario analyses, and low carbon technology development, in annual reports. It is one of the essential documents for AGMs every year. At least three weeks before the AGM, the annual report is made available through MOPS, a company reporting system maintained by the Taiwan Stock Exchange (TSE), so shareholders can review it. The 2022 GIGABYTE Annual Report can be found at:

<https://www.gigabyte.com/FileUpload/Global/SiteMap/83/images/AnnualReportEng-2022.pdf>

For other stakeholders, GIGABYTE publishes Sustainability Reports in June every year (by September for the English version). The Report discloses GIGABYTE's climate policies and strategies since its first issue in 2011 and has aligned with TCFD recommendations since 2019.

All stakeholders can find GIGABYTE's Sustainability Reports over the years at the official CSR website: <https://csr.gigabyte.tw/en/csr-report-en/>. In addition, we welcome any feedback sent to the exclusive mailbox: [csr@gigabyte.com](mailto:csr@gigabyte.com)

**Explain why climate-related risks and opportunities have not influenced your strategy**

<Not Applicable>

**C3.2**

**(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?**

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative and quantitative	<Not Applicable>	<Not Applicable>

**C3.2a**

**(C3.2a) Provide details of your organization's use of climate-related scenario analysis.**

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios   IEA B2DS	Company-wide	<Not Applicable>	<p>1. Parameter:</p> <p>1.1 The additional electricity use for air conditioning resulted from increasing mean temperature.</p> <p>1.2 The total cost of electricity use, which accounts for the largest portion of energy expenditure per year.</p> <p>1.3 The cost of all feasibly responding actions to cut down emissions haven taken by GIGABYTE under the circumstance that the goal of limiting global warming below 1.5°C is achieved.</p> <p>2. Assumption:</p> <p>2.1 The pathway of electricity use of each base over years is consistent with the average growth of electricity use between 2018 and 2022.</p> <p>2.2 The electricity price will increase by 3% year by year.</p> <p>2.3 The cost of different emission reduction or offset actions are estimated according to the latest information received in 2022.</p> <p>3. Analytical choices:</p> <p>3.1 Time horizon: 2021 is set as the base year due to two reasons. Firstly, GIGABYTE adjusts the boundary of electricity and greenhouse gas inventory in 2021. Secondly, the business achievement of GIGABYTE was quite different in 2021 compared to the past few years. The revenue in 2021 grew by 40%. The target year is set at 2035, considering that it shall be no longer than 15 years from the base year. Moreover, for GIGABYTE, 2035 is a rather proper timing that gives sufficient time to implement and review the short- and medium-term strategies and then provides experiences and a clearer direction for the long-term strategy.</p> <p>3.2 Climatic model used: To obtain the closest climatic scenario under the circumstance that the globe successfully limits warming by 1.5°C, the analysis makes use of the downscaling SSP1-2.6 model provided by the Taiwan Climate Change Projection and Information Platform (TCCIP). As for the model in China, we refer to research published at Acta Meteorologica Sinica in 2019.</p> <p>3.3 Price level data sources of emission reduction actions: In 2021, each factory of GIGABYTE conducted a cost-benefit assessment of building solar panels on its rooftop. Also, we discussed with the Plant-for-the-Planet Foundation whether to start a new project after our last cooperation in 2017-2020. These provided a price reference to this analysis on the cost of taking emission reduction or offset actions. Besides, the cost of purchasing renewable energy certificates is TWD2.2 per kWh, as suggested by the Bureau of Standards, Metrology, and Inspection of Taiwan.</p>
Transition scenarios   IEA APS	Company-wide	<Not Applicable>	<p>The scenario analysis considers the Taiwan government's "Climate Change Response Act" which commits achieve net zero emissions by 2050. Also, GIGABYTE is subject to international trading regulations related to climate issues (e.g. CBAM) as well as is requested to set up a science-based target in line with the 1.5°C pathway.</p> <p>1. Parameter:</p> <p>1.1 The gross organizational GHG emissions of GIGABYTE.</p> <p>1.2 The cost that GIGABYTE has to pay for complying with the carbon pricing regulations in both Taiwan and the sales regions.</p> <p>1.3 To comply with the regulative requirement on emission reduction, the cost of all feasibly responding actions haven taken by GIGABYTE.</p> <p>2. Assumption:</p> <p>2.1 GIGABYTE is subject to the current or emerging climate-related regulations that are related to electronic equipment industries, including the carbon fee in Taiwan, setting and verifying an SBT, CBAM, etc.</p> <p>2.2 The pathway of electricity use of each base over the years is consistent with the average growth of electricity use between 2018 and 2022.</p> <p>2.3 The electricity price will rise by 3% year by year.</p> <p>2.4 Regarding the cost of different emission reductions or offset actions, the expenditures are estimated based on the latest price research or information received in 2022.</p> <p>3. Analytical choices:</p> <p>3.1 Time horizon: 2021 is set as the base year for the same reason as mentioned above. The target year is set at 2050. 2050 is the target year of many global and state-level commitments to reaching net-zero emissions or carbon neutrality.</p> <p>3.2 Climatic model used: Climatic information related to increasing temperature is necessary as cooling and air-conditioning are one of GIGABYTE's main emission sources. The IPCC SSP2-4.5 scenario is most likely to provide similar information under this scenario, thus we use downscaling SSP2-4.5 model provided by the Taiwan Climate Change Projection and Information Platform (TCCIP). As for the model in China, we refer to research published at Acta Meteorologica Sinica in 2019.</p> <p>3.3 Price level data of emission reduction actions: As same as 3.3 in IEA B2DS scenario analysis.</p> <p>3.4 Price level data of carbon pricing regulations: The carbon fee draft plan by Taiwan EPA is set between TWD300 per ton of CO<sub>2</sub>e so far. As for the carbon price level of CBAM, we refer to the action price announced on the European Energy Exchange AG website.</p>
Physical climate scenarios   RCP 8.5	Company-wide	<Not Applicable>	<p>The scenario analysis based on the SSP5-8.5 scenario was first conducted in 2019 and is reviewed again in 2023. It is seen as a business-as-usual (BAU) scenario.</p> <p>1. Parameter:</p> <p>1.1 The additional electricity use for air conditioning resulted from increasing mean temperature.</p> <p>1.2 The additional cost of electricity use due to the increase in mean temperature, including the electricity fees and penalties for exceeding the contract capacity of power needs.</p> <p>2. Assumption:</p> <p>2.1 GIGABYTE has not been subject to the current climate-related policies and regulations such as the Climate Change Response Act in Taiwan and the Environmental Protection Tax Law in China, and will not be affected in the future either because the governments will not make any change.</p> <p>2.2 As it is difficult to separate the electricity consumption of air-conditioning from that of other operational activities, we assume that all electricity consumption is for air-conditioning or cooling down the production processes. That electricity consumption would increase by 6% if the outdoor temperature increases by 1°C.</p> <p>2.3 The electricity price will increase by 3% per year until 2030. After 2030, due to fuel prices keeping rising globally, the yearly increase in electricity price becomes 10%.</p> <p>2.4 According to research by Oxfam and Swiss Re Institute, if developed countries cannot reduce excessive emissions properly, climate crises led by temperature rising beyond 2.6 °C would result in an 8.5% loss of GDP per year. We assume that GIGABYTE's revenue will decrease by 8.5% every year under this scenario.</p> <p>3. Analytical choices:</p> <p>3.1 Time horizon: 2021 is set as the base year for the same reason as mentioned above. Conducting SSP5-8.5 scenario analysis is to understand the potential physical risks GIGABYTE will face under a BAU circumstance, so we think that it is appropriate to look at the changes at 10-year intervals. Thus, both 2030 and 2040 are target years. Besides, 2040 is the latest year we can obtain climatic data under the RCP8.5 scenario in China.</p> <p>3.2 Data source: the electricity price levels at all bases in the base year are from actual energy expenditure in 2022.</p> <p>3.3 Climatic model used: We make use of downscaling SSP5-8.5 module by the Taiwan Climate Change Projection and Information Platform (TCCIP) to estimate the future climate condition in Taiwan. As for the future climate in China, we refer to research published at Acta Meteorologica Sinica in 2019.</p>

Climate-related scenario		Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios	IEA NZE 2050	Company-wide	<Not Applicable>	<p>The scenario analysis assumes rapid decarbonization of advanced technologies and effective societal and institutional changes will reduce global emissions by 2050 to net zero. GIGABYTE's business is subject to domestic and international trading regulations related to climate issues, including a 1.5°C science-based target and a requirement to offset critical indirect emissions.</p> <p>1. Parameter:</p> <p>1.1 The gross scope 1+2+3 GHG emissions of GIGABYTE.</p> <p>1.2 The cost that GIGABYTE has to pay for complying with the carbon pricing regulations in both Taiwan and the sales regions.</p> <p>1.3 To comply with the regulative requirement on emission reduction, the cost of all feasibly responding actions haven taken by GIGABYTE.</p> <p>2. Assumption:</p> <p>2.1 GIGABYTE is subject to the current or emerging climate-related regulations that are related to electronic equipment industries, including the carbon fee in Taiwan, setting and verifying an SBT, CBAM, etc.</p> <p>2.2 The pathway of electricity use of each base over years is consistent with the average growth of electricity use between 2018 and 2022.</p> <p>2.3 The electricity price will rise by 3% year by year.</p> <p>2.4 Regarding the cost of different emission reduction or offset actions, the expenditures are estimated based on the latest price research or information received in 2022.</p> <p>3. Analytical choices:</p> <p>3.1 Time horizon: 2021 is set as the base year for the same reason as mentioned above. The net zero target year is set at 2050, following the Climate Change Response Act of Taiwan.</p> <p>3.2 Climatic model used: Climatic information related to increasing temperature is necessary as cooling and air-conditioning are one of GIGABYTE's main emission sources. The IPCC SSP1-1.9 scenario is most likely to provide similar information under this scenario. For GIGABYTE's bases in China, we refer to research published at Transactions of Atmospheric Sciences in 2022. No downscaling projections under SSP1-1.9 scenario are available in Taiwan, so we adopt the SSP1-2.6 model provided by the Taiwan Climate Change Projection and Information Platform (TCCIP).</p> <p>3.3 Price level data of emission reduction actions: As same as 3.3 in IEA B2DS scenario analysis.</p> <p>3.4 Price level data of carbon pricing regulations: The carbon fee draft plan by Taiwan EPA is set between TWD300 per ton of CO<sub>2</sub>e so far. As for the carbon price level of CBAM, we refer to the action price announced on the European Energy Exchange AG website.</p>

### C3.2b

**(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.**

**Row 1**

**Focal questions**

Since inaugurating the "Green Action Plan" in 2009, GIGABYTE has strived for mitigating the impacts of climate change from our operational activities through visionary policies and plans. We invested a lot in replacing old facilities and process optimization and automation. These measures enabled GIGABYTE to cut down emissions by more than 40% between 2009 and 2018, and, meanwhile, the production continued to grow.

The capacity for reducing emissions through equipment replacement and process automation has limits. Moreover, it is increasingly challenging for businesses to reach climate change mitigation and adaptation goals that meet international and stakeholders' expectations. In such circumstances, GIGABYTE has identified four urgent issues, mainly transition risks, which are posing or will soon pose risks to our operation.

The first pressure is from the emerging carbon fee policy in Taiwan. To respond to the CBAM which will be put into effect in 2026 in the EU market, the Taiwan government accelerated the introduction of carbon pricing regulation domestically to maintain the green competitiveness of exported products. Secondly, not only in the EU, many other major markets such as North America, Japan, and South Korea are also considering levying carbon tariffs on imported products. 95% of GIGABYTE's products are sold overseas, these emerging regulations are mostly a part of regional or national policies aiming to fulfill their NDCs or the pledges to net-zero emissions.

The rest of the two pressures come from stakeholders. GIGABYTE has received increasing requirements from customers to provide environmental information of products. Some customers who have set up SBTs ask GIGABYTE to cut down emissions by a designated level within a certain period. Whether using renewable energy is also an expectation from stakeholders such as governments, industry, and civil society.

Based on the background mentioned above, GIGABYTE conducts climate scenario analyses and addresses four focal questions to grasp future situations:

1. The majority of GIGABYTE's carbon emissions come from electricity. To reduce emissions to a level that meets external expectations and GIGABYTE's target, we must first know what the potential pathway of electricity use will look like in the future.
2. Since GIGABYTE's main base is in Taiwan, we are subject to pressure from the Taiwan government. So, how much financial burden will GIGABYTE face once all climate-related regulations are implemented in Taiwan?
3. A business must keep its emission pathway in line with the 1.5°C target to remain competitive in global markets. If that's the case, how much financial burden will GIGABYTE face once the external environment and GIGABYTE reach the Paris Agreement target?
4. Following the above question, to what extent the financial impacts will reaching net zero or carbon neutral by 2050 have for GIGABYTE?

**Results of the climate-related scenario analysis with respect to the focal questions**

1. The pathway of electricity use of GIGABYTE in the future

Most of GIGABYTE's bases are located in the tropics, so the rising temperature will inevitably increase our power consumption for cooling and AC. Based on the temperature data given by the Taiwan Climate Change Projection and Information Platform (TCCIP) and Chinese journal Acta Meteorologica Sinica as well as the assumptions provided in C3.2a, the total electricity use purely because of rising temperature will grow by 2.31% (997.2MWh) in 2030 and by 7.49% (3235.2MWh) under the SSP5-8.5 scenario. In the IEA APS scenario, it will grow by 893.4 MWh in 2030 and 2,852.2MWh in 2050. In the net-zero scenario, it will grow by 761.1MWh in 2030 and 2,135.4MWh in 2050.

2. The financial burden GIGABYTE will encounter when all the climate-related regulations are put into practice

The IEA APS scenario analysis first gives a result that GIGABYTE's gross emissions will grow to 33,360.1-tCO<sub>2</sub>e in 2030 and 173,969.5-tCO<sub>2</sub>e in 2050 if we do not introduce emissions offsetting actions or develop a renewable substitute for power. Under this circumstance, we will have to pay carbon fees of TWD10.9 million in 2030 and TWD52.9 million in 2050 to the Taiwan government. If renewable energy and other offsetting approaches are applied, the payment will be to TWD6.1 million in 2030 and fall to TWD0.7 million by 2050.

3. The financial burden GIGABYTE will face when reaching the target in line with the Paris Agreement

As described in Abs 3 in C4.1a, GIGABYTE has set an emission target in according to the latest SBTi standards. Compared to the 2021 level, the emissions shall be cut by 63% by 2035, which is equivalent to mitigating or offsetting 18,861 t-CO<sub>2</sub>e in 14 years. Several measures are considered to reaching this more robust target: continuing to enhance the energy efficiency of processes; building solar panel systems on the rooftop of factories; purchasing external green power through PPAs; retiring carbon credits by supporting tree-planting projects; purchasing T-RECs or I-RECs. Based on the IEA B2DS scenario analysis, the total cost of carrying out all measures and reaching the targeted level of emissions will be TWD48.6 million in 2030 and TWD153.2 million in 2050.

4. The financial impacts GIGABYTE will face when reaching net zero or carbon neutral by 2050

GIGABYTE needs to eliminate 41306.63 t-CO<sub>2</sub>e of scope 1+2 and offset 1,682,116 t-CO<sub>2</sub>e of scope 3 emissions from purchased goods and the use of sold products by 2050 to achieve net-zero emissions. Using all feasible and standard-compliant strategies, the cost of transition will be TWD1,153 million by 2050, accounting for 2.7% of projected revenue. As climate crises are rapidly mitigated and global warming obviously eases, the cost of dealing with physical risks is the least compared to other scenarios. The cost will be around TWD15.3 million, while under SSP5-8.5, it will reach TWD195 million.

**C3.3**

**(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.**

Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>1. Time horizon: GIGABYTE has been already influenced by climate-related issues in the aspect of products, and we believe the influence will sustain for more than 10 years as a low-carbon transition and technology are already a global trend.</p> <p>2. Description:</p> <p>2.1 Due to several reasons like increasing energy prices and emerging policies or regulations that aim to adjust the energy structure, people and companies would be more preferable to electronic products that consume less power. Hence, GIGABYTE has set improving the stability, energy efficiency, and lifetime of our motherboards and peripheral products as the main objective of product innovation. In the long run, we hope that our products are not only user-friendly but also environmentally friendly.</p> <p>2.2 With rising awareness of climate change and green consumption, disclosing environment-related information on products or services becomes more and more imperative to businesses. Therefore, besides continually innovating eco-friendly products, we also invest a lot in assessing and disclosing the impact of products and services.</p> <p>3. Example of strategy change led by the influence: In 2017, we set up an internal Product Footprint Assessment System for R&amp;D and PMs to assess the carbon footprint of their products. After then, we continually release and update the Product Environment Reports of the main product lines on the GIGABYTE CSR website. Through active disclosure, we communicate with our consumers about the environmental footprint of GIGABYTE's products they purchase. The information in the Reports includes the product's impact level on climate change, air pollution, and ecological protection. The third version of the report has been applied since 2022. In this version, 16 environmental impacts of the product are analyzed based on the latest database of SimaPro. Moreover, it discloses GIGABYTE's product stewardship strategies at each stage of the product lifecycle.</p>
Supply chain and/or value chain	Yes	<p>1. Time horizon: Our supply chain was once disrupted by the Thailand Flood in 2011, we identify that the exposure of the supply chain to physical climate impacts is a medium- to long-term risk. Also, we already face pressure from stakeholders on the demand side. Some customers are concerned with GIGABYTE's carbon management performance.</p> <p>2. Description:</p> <p>2.1 Most of our suppliers are located in Taiwan and the southeast coastal area in China. In these regions, heavy rainfall occurs especially in the plum rain season and typhoon season. To lower the risk of supply chain disruption caused by climatic factors, we have established a backup mechanism for alternative suppliers.</p> <p>2.2 On the demand side, GIGABYTE receives more and more requirements of replying to CSR audit questionnaires and surveys or providing environment-related information about our products to B2B customers. As GIGABYTE is extending the markets in Europe and the US where the environmental policies are stricter than in other areas, the pressures from downstream stakeholders will become greater. The GIGABYTE Green Sustainable Development Committee continually updates internal green product requirements in order to be in line with the latest overseas regulations and holds monthly meetings to keep all business units updated.</p> <p>3. Example of strategy change led by influence: To ensure our products meet the standards of customers, we keep adjusting internal product-related requirements and, in the meanwhile, require the upstream suppliers to meet the same level of standards. To monitor and stimulate the environmental management performance and climate resilience of our first-tier suppliers, GIGABYTE has conducted Sustainable Supply Chain Evaluation every year since 2012. The main suppliers are asked to respond to a questionnaire covering CSR management, environmental protection, supply chain responsibility, etc. The suppliers who perform better will be awarded by GIGABYTE at the end-of-year supplier party. Moreover, GIGABYTE adjusted the risk rating method of suppliers in 2022 which integrates the indicators of Sustainable Supply Chain Evaluation with the original structure so that the new rating mechanism could consider quality, delivery date, nontoxicity, and low environmental impacts of procured components, as well as the extent of extended responsibility the supplier has at the same time.</p>
Investment in R&D	Yes	<p>1. Time horizon: GIGABYTE has been already influenced by climate-related issues in the aspect of investment and R&amp;D, and we believe the influence will become more and more significant as low carbon transition or even zero carbon technology are already an irresistible general trend.</p> <p>2. Description: As mentioned above, to echo the global trend of the energy transition as well as strengthen operational resilience to climate-related risks, we have invested greatly in designing more energy-efficient products, improving the efficiency of assembly processes, and substituting more low-carbon materials to traditional ones. These investments also contribute to our competitiveness in the market.</p> <p>3. Example of strategy change led by the influence: GIGABYTE appropriates 3% of annual revenue in R&amp;D every year. Besides, in order to encourage more innovation and motivation in improving the energy efficiency of processes and the development of green products, we initiated an internal reward mechanism "Sustainability Fund" in 2019. One of its objectives is to encourage employees and departments to innovate low-carbon and environmental-friendly products. So far, departments and employees have submitted 209 emission reduction and low-carbon proposals, and 150 proposals have been rewarded TWD3,000-10,000 per proposal. The budget for promoting the Sustainability Fund in 2023 is TWD800,000.</p>
Operations	Yes	<p>1. Time horizon: GIGABYTE has been already influenced by climate-related issues in the aspect of operation and the influence is believed to become more significant. Companies are expected to take more responsibility for emission reduction, such as setting an SBT or using renewable energy. Taking these actions would unavoidably affect the operational strategies and finance.</p> <p>2. Description:</p> <p>2.1 To combat the climate crisis, many countries have launched various policies and regulations related to greenhouse gas emission control, use of renewable energy, disclosure of corporate environmental performance, etc. GIGABYTE's products are sold worldwide and thus are tightly affected by these regulations.</p> <p>2.2 The Taiwanese government has promoted several policies and regulations in recent years to meet its ambitious goal of emission reduction and energy transition. For instance, the "Climate Change Response Act" that just completed amending in 2023 will carry out a compulsory carbon fee mechanism within one year. These all have gained or will soon gain our operational costs.</p> <p>2.3 Facing the increasing intensity of climate events led by climate change, we have set up mechanisms for responding to supply chain disruption and emergencies caused by extreme events. In addition, our power consumption has continued to increase because of rising temperatures and extending high-temperature days per year. The energy bill will get even more expensive as the government aims to reduce the proportion of coal-fired power generation in future energy structures. The generation cost of renewable energy and gas power is much higher than coal-fired power.</p> <p>3. Example of strategy change led by the influence: The foundation of the "Sustainability Fund" mentioned above also encourages individuals or departments that propose good ideas for reducing emissions, water consumption, and waste. To reduce the climate-related risks of the operation, both motivational top-down strategies and active bottom-up practices are needed. Employees are more familiar with the practical operation and production processes, so they are more likely to explore potentials within daily operations that could conducive to effective reduction. The initiation of the Fund is therefore to stimulate more internal incentives to keep carrying out new and creative actions contributing to the mitigation of climate change.</p>

C3.4

**(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.**

Financial planning elements that have been influenced	Description of influence
Row 1 Revenues Direct costs Indirect costs Capital expenditures	<p>[Revenue]</p> <p>1. Time horizon: For GIGABYTE, revenues will be greatly influenced by climate-related risks and opportunities in 3-5 years. Moreover, the climate-related opportunities influence GIGABYTE's revenues more than climate-related risks do in recent years.</p> <p>2. Description and Example:</p> <p>2.1 If we take ambitious actions to tackle the risks, our revenue would increase either because of growth in product demands or a decrease in operational cost. However, if our response keeps passive and underestimates the impacts and severity of climate change, revenues would decrease mainly due to the rising costs resulting from regulation compliance expenditure on recovery from disasters, increasing energy fees, and also a loss of orders from B2B customers as GIGABYTE does not meet their requirements on product carbon content.</p> <p>2.2 The changing consumer preferences and behaviors led by the rising awareness of environmental problems and global attention to climate crisis also have affected the competitiveness of our products in certain markets. For example, semiconductor manufacturing processes have kept advancing. The transistor density of a chip continually increases and thus the temperature would rise synchronously with the processor power. Therefore, the demand from the semiconductor industry for the sever product that can achieve high-performance computing (HPC) and energy saving at the same time increases. GIGABYTE's Network and Communication BU which has been devoted to developing HPC servers for years receiving more orders than before and thus the revenues keeps growing in recent years.</p> <p>[Direct costs]</p> <p>1. Time horizon: GIGABYTE will be influenced by the domestic climate-related policies in 3 years and by international carbon pricing requirements within 10 years. These would lead to an increase in direct costs in order to comply with the regulations.</p> <p>2. Description and example: In order to comply with more and more carbon management measures and requirements in target markets such as Europe, GIGABYTE has devoted itself to enhancing the energy efficiency of production processes and lowering the carbon footprint of our products. For instance, we invest around TWD2,000,000 in maintaining the product carbon footprint calculation and the LCA system and millions in introducing process automation every year.</p> <p>[Indirect costs]</p> <p>1. Time horizon: Already influenced, and it is believed that the impact will continue for a long period as the low-carbon transition is a trend of the times.</p> <p>2. Description and Example:</p> <p>2.1 The new requirement and obligations of climate, energy, and corporate disclosure policies and regulations have increased our operational cost, including additional expenditure for recruiting personnel to investigate related issues and propose responding strategies, running regular procedures to ensure all the processes meet the regulation, etc.</p> <p>2.2 GIGABYTE's daily operation highly relies on electricity. Air-conditioning in offices and cooling systems in R&amp;D laboratories account for a great proportion of power consumption. These cannot be seen as direct costs because have an indirect link to our products. Electricity price is also a substantial impact on our operation. However, the Taiwan government aims to raise the energy structure, thus the cost of developing renewable energy sources will unavoidably reflect on electricity fees. As the result, our electricity bill will be very likely to go up, especially if we do not reduce our power consumption.</p> <p>[Capital expenditures]</p> <p>1. Time horizon: It is already influencing GIGABYTE's factories and office facilities as well as manufacturing equipment. The impact will continue for a long period as the low-carbon transition is a trend of the times.</p> <p>2. Description and example: To reduce greenhouse emissions, we have invested more than TWD1,000,000 in replacing plenty of old equipment with more energy-saving ones every year. For instance, most of the lighting in offices, factories, and public areas have been replaced with LED lighting. Additionally, our factories have implemented several energy-improving projects such as renovating SMT machines, installing frequency inverters for air compressors, and establishing water recycling systems. Although the capital expenditure is quite high in the beginning, the cost has returned or will be returned within a few years as the new equipment contributes to saving a great deal of energy and water resources and helps to avoid risks from governmental regulation or customers' requirements of resource use.</p>

**C3.5**

**(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?**

	Identification of spending/revenue that is aligned with your organization's climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	No, but we plan to in the next two years	<Not Applicable>

**C4. Targets and performance**

**C4.1**

**(C4.1) Did you have an emissions target that was active in the reporting year?**

Absolute target

**C4.1a**

**(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.**

Target reference number

Abs 1

**Is this a science-based target?**

No, but we are reporting another target that is science-based

**Target ambition**

<Not Applicable>

**Year target was set**

2010

**Target coverage**

Company-wide

**Scope(s)**

Scope 1

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Base year**

2009

**Base year Scope 1 emissions covered by target (metric tons CO2e)**

1105.16

**Base year Scope 2 emissions covered by target (metric tons CO2e)**

47851.98

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year total Scope 3 emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Total base year emissions covered by target in all selected Scopes (metric tons CO2e)**

48957.14

**Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1**

2.26

**Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2**

97.74

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)**

<Not Applicable>

**Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)**

<Not Applicable>

**Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes**

100

**Target year**

2025

**Targeted reduction from base year (%)**

50

**Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]**

24478.57

**Scope 1 emissions in reporting year covered by target (metric tons CO2e)**

627.81

**Scope 2 emissions in reporting year covered by target (metric tons CO2e)**

27283.64



**Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)**

27911.45

**Does this target cover any land-related emissions?**

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

**% of target achieved relative to base year [auto-calculated]**

85.9759781719275

**Target status in reporting year**

Underway

**Please explain target coverage and identify any exclusions**

The target covers scope 1+2 of the GIGABYTE Headquarters, Nanping Factory in Taiwan, and two factories in China. These bases are the main operational bases of GIGABYTE.

Since 2021, the offices of four main subsidiaries in Taiwan, the International Bestfield, G-STYLE, GIGAPIC, and Selita Precision, have been included in the reporting boundary of the greenhouse gas emission inventory.

**Plan for achieving target, and progress made to the end of the reporting year**

In 2009, when initiating the "Green Action Plan," GIGABYTE set up the first group-wide GHG emission reduction target: to cut 20% of emissions by 2015 compared to the 2009 level. The target covered scope 1+2 of the GIGABYTE Headquarters, Nanping Factory in Taiwan, and two factories in China. This first goal was achieved in 2012, 3 years ahead of the target year. Then, we reset the target to become reducing 40% of absolute GHG emissions by 2020. Again, the revised target was achieved in 2016, 4 years ahead of the target year. We then reset the goal in 2017 by cutting 50% of emissions by 2030 compared to the 2009 level.

Considering that the global attention on the extent of business ambition to cut emissions has kept rising, and various related initiatives and standards have been developed by creditable parties, in 2020, GIGABYTE decided to advance the target year from 2030 to 2025. We are moving toward the new target, cutting 50% of emissions from the 2009 level by 2025. Since 2009, GIGABYTE has reduced by 42.99% of emissions. In addition, the emission intensity per 1000-piece equivalent motherboards has reduced by 9.32%, and the emission intensity per TWD million revenue also decreases by 77.34%. These figures show that GIGABYTE's operation and manufacturing processes' energy efficiency has significantly enhanced in the past decade.

Since 2019, We have introduced new measures that aim to stimulate BUs and employees to break away from the existing modes and processes and explore new hot spots of energy-saving or emission reduction based on more creative and innovative thinking. The establishment of the "Sustainability Fund" is one example. Its budget comes from the money saved from cutting energy consumption, water use, and generated waste in the previous year. It aims to provide monetary feedback and encourage factories, departments, and individual employees to cut emissions or propose ideas for reducing energy consumption, water use, and waste. As of Q2 in 2023, the C-suite of each factory and participating employees have been rewarded by around TWD1,279,865.

**List the emissions reduction initiatives which contributed most to achieving this target**

<Not Applicable>

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**Target reference number**

Abs 2

**Is this a science-based target?**

No, but we are reporting another target that is science-based

**Target ambition**

<Not Applicable>

**Year target was set**

2016

**Target coverage**

Company-wide

**Scope(s)**

Scope 1

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Base year**

2016

**Base year Scope 1 emissions covered by target (metric tons CO2e)**

644.45

**Base year Scope 2 emissions covered by target (metric tons CO2e)**

28643.38

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year total Scope 3 emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Total base year emissions covered by target in all selected Scopes (metric tons CO2e)**

29287.83

**Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1**

2.2

**Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2**

97.8

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)**

<Not Applicable>

**Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)**

<Not Applicable>

**Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes**

100

**Target year**

2030

**Targeted reduction from base year (%)**

34.72

**Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]**

19119.095424

**Scope 1 emissions in reporting year covered by target (metric tons CO2e)**

627.81

**Scope 2 emissions in reporting year covered by target (metric tons CO2e)**

27283.64

**Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)**

&lt;Not Applicable&gt;

**Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)**

27911.45

**Does this target cover any land-related emissions?**

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

**% of target achieved relative to base year [auto-calculated]**

13.5354108194396

**Target status in reporting year**

Underway

**Please explain target coverage and identify any exclusions**

This target also covers scope 1+2 of the GIGABYTE Headquarters, Nanping Factory in Taiwan, and two factories in China.

Since 2021, the offices of four main subsidiaries in Taiwan, the International Bestyield, G-STYLE, GIGAPIC, and Selita Precision, have been included in the reporting boundary of the greenhouse gas emission inventory.

**Plan for achieving target, and progress made to the end of the reporting year**

Besides the long-term goal, i.e. cutting 50% of the 2009 level by 2025, GIGABYTE also set a relatively short-term goal in 2016 to ensure that GHG emission performance continues to be aligned with the reduction path year by year. The short-term goal is called the "333 Reduction Plan", which targets to reduce carbon emissions, waste production, and water consumption by 3% each year. So, until the target year 2030, the reduction rate will be around 34.72% compared to the 2016 emission level.

As mentioned above, since 2019, GIGABYTE has introduced new measures that aim to stimulate BUs and employees to break away from the existing modes and processes and explore new hot spots of energy-saving or emission reduction based on more creative and innovative thinking. The establishment of the "Sustainability Fund" is one example. Its budget comes from the money saved from cutting energy consumption, water use, and generated waste in the previous year. It aims to provide monetary feedback and encourage factories, departments, and individual employees to cut emissions or propose ideas for reducing energy consumption, water use, and waste. As of Q2 in 2023, the C-suite of each factory and participating employees have been rewarded by around TWD1,279,865.

**List the emissions reduction initiatives which contributed most to achieving this target**

&lt;Not Applicable&gt;

**Target reference number**

Abs 3

**Is this a science-based target?**

Yes, we consider this a science-based target, but we have not committed to seek validation of this target by the Science Based Targets initiative within the next two years

**Target ambition**

1.5°C aligned

**Year target was set**

2022

**Target coverage**

Company-wide

**Scope(s)**

Scope 1

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Base year**

2021

**Base year Scope 1 emissions covered by target (metric tons CO2e)**

1063.52

**Base year Scope 2 emissions covered by target (metric tons CO2e)**

28874.43

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year total Scope 3 emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Total base year emissions covered by target in all selected Scopes (metric tons CO2e)**

29937.95

**Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1**

3.55

**Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2**

96.45

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)**

<Not Applicable>

**Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)**

<Not Applicable>

**Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes**

100

**Target year**

2035

**Targeted reduction from base year (%)**

63

**Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]**

11077.0415

**Scope 1 emissions in reporting year covered by target (metric tons CO2e)**

627.81

**Scope 2 emissions in reporting year covered by target (metric tons CO2e)**

27283.64

**Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)**

27911.45

**Does this target cover any land-related emissions?**

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

**% of target achieved relative to base year [auto-calculated]**

10.7444453166188

**Target status in reporting year**

Underway

**Please explain target coverage and identify any exclusions**

This target covers scope 1+2 of the GIGABYTE Headquarters, Nanping Factory, and four main subsidiaries, the International Bestyield, G-STYLE, GIGAPIC, and Selita Precision, in Taiwan, and also two factories in China. The scope is as same as the reporting boundary of the GHG emission inventory in 2022.

**Plan for achieving target, and progress made to the end of the reporting year**

GIGABYTE endeavors to reduce our negative impacts on the environment and has tried to continue cutting the emissions generated from our operation. To ensure our emissions align with or even below the emission level that aims to achieve the global goal, we tried to set a target that applies the methodologies and meets the standard provided by SBTi. In 2022, we researched setting an SBT based on the latest version of "SBTi Criteria and Recommendation" and the Absolute Contraction Approach.

Although GIGABYTE has not publicly committed to setting an SBT, neither has it planned to submit this target to SBTi for verification; this target is disclosed to some stakeholders from the industry and media in Taiwan.

GIGABYTE maps out a plan that considers four measures, other than enhancing the energy efficiency of processes, to achieve this ambitious goal. In order of execution priority, these are building solar panel systems on the rooftop of factories, investing in external power plant projects or signing up PPAs, supporting international tree-planting projects that can obtain carbon credits, and purchasing T-RECs (REC issued in Taiwan) to offset the emissions that exceed the reduction target. These measures also have been taken into account in the climate scenario analysis described in C3.2.

**List the emissions reduction initiatives which contributed most to achieving this target**

<Not Applicable>

## C4.2

### (C4.2) Did you have any other climate-related targets that were active in the reporting year?

Other climate-related target(s)

## C4.2b

### (C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

**Target reference number**

Oth 1

**Year target was set**

2010

**Target coverage**

Company-wide

**Target type: absolute or intensity**

Absolute

**Target type: category & Metric (target numerator if reporting an intensity target)**

Waste management	metric tons of waste generated
------------------	--------------------------------

**Target denominator (intensity targets only)**

<Not Applicable>

**Base year**

2010

**Figure or percentage in base year**

2516.67

**Target year**

2030

**Figure or percentage in target year**

1258.34

**Figure or percentage in reporting year**

2214.82

**% of target achieved relative to base year [auto-calculated]**

23.9881430149484

**Target status in reporting year**

Underway

**Is this target part of an emissions target?**

It is part of the Green Action Plan (Abs 1).

**Is this target part of an overarching initiative?**

No, it's not part of an overarching initiative

**Please explain target coverage and identify any exclusions**

The target covers the Headquarters and Nanping Factory in Taiwan and Dongguan and Ningbo Factory in China. These four bases are the main operation and production bases of GIGABYTE.

**Plan for achieving target, and progress made to the end of the reporting year**

GIGABYTE also set waste reduction and water-saving targets when launching the Green Action Plan (as mentioned in C4.1a) in 2009. The water-saving target (cutting 20% of water use by 2030 compared to the 2010 level) was achieved already, while the waste reduction target is still in progress. The target is to reduce 50% of generated waste by 3030 compared to 2010.

Several actions have been implemented to reach the waste reduction target. The establishment of the "Sustainability Fund" in 2019 is one example. Its budget comes from the money saved from cutting energy consumption, water use, and generated waste in the previous year. It aims to provide monetary feedback and encourage factories, departments, and individual employees to cut emissions or propose ideas for reducing energy consumption, water use, and waste.

**List the actions which contributed most to achieving this target**

<Not Applicable>

**Target reference number**

Oth 2

**Year target was set**

2016

**Target coverage**

Company-wide

**Target type: absolute or intensity**

Absolute

**Target type: category & Metric (target numerator if reporting an intensity target)**



Other, please specify	Other, please specify (water use & cubic meters of water used)
-----------------------	----------------------------------------------------------------

**Target denominator (intensity targets only)**

<Not Applicable>

**Base year**

2016

**Figure or percentage in base year**

350325

**Target year**

2030

**Figure or percentage in target year**

228705

**Figure or percentage in reporting year**

250819

**% of target achieved relative to base year [auto-calculated]**

81.8171353395823

**Target status in reporting year**

Underway

**Is this target part of an emissions target?**

It is part of the "333 Reduction Plan" (Abs 2 in C4.1a) mentioned above. It is a short-term target taking emissions, water, and waste into account at the same time.

**Is this target part of an overarching initiative?**

No, it's not part of an overarching initiative

**Please explain target coverage and identify any exclusions**

The target covers the Headquarters and Nanping Factory in Taiwan, and the Dongguan Factory and Ningbo Factory in China. These four bases are the main operation and production bases of GIGABYTE.

**Plan for achieving target, and progress made to the end of the reporting year**

When the Green Action Plan (as mentioned in C4.1a) launched in 2009, a water-saving target was set. It was cutting 20% of water use by 2030 compared to the 2010 level. However, this target was achieved already. In 2016, GIGABYTE set a short-term water-saving target according to our "333 Reduction Plan" to cut 3% of water use each year compared to the previous year. This is the current water use reduction target of GIGABYTE.

Several actions have been implemented to reach the waste reduction target. The establishment of the "Sustainability Fund" in 2019 is one example. Its budget comes from the money saved from cutting energy consumption, water use, and generated waste in the previous year. It aims to provide monetary feedback and encourage factories, departments, and individual employees that achieve cutting emissions or propose ideas for reducing energy consumption, water use, and waste.

**List the actions which contributed most to achieving this target**

<Not Applicable>

**Target reference number**

Oth 3

**Year target was set**

2021

**Target coverage**

Company-wide

**Target type: absolute or intensity**

Absolute

**Target type: category & Metric (target numerator if reporting an intensity target)**

Resource consumption or efficiency	Percentage of packaging from recycled or certified sustainable sources
------------------------------------	------------------------------------------------------------------------

**Target denominator (intensity targets only)**

<Not Applicable>

**Base year**

2021

**Figure or percentage in base year**

0

**Target year**

2030

**Figure or percentage in target year**

100

**Figure or percentage in reporting year**

5

**% of target achieved relative to base year [auto-calculated]**

5

**Target status in reporting year**

Underway

**Is this target part of an emissions target?**

No

**Is this target part of an overarching initiative?**

No, it's not part of an overarching initiative

**Please explain target coverage and identify any exclusions**

The target covers the procured paper and plastic packaging materials by all BUs and subsidiaries of GIGABYTE that have products, including Channel Solution BU, Network and Communication BU, Automotive Electronics Business Unit, and G-STYLE.

**Plan for achieving target, and progress made to the end of the reporting year**

The target was set in 2021 and is planned to be promoted in three stages:

- By 2030, all paper packaging made from virgin pulp shall be 100% certified by FSC; All manuals and color boxes are made of recycled pulp; The PS use reduces by 20%; The plastic packaging shall compose of at least 20% Post-Consumer Recycled Plastics (PCR).
- By 2025, the use of paper made of virgin pulp reduces by 20%; The PS use reduces by 50%, and the ratio of PCR in plastic packaging rises to 50%.
- The ultimate goal in 2030 is to eliminate all use of disposable materials in packaging.

In 2022, the Group Operation Center convened several cross-department meetings to communicate and explain the new goal of packaging reduction. The following practical strategies will be evaluated and proposed by each BU based on the characteristics of products as well as the expectation of their customers. BUs are required to provide outcomes and relevant data to the Sustainable Development Office every year in order to manage the performance and the progress of goal achievement.

**List the actions which contributed most to achieving this target**

&lt;Not Applicable&gt;

**C4.3****(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.**

Yes

**C4.3a****(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	1	5.89
To be implemented*	0	0
Implementation commenced*	1	28.07
Implemented*	18	305.46
Not to be implemented	0	0

**C4.3b****(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.****Initiative category & Initiative type**

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)
--------------------------------	--------------------------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

10.27

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

54470

**Investment required (unit currency – as specified in C0.4)**

1150000

**Payback period**

21-25 years

**Estimated lifetime of the initiative**

16-20 years

**Comment**

Replacement of the central air-conditioning chilled water host at the Headquarters.

---

**Initiative category & Initiative type**

Energy efficiency in buildings	Lighting
--------------------------------	----------

**Estimated annual CO2e savings (metric tonnes CO2e)**

0.95

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

62100

**Investment required (unit currency – as specified in C0.4)**

55054

**Payback period**

11-15 years

**Estimated lifetime of the initiative**

11-15 years

**Comment**

Replacement of traditional lightings with more energy-efficient lightings at the Headquarters

---

**Initiative category & Initiative type**

Non-energy industrial process emissions reductions	Process equipment replacement
----------------------------------------------------	-------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

2.1

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

10766

**Investment required (unit currency – as specified in C0.4)**

3489

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

For the process lines at Nanping Factory, designing unpowered roller slide tables to substitute for energy-consuming automatic slide tables.

---

**Initiative category & Initiative type**

Energy efficiency in production processes	Machine/equipment replacement
-------------------------------------------	-------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

3.02

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

1224010

**Investment required (unit currency – as specified in C0.4)**

2632000

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Processing lines of laptop keyboards in Nanping Factory introduced an automatic screw-locking machine to improve assembling efficiency.

**Initiative category & Initiative type**

Energy efficiency in production processes	Cooling technology
-------------------------------------------	--------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

2.34

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

969285

**Investment required (unit currency – as specified in C0.4)**

100472

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

1-2 years

**Comment**

The SMT processes in Nanping Factory install a smart monitoring system for reflow soldering equipment.

**Initiative category & Initiative type**

Energy efficiency in production processes	Smart control system
-------------------------------------------	----------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

0.23

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

312359

**Investment required (unit currency – as specified in C0.4)**

7054

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Nanping Factory develops a feeding warning system to ensure daily production capacity reaches standard and avoid extra production on weekends.

**Initiative category & Initiative type**

Energy efficiency in production processes	Process optimization
-------------------------------------------	----------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

0.5

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

597511

**Investment required (unit currency – as specified in C0.4)**

220000

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

6-10 years

**Comment**

To improve testing efficiency, Nanping Factory introduces 1-to-more duplicators for laptop image testing.

**Initiative category & Initiative type**

Waste reduction and material circularity	Waste reduction
------------------------------------------	-----------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

8.11

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

1430728

**Investment required (unit currency – as specified in C0.4)**

101923

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

Ongoing

**Comment**

In order to process PCBs using SMT and DIP processes, carriers are necessary jigs. Nanping Factory redesigns carriers by reducing thickness to save both material use and energy consumption from producing carriers.

**Initiative category & Initiative type**

Waste reduction and material circularity	Other, please specify (Uniforming jig size)
------------------------------------------	---------------------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

3

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

1572950

**Investment required (unit currency – as specified in C0.4)**

0

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Following the measure above, more energy is saved and less waste is generated also by designing a multipurpose carrier that fits various PCB sizes.

**Initiative category & Initiative type**

Energy efficiency in production processes	Process optimization
-------------------------------------------	----------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

0.44

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

272271

**Investment required (unit currency – as specified in C0.4)**

12870

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Nanping Factory designs a simple cooling module that can easily attach to a jig and help improve cooling efficiency.

**Initiative category & Initiative type**

Energy efficiency in production processes	Other, please specify (Shortening Device Sleep Mode Time)
-------------------------------------------	-----------------------------------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

3.8

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

15471

**Investment required (unit currency – as specified in C0.4)**

0

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

During off-hours, Nanping Factory turns off office copiers to prevent unnecessary energy consumption.

**Initiative category & Initiative type**

Energy efficiency in buildings	Lighting
--------------------------------	----------

**Estimated annual CO2e savings (metric tonnes CO2e)**

1.4

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

28158

**Investment required (unit currency – as specified in C0.4)**

7030

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Replacement of the lighting of conveyor belts in Nanping Factory with more energy-saving ones.

**Initiative category & Initiative type**

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)
--------------------------------	--------------------------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

7.53

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

30061

**Investment required (unit currency – as specified in C0.4)**

589600

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

11-15 years

**Comment**

The employee dormitory at Dongguan installs a new heat pump certified by the highest level of China Energy Label (CEL).

**Initiative category & Initiative type**

Energy efficiency in production processes	Machine/equipment replacement
-------------------------------------------	-------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

173.71

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

690800

**Investment required (unit currency – as specified in C0.4)**

2798400

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

6-10 years

**Comment**

Dongguan Factory introduces new nitrogen generator with better energy-saving performance.

**Initiative category & Initiative type**

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)
--------------------------------	--------------------------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

26.14

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

117836

**Investment required (unit currency – as specified in C0.4)**

462000

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

11-15 years

**Comment**

There are nine SMT production lines in Dongguan Factory. Two lines are set far away from the central AC system and right beside windows, resulting in an insufficient cooling supply. A hanging-type air conditioner certified by the highest level of China Energy Label (CEL) is added to these two lines to help improve cooling efficiency.

**Initiative category & Initiative type**

Energy efficiency in production processes	Cooling technology
-------------------------------------------	--------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

5.22

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

26654

**Investment required (unit currency – as specified in C0.4)**

6600

**Payback period**

<1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Air-conditioners and fans are used to cool down the product after the SMT process. Ningbo Factory improves the cooling equipment for server products to improve cooling efficiency.

**Initiative category & Initiative type**

Energy efficiency in production processes	Machine/equipment replacement
-------------------------------------------	-------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

53.94

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

275684

**Investment required (unit currency – as specified in C0.4)**

2651722

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

6-10 years

**Comment**

Ningbo Factory installs a drying chamber with six air conditioners and four rotary dehumidifiers to cool down products after wave soldering. Compared to the original method, which uses ovens, it uses less energy and causes fewer cases of tin sinking.

**Initiative category & Initiative type**

Energy efficiency in production processes	Process optimization
-------------------------------------------	----------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

2.76

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

210204

**Investment required (unit currency – as specified in C0.4)**

0

**Payback period**

<1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Laptop production lines at Ningbo Factory optimizes hand-soldered parts by replacing with thinner soldering tips to improve efficiency and power saving.

C4.3c



**(C4.3c) What methods do you use to drive investment in emissions reduction activities?**

Method	Comment
Compliance with regulatory requirements/standards	<p>1. Taiwan's "Greenhouse Gas Reduction and Management Act," adopted in 2015, was amended in January 2023 to become the "Climate Change Response Act." The revised Act legislates a net-zero emissions target by 2050 within the law. Subsequently, several managing and supporting measures will be adopted, including carbon fees, extending the scope of objects required for greenhouse emission inventory and verification, using renewable energy, etc.</p> <p>2. The "Corporate Social Responsibility Best Practice Principles for TWSE/GTSM Listed Companies", issued by Taiwan Stock Exchange Corporation (TWSE) and GreTai Securities Market (GTSM) in 2014, advises TWSE/GTSM listed companies to adopt internationally accepted standards or guidelines to enforce corporate GHG inventory and disclosure, and publish CSR reports annually.</p> <p>3. Not only external regulations but also internal self-management drive our incentive to invest in emissions reduction initiatives. In 2009, GIGABYTE launched the "Green Action Plan" as the central sustainable development policy and guiding strategy. The Action includes an emission reduction target, cutting 50% of emissions by 2025 compared to 2009. To track and manage emission reduction performance, GIGABYTE has implemented a company-wide GHG emissions inventory following ISO 14064-1 and has obtained third-party certifications every year since 2010.</p>
Internal incentives/recognition programs	<p>GIGABYTE established the "Green Sustainable Development Committee" in 2009, serving a core role in promoting and implementing company-wide CSR policies and strategies and supervising all related processes and performance. The Sustainable Development Office serves as the convener of the Committee. Targeting sustainable operation and development, the Committee sets up sub-targets for each business group or department.</p> <p>Cross-department and cross-business-unit meetings are carried out monthly, and each unit reports its progress towards the sub-targets. Moreover, all bases, mainly the Headquarters, Nanping Factory, Dongguan Factory, and Ningbo Factory, have to report their CSR-related information and data to the Sustainable Development Office their environmental performance statistics yearly, including energy use, water use, generated waste, etc.</p> <p>The Sustainable Development Office would further integrate and analyze the data and information collected from each unit and factory. Finally, the final report, which contains the group's overall performance and individual performance on each basis, would be reported to the Board. Meanwhile, the results would be disclosed on the internal information platform GEIP and also made public through various official channels such as CSR reports and the CSR official website.</p>
Dedicated budget for low-carbon product R&D	GIGABYTE appropriates around 3% in R&D every year. With the increasing demand and expanding markets for low-carbon and energy-saving IT products, our expenditure in R&D has also increased in recent years. In 2022, TWD 2.23 billion was dedicated to R&D, accounting for 2.08% of the annual revenue.
Dedicated budget for other emissions reduction activities	<p>As mentioned in C1.3a, GIGABYTE initiated the "Sustainability Fund" in 2019. The budget comes from the monetary savings from cutting power consumption, water use, and waste in the previous year. In 2023, the budget for the Sustainability Fund is TWD 800,000.</p> <p>The Sustainability Fund aims at three purposes:</p> <ul style="list-style-type: none"> <li>• Rewarding the factories that cut the most emissions in the previous year.</li> <li>• Encouraging the individuals or departments that propose excellent emission reduction programs or high-quality eco-friendly products (proposal reward application).</li> <li>• Investing in other CSR-related projects such as the purchase of renewable energy certificates and tree planting.</li> </ul> <p>So far, the Fund has given back TWD1,279,865 to factories, units, or individual employees. By providing monetary rewards, we believe the new project will drive stronger incentives among factories and employees to invest more in emissions reduction activities.</p>
Employee engagement	<p>1. GIGABYTE's "Green Action Plan" also regularly holds guest lectures in offices or factories to educate our employees on climate change and environmental protection. Besides, we encourage employees to participate in external activities by local governments and NGOs.</p> <p>2. In 2015, GIGABYTE started up a voluntary activity to advocate reducing the use of plastics. Wastes randomly abandoned or improperly treated have destroyed Taiwan's beautiful landscape, and plastics account for the most. Given that, we initiated a 5-to-7-year project to complete a route around Taiwan by foot and, in meanwhile collect wastes along the way. The trekking plan was just accomplished on Earth Day, April 22, 2023. In the past few years, accumulatively, 1,976 person times of employees have dedicated 32,388 hours to picking and removing 15,722.38kg of waste with footprints stretching 1,119.46km around the Taiwan island.</p>

**C4.5**

**(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?**

Yes

**C4.5a**

**(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.**

**Level of aggregation**

Group of products or services

**Taxonomy used to classify product(s) or service(s) as low-carbon**

No taxonomy used to classify product(s) or service(s) as low carbon

**Type of product(s) or service(s)**

Other	Other, please specify (Server products)
-------	-----------------------------------------

**Description of product(s) or service(s)**

With the accelerating growth of cloudification and digitalization for enterprise and individual applications, coupled with the increasing demand for 5G, metaverse, extended reality, and self-driving cars, HPC servers and data centers have become more and more vital. However, these facilities account for 1% of the world's total electricity consumption, according to the Environmental Investigation Agency (EIA), and the ratio is only expected to increase as technology advances. GIGABYTE has been developing and innovating HPC servers with advanced cooling technology that enables superior scalability, higher computing performance, and better energy efficiency. For example, GIGABYTE's Immersion Cooling Solution can reduce energy consumption by 43% in a data center by improving its power usage effectiveness (PUE) from 1.7, a level a traditional air-cooled room used to have, to 1.08.

**Have you estimated the avoided emissions of this low-carbon product(s) or service(s)**

Yes

**Methodology used to calculate avoided emissions**

Other, please specify (Product Category Rules (PCRs) issued by Taiwan EPA, Energy Star Standard, and GHG Protocol Scope 3 Guidance)

**Life cycle stage(s) covered for the low-carbon product(s) or services(s)**

Use stage

**Functional unit used**

Average emissions from usage within warranty period per piece of server product (t-CO2e/pcs).

**Reference product/service or baseline scenario used**

Compare the emissions from the use stage of a server between its generations. Ideally, the carbon footprint of newer generations should be lower than older ones.

**Life cycle stage(s) covered for the reference product/service or baseline scenario**

Use stage

**Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario**

0.90061

**Explain your calculation of avoided emissions, including any assumptions**

GIGABYTE adjusted the inventory methodology of scope 3 emissions from the use stage of 7 main product types in 2021. To calculate the emissions from using GIGABYTE's server products, we obtain energy efficiency data of server at several predefined operating modes from R&D departments. Also, two assumptions are given in the calculating process:

1. Given that all GIGABYTE server products will be used for 3 years, a period as same as the basic warranty period.
2. We assume that the servers sold in the year are the newest models, and thus ask R&D departments to provide the power information of the latest generation for each server model.

After collecting the power information and the sales amount in the year, the total emissions from the use stage of the server products sold in the year could be calculated. For more details about the method and formula please refer to C6.5. According to the result, the average emissions from the use stage within the warranty period per piece of server product was 6,914.59 kg-CO2e in 2021 and 6,013.98 kg-CO2e in 2022. Thus, avoiding 900.61 kg-CO2e at the use stage per piece of server product is concluded. If multiplying the figure with the total sales volume of servers in 2022, we could estimate that 42,362.14 t-CO2e have been avoided in the year.

**Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year**

18.74

**Level of aggregation**

Group of products or services

**Taxonomy used to classify product(s) or service(s) as low-carbon**

No taxonomy used to classify product(s) or service(s) as low carbon

**Type of product(s) or service(s)**

Other	Other, please specify (Packaging cartons of laptops)
-------	------------------------------------------------------

**Description of product(s) or service(s)**

As mentioned in target Oth 3 disclosed in C4.2b, GIGABYTE set up a goal to reduce or increase the percentage of recycled materials in the packings of products and the component purchased from suppliers. To achieve the target, the packaging cartons of laptop products have been redesigned. By minimizing the size of outer cartons as much as possible, the use of packaging materials and the indirect emissions from the shipping process and end-of-life treatment can be reduced. Thus, we regard this as a kind of low-carbon product.

**Have you estimated the avoided emissions of this low-carbon product(s) or service(s)**

Yes

**Methodology used to calculate avoided emissions**

Other, please specify (Product Category Rules (PCRs) issued by Taiwan EPA, GHG Protocol Scope 3 Guidance, and SimaPro 9.1 database)

**Life cycle stage(s) covered for the low-carbon product(s) or services(s)**

Cradle-to-gate + end-of-life stage

**Functional unit used**

Total indirect emissions per year from the production and end-of-life treatment stages of packing materials used for laptop products (t-CO2e/year)

**Reference product/service or baseline scenario used**

The total indirect emissions per year from the production and end-of-life treatment stages of packing materials used for laptop products before re-designing.

**Life cycle stage(s) covered for the reference product/service or baseline scenario**

Cradle-to-gate + end-of-life stage

**Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario**

71.69

**Explain your calculation of avoided emissions, including any assumptions**

To assess the avoided emissions, we first obtain actual weight and size figures of laptop packings before and after re-designing. Given that the shipment volume is 95,500 pieces each year, the total volume of materials used in outer packings before re-designing is 1,180.16 kg less than before per year. After conversion by the emissions factors provided by the Carbon Footprint Information Platform of Taiwan EPA, the reduced packaging contributes to avoiding 71.69 t-CO2e emissions from upstream production and end-of-life treatment stages.

**Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year**

5.13

**Level of aggregation**

Product or service

**Taxonomy used to classify product(s) or service(s) as low-carbon**

No taxonomy used to classify product(s) or service(s) as low carbon

**Type of product(s) or service(s)**

Other	Other, please specify (Laptops)
-------	---------------------------------

**Description of product(s) or service(s)**

GIGABYTE released new versions of two creator laptop series in 2023. The latest version of products has improved its environmental friendliness through innovation in material selection, structure redesign, and appearance treatment.

1. The aluminum used for laptop cases is 100% from recycled aluminum ingots and scraps collected from other aluminum processing.
2. The eco-OLED display uses one-eighth the amount of plastic as a traditional OLED, and its production has been certified to be 100% recyclable by UL Zero Waste To Landfill.
3. Change the appearance treatment processing from coating to anodizing to avoid using highly polluting and emission-intensive solvents and inks.

**Have you estimated the avoided emissions of this low-carbon product(s) or service(s)**

Yes

**Methodology used to calculate avoided emissions**

Other, please specify (GHG Protocol Scope 3 Guidance, SimaPro 9.1 database)

**Life cycle stage(s) covered for the low-carbon product(s) or services(s)**

Cradle-to-gate

**Functional unit used**

Emissions from the production for laptop products, focusing on the case, the display, and the appearance treatment processing (kg-CO2e/piece)

**Reference product/service or baseline scenario used**

The estimated emissions from the traditional production processes of a laptop product's case, display, and appearance treatment.

**Life cycle stage(s) covered for the reference product/service or baseline scenario**

Cradle-to-gate

**Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario**

0.00952

**Explain your calculation of avoided emissions, including any assumptions**

Calculations of avoided emissions compare the carbon footprints of the original and innovative processing of the laptop's case, OLED display, and appearance. For a piece of AERO 16, the innovative processing mentioned above can reduce 9.52 kg-CO2e by incorporating the following:

1. 5.96 kg of emissions is avoided by using recycled aluminum ingots and scraps collected from other aluminum processing instead of virgin aluminum ingots. The data estimation refers to the Taiwan EPA Product Carbon Footprint Platform database.
2. 1 kg of emission is avoided by changing appearance processing from coating to anodizing, consequently using fewer chemical solvents and inks. The emission factors are derived from the SimaPro 9.1 database.
3. 2.56kg of emissions is saved from narrowing down the screen frame and choosing an eco-OLED display composed of one-eighth of plastics compared to a traditional OLED display. The estimation is made based on the data provided by the OLED display supplier and the Taiwan EPA Product Carbon Footprint Platform database.

Given that 5000 pcs of these laptop models are sold annually, we could estimate that 47.6 t-CO2e can be avoided per year.

[Explanation for revenue ratio]

The laptop models specified here have just been launched in January 2023. Thus no incomes were generated from these products in 2022.

**Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year**

0

**C5. Emissions methodology**

**C5.1**

**(C5.1) Is this your first year of reporting emissions data to CDP?**

No

**C5.1a**

**(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?**

**Row 1**

**Has there been a structural change?**

No

**Name of organization(s) acquired, divested from, or merged with**

<Not Applicable>

**Details of structural change(s), including completion dates**

<Not Applicable>

C5.1b

**(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?**

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in boundary	The greenhouse gas inventory boundary of GIGABYTE has expanded twice since 2021. Compared to the base year, the change in reporting boundary includes: 1. The Taipei Silicon Valley Offices where four of GIGABYTE's main subsidiaries in Taiwan, Bestyield International, G-STYLE, GIGAIPC, and Selita Precision are based have been included in the boundary since 2021, and then, in 2022, it extended by two more layers. 2. The boundary was also extended at the Headquarters building by one more layer. The area was rented in order to acquire more space for product research and design and to increase the number of employees.

C5.1c

**(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?**

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	No, because the impact does not meet our significance threshold	<Not Applicable>	The significant threshold for resetting the base year or recalculating the base year emissions is 5%. In 2022, the emissions from the extended boundary, i.e., Taipei Silicon Valley Offices and one layer at the Headquarters, were 837.34 t-CO <sub>2</sub> e, which accounted for just 2.81% of the total emissions without the extended boundary (27,127.75 t-CO <sub>2</sub> e).	No

C5.2

**(C5.2) Provide your base year and base year emissions.**

**Scope 1**

**Base year start**

January 1 2009

**Base year end**

December 31 2009

**Base year emissions (metric tons CO<sub>2</sub>e)**

1105.16

**Comment**

The base-year emission coverage includes the Headquarters and the Nanping Factory in Taiwan, as well as the Dongguan Factory and the Ningbo Factory in China.

**Scope 2 (location-based)**

**Base year start**

January 1 2009

**Base year end**

December 31 2009

**Base year emissions (metric tons CO<sub>2</sub>e)**

47851.98

**Comment**

The base-year emission coverage includes the Headquarters and the Nanping Factory in Taiwan, as well as the Dongguan Factory and the Ningbo Factory in China.

**Scope 2 (market-based)**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

Not applicable.

**Scope 3 category 1: Purchased goods and services**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

GIGABYTE has inventoried the emissions from Scope 3 category 1 every year since 2012 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 2: Capital goods**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GIGABYTE has inventoried the emissions from Scope 3 category 2 every year since 2018 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GIGABYTE has inventoried the emissions from Scope 3 category 3 every year since 2018 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 4: Upstream transportation and distribution**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GIGABYTE has inventoried the emissions from Scope 3 category 4 every year since 2015 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 5: Waste generated in operations**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GIGABYTE has inventoried the emissions from Scope 3 category 5 every year since 2015 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 6: Business travel**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GIGABYTE has inventoried the emissions from Scope 3 category 6 every year since 2015 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 7: Employee commuting**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GIGABYTE has inventoried the emissions from Scope 3 category 7 every year since 2015 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 8: Upstream leased assets**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

Not applicable.

**Scope 3 category 9: Downstream transportation and distribution**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GIGABYTE has inventoried the emissions from Scope 3 category 9 every year since 2016 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 10: Processing of sold products**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GI GABYTE has inventoried the emissions from Scope 3 category 10 every year since 2012 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 11: Use of sold products**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GI GABYTE has inventoried the emissions from Scope 3 category 11 every year since 2012 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 12: End of life treatment of sold products**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

GI GABYTE has inventoried the emissions from Scope 3 category 12 every year since 2012 according to the methodologies provided by the GHG Protocol but has yet to set up targets for Scope 3 emissions.

**Scope 3 category 13: Downstream leased assets**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

Not applicable

**Scope 3 category 14: Franchises**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

Not applicable

**Scope 3 category 15: Investments**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

Not applicable

**Scope 3: Other (upstream)**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

Not applicable

**Scope 3: Other (downstream)**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

Not applicable

**(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

ISO 14064-1

Taiwan - GHG Reduction Act

The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Standard

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**C6. Emissions data**

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**C6.1**

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**(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?**

**Reporting year**

**Gross global Scope 1 emissions (metric tons CO2e)**

627.806

**Start date**

<Not Applicable>

**End date**

<Not Applicable>

**Comment**

This is the gross global scope 1 emissions of GIGABYTE, of which the boundary includes the Headquarters, Nanping Factory, and Taipei Silicon Valley Offices, where four major subsidiaries are, in Taiwan, and Ningbo Factory and Dongguan Factory in China.

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**C6.2**

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**(C6.2) Describe your organization's approach to reporting Scope 2 emissions.**

**Row 1**

**Scope 2, location-based**

We are reporting a Scope 2, location-based figure

**Scope 2, market-based**

We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

**Comment**

Taiwan amended the Renewable Energy Development Act in 2020 to implement electricity liberalization. The development of renewable energy in Taiwan, however, is still in its infancy. There are still many issues to be resolved, including land acquisition, environmental impact assessments, and the impact on local-level development. As a result, Taiwan's renewable electricity supply is currently insufficient. Small and medium-sized businesses find it difficult to purchase renewable electricity from private renewable energy generators, and so does GIGABYTE. Because we consume relatively less electricity than other companies in the same industry in Taiwan, finding a matched renewable power generator is difficult.

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**C6.3**

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**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?**

**Reporting year**

**Scope 2, location-based**

27283.639

**Scope 2, market-based (if applicable)**

<Not Applicable>

**Start date**

<Not Applicable>

**End date**

<Not Applicable>

**Comment**

This is the gross global scope 2 emissions of GIGABYTE, of which the boundary includes the Headquarters, Nanping Factory, and Taipei Silicon Valley Offices, where four major subsidiaries are, in Taiwan, and Ningbo Factory and Dongguan Factory in China.

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**C6.4**

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**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?**

No

**(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.****Purchased goods and services****Evaluation status**

Relevant, calculated

**Emissions in reporting year (metric tons CO2e)**

892256.6

**Emissions calculation methodology**

Average data method

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

100

**Please explain**

GIGABYTE measures and tracks the change in Category 1 every year since 2012 since it is one of our highly material scope 3 categories for our business operations.

[Use of suppliers' data]

To calculate, we need the number and weight of purchased components provided by upstream suppliers. Suppliers are required to submit detailed information about their products to our factories, which will be included in our bill of materials (BOM).

[Calculation methodology]

In 2017, GIGABYTE established an internal Product Carbon Footprint Calculation System equipped with a comprehensive database, which includes emission data for all components purchased from our suppliers. The Platform enables us to calculate the carbon footprint of a developed product, a developing product, or a prospective product in its conceptual stage.

To calculate emissions from purchased goods, we collect procurement information from Jan 1 2022 to Dec 31 2022 from all business units (BUs). After sorting and counting by part number, the total purchased quantity and the net weight are input into the Product Carbon Footprint Calculation System.

The Platform applies the average-data method as suggested in "Category 1: Purchased goods and services", from Technical Guidance for Calculating Scope 3 Emissions published by the Greenhouse Gas Protocol. The formula is as follows: Emissions =  $\Sigma$  (unit of purchased goods (pieces) × emission factor of purchased goods per reference unit (kg CO2e/piece)). The emission factors used in the Platform mainly refer to the Ecoinvent 3 (SimaPro 9.1).

[Verification]

The emissions from Scope 3 Category 1 in 2022 have been verified by a third party. Please find the verification statement in C10.1c.

**Capital goods****Evaluation status**

Relevant, calculated

**Emissions in reporting year (metric tons CO2e)**

1217.49

**Emissions calculation methodology**

Average spend-based method

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

According to our analysis of materiality, indirect emissions from capital goods are of lower materiality. Despite this, we still calculate our carbon footprint every year since 2018 to get a better understanding of our environmental impact.

[Use of suppliers' data]

Calculations are primarily based on financial reports rather than directly from suppliers.

[Calculation methodology]

In the financial report, we collect the capital goods expenditures and exclude depreciation expenses from the capital goods that were not purchased during the reporting period. After that, we enter the number of purchase expenditures into the "Scope 3 Evaluator" developed by the Greenhouse Gas Protocol to obtain the result.



## Fuel-and-energy-related activities (not included in Scope 1 or 2)

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

776.94

### Emissions calculation methodology

Average data method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

### Please explain

Our materiality analysis shows that indirect emissions from this category have a relatively low materiality level. We have, however, decided to calculate this category since 2018 in order to gain a more complete understanding of our carbon footprint.

[Use of suppliers' data]

A portion of the data and figures required for the calculation are provided by Taipower Company, which supplies electricity to GIGABYTE. Accordingly, 50% of emissions are calculated using information from suppliers.

[Calculation methodology]

The emissions from upstream fuel-and-energy-related activities calculated here are based on the lifetime emissions of the electricity generators that generate the electricity that GIGABYTE purchases and uses. The primary source of our GHG emissions is electricity consumption, which represents approximately 95% of our gross scope 1+2 emissions. However, due to the lack of related information in China, we can only calculate such emissions for Taiwan-based sites.

To calculate the upstream emissions of electricity GIGABYTE purchases, we use the "average-based method" suggested by the Greenhouse Gas Protocol. The emissions from the combustion stage of power generation are excluded to prevent double counting. We first collected the national emission factor [A] of electricity from the Bureau of Energy, Ministry of Economic Affairs, Taiwan. The factor [A] takes into account the total emissions from combustion processes by power generators but does not include the emissions from fuel or electricity used for the generators' operation (e.g. offices). Then, we obtain the gross emissions [B] and the total power generation [C] from Taipower Company, the primary power generator in Taiwan which provides more than 80% of electricity, from its Sustainability Report. Afterward, we calculate the lifetime emission factor of Taipower Company [D] by using the formula  $\frac{[B]-([A]*[C])}{C}$ . Finally, we multiply the factor [D] by our total electricity consumption in the reporting year to get the result.

## Upstream transportation and distribution

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

58.32

### Emissions calculation methodology

Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

### Please explain

The material assessment for this category is low due to two factors. We had little influence over indirect emissions resulting from upstream transportation. Also, around three-quarters of components and materials are purchased locally, so emissions are not too high. In spite of that, we have calculated Category 4 emissions annually since 2016 for the purpose of improving our supply chain management.

[Use of suppliers' data]

In order to calculate Scope 3 Category 4, GIGABYTE needs both the total quantity of delivered products as well as the address information from our suppliers. We require suppliers to provide basic information about their companies and products. The percentage of data collected from suppliers is therefore 100%. However, due to a lack of geographical data in the China region, we can only measure emissions at Taiwan-based sites for this category.

[Calculation methodology]

The distance-based method, as proposed in "Category 4: Upstream transportation and distribution" from the Technical Guidance for Calculating Scope 3 Emissions published by the Greenhouse Gas Protocol, is used to calculate emissions from upstream transportation and distribution. The formula is as follows: Emissions =  $\Sigma$  (mass of goods purchased (metric ton) × distance travelled in transport leg (km) × emission factor of transport vehicle type (kg CO<sub>2</sub>e/ton/km)).

To calculate emissions, we first collect purchase orders from our Channel Solution BU and sum up the total weight of goods each supplier delivered to GIGABYTE's factories in 2022. As for the transport distance, since we cannot obtain actual distance data from logistics companies, we use Google Maps to calculate the travel distance of each domestic delivery.

For international deliveries, we refer to SeaRate.com, a public port-to-port shipping distance calculator, and PIER2PIER2.COM (<http://www.pier2pier.com/Co2/>) to obtain port-to-port shipping and flying distances. A truck's emission factor in Taiwan refers to the Carbon Footprint Calculation Platform established by the Taiwan Environmental Protection Agency. Cross-national shipping and air transport emission factors are obtained from the latest "Greenhouse Gas Protocol Emission Calculation - Emission Factors from Cross-Sector Tools".

## Waste generated in operations

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

1238.66

### Emissions calculation methodology

Distance-based method

Waste-type-specific method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

### Please explain

Even though the indirect emissions from waste generated in our operations are not large, GIGABYTE can still control them rather actively in terms of emission reductions. We have calculating this category since 2015 every year to get a better understanding of its carbon footprint.

[Use of suppliers' data]

The calculations require data from each GIGABYTE base, namely the headquarters and three factories in Taiwan and China. Each base provides data based on its own records as well as that of the cooperative waste collection companies. Therefore, 50% of the data used for calculation comes from suppliers.

[Calculation methodology]

To calculate, we use the waste-type-specific method suggested in the Technical Guidance for Calculating Scope 3 Emissions published by the Greenhouse Gas Protocol in "Category 5: Waste generated in operations." The formula is  $\Sigma(\text{waste produced (metric ton)} \times \text{waste type and waste treatment specific emission factor (kg-CO}_2\text{e/metric ton)})$ .

We require each operational base to provide quantitative data on general waste, recyclable waste, and toxic waste generated during the reporting period. Following that, for waste of Taiwan bases, emission factors for treating general waste, recyclable waste, and toxic waste are derived from the Taiwan EPA's Carbon Footprint Calculation Platform. For waste generated by China bases, emission factors are taken from the most relevant rest-of-world {RoW} factors from the Ecoinvent 3 database (SimaPro 9.1). Total emissions are then calculated by summing up the total emissions generated by each type of waste treatment.

[Verification]

Scope 3 Category 5 emissions in 2022 have been verified by a third party. Please find the verification statement in C10.1c.

## Business travel

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

128.35

### Emissions calculation methodology

Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Despite GIGABYTE's production bases in Taiwan and China, our suppliers, related companies, dealers, distributors, and customers are spread around the globe. Traveling overseas for business used to be quite common before the COVID-19 pandemic. The category was first calculated in 2015, primarily based on emissions generated by international air travel.

[Use of suppliers' data]

This category is calculated using data derived from internal business travel records. Afterward, we input the departure and arrival cities for each business trip to the International Civil Aviation Organization (ICAO) Carbon Emissions Calculator to automatically calculate the distance and emissions. The data are therefore not from suppliers or partners in the value chain.

[Calculation methodology]

We refer to the distance-based method to calculate travel emission:  $\Sigma(\text{distance traveled by vehicle type (passenger-km)} \times \text{vehicle-specific emission factor (kg-CO}_2\text{e/passenger-km)})$ , as suggested in "Category 6: Business Travel", from the Technical Guidance for Calculating Scope 3 Emissions published by the Greenhouse Gas Protocol.

First, we collect employees' travel records for overseas business by administration department employees. Each record contains the departure and arrival cities. By using the Carbon Emissions Calculator established by the International Civil Aviation Organization (ICAO), we calculate the emissions from each air travel record. Lastly, we total the emissions generated by business travels for the reporting year by adding up each travel record's emissions.

[Verification]

Scope 3 Category 6 emissions in 2022 have been verified by a third party. Please find the verification statement in C10.1c.

## Employee commuting

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

1867.53

### Emissions calculation methodology

Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

In 2015, we began conducting employee commuting surveys and calculating Category 7 emissions. Initially, the survey was conducted only at Taiwanese bases. In 2022, GIGABYTE included two factories in China in the inventory boundary, so the emission figure provided here includes employee commute emissions throughout all of its main bases.

[Use of suppliers' data]

Activity data are collected by conducting a questionnaire survey directly with employees at each base. An average of 26% of questionnaires are returned. The emission factors of different vehicles in Taiwan are based on the Taiwan EPA's Carbon Footprint Calculation Platform, while in China, the Ecoinvent 3 database is used (SimaPro 9.1). Therefore, no data are from suppliers or value chain partners.

[Calculation methodology]

We combine the distance-based method with the average-data method suggested in "Category 7: Employee Commuting" of the Technical Guidance for Calculating Scope 3 Emissions published by the Greenhouse Gas Protocol. As a first step, we send anonymous questionnaires to employees to collect their commuting data in the reporting year. After receiving sufficient valid questionnaires (samples), we use the formula:  $\Sigma$  (daily one-way distance between home and work  $\times$  2  $\times$  number of commuting days in the reporting year) to determine the total traveling distance of each vehicle type.

The overall emissions generated from employee commuting of the Company are then estimated by summing the emissions from responding employees and dividing them by the questionnaire response rate.

[Verification]

Scope 3 Category 7 emissions in 2022 have been verified by a third party. Please find the verification statement in C10.1c.

## Upstream leased assets

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

We do not lease assets upstream. Thus this category is not applicable to GIGABYTE.

## Downstream transportation and distribution

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

28051.45

### Emissions calculation methodology

Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

GIGABYTE began measuring Category 9 emissions annually in 2016 to improve our value chain management. 95% of GIGABYTE's products are sold internationally, either by air or by ship. Therefore, the number of sales, the location of target markets, as well as the mode of transportation greatly influence the emissions. In other words, the farther the target markets, the greater the emissions.

[Use of suppliers' data]

Here, downstream transportation and distribution emissions are calculated based on sales of motherboards and graphics cards, which represent 79.6% of all products produced in 2022. Data comes mainly from internal records of sales, including the amounts delivered from factories to different countries. Emission factors are based on Taiwan EPA and "Greenhouse Gas Protocol Emission Calculation - Emission Factors from Cross-Sector Tools". There are no data from suppliers or value chain partners.

[Calculation methodology]

We refer to the formula of the distance-based method:  $\Sigma$  (mass of goods sold to a country (ton)  $\times$  distance traveled in transport leg (km)  $\times$  emission factor of vehicle type (t-CO2e per ton-kilometer), as suggested in "Category 9: Downstream transportation and distribution", from Technical Guidance for Calculating Scope 3 Emissions published by Greenhouse Gas Protocol. The emission factors for air transport, ocean shipping, and land transportation are based on the Greenhouse Gas Protocol Emission Calculation Tools and Taiwan EPA. Because it is not possible to get actual transport distances from logistics companies, we refer to Ports.com (<http://ports.com/sea-route/>) for port-to-port shipping distances and PIER2PIER.COM (<https://www.pier2pier.com/Co2/>) for port-to-port flying distances. The total emissions from downstream transportation and distribution are calculated by summing up the transport emissions of all products sold to each country.

## Processing of sold products

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

2312.99

### Emissions calculation methodology

Average data method  
Average product method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

30

### Please explain

These emissions result from the assembling stage of our customers when they assemble our semi-finished motherboards into desktop PCs or servers. Due to the difficulty in obtaining processing data or emission factors from our customers, downstream processing has a moderate materiality level. Even so, we have tracked this Category's change annually since 2012 using simplified methods.

[Use of suppliers' data]

In order to calculate the emissions under this category, we need the amount of semi-finished products delivered to our downstream customers, which can be directly obtained from their orders. As a result, approximately 30% of the data comes from value chain partners.

[Calculation methodology]

We refer to the formula of processing of sold intermediate product:  $\Sigma$  (mass of sold intermediate product (kg)  $\times$  emission factor of processing of sold products (kg CO2e/kg of the final product)), as suggested in "Category 10: Processing of sold products", from Technical Guidance for Calculating Scope 3 Emissions published by Greenhouse Gas Protocol. By counting the orders we receive from our customers, we determine how many semi-finished motherboards we sell in the reporting year. Then we refer to DELL and FUJITSU's published carbon footprint reports to get the emission figures we need at the assembly stage (kg-CO2e per product), since we cannot get emission figures directly from our customers. After multiplying the number of semi-finished motherboards sold by the emission figure per product, the result is obtained.

## Use of sold products

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

5689602.28

### Emissions calculation methodology

Methodology for direct use phase emissions, please specify (Energy Star Specifications for Desktop Computers)

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Scope 3 category 11 is the most important to our business operations. It accounts for 86% of scope 3 emissions. The methodology has been amended greatly in 2021 in order to meet ISO 14064-1:2018 standard. This category encompasses seven of GIGABYTE's main products, including motherboards, VGAs, servers, mini PCs, laptops, monitors, and power supplies.

[Use of suppliers' data]

Calculation requires data on power consumption and sales for each type of product, which are provided by the R&D department and the internal ERP system. Additionally, we collect grid emission factors for Taiwan, North America, Europe, China, and other regions from local governments, regional associations, the GHG Protocol, and Ecoinvent 3 (SimaPro9.1). Therefore, no data are obtained from value chain partners.

[Calculation methodology]

The calculating method refers to the sold intermediate product formula:  $\Sigma$  (total final products sold  $\times$  total lifetime uses of final sold product  $\times$  emissions per use of the sold final product (kg CO<sub>2</sub>e/use)), as suggested in "Category 11: Use of sold products", from Technical Guidance for Calculating Scope 3 Emissions published by Greenhouse Gas Protocol.

Each product type contains a variety of models. We classify models according to component features (e.g. chipsets) in order to simplify the quantifying process and then choose a representative model per group to take power consumption testing.

For the use time of each product per year, we refer to Energy Star Specifications for Desktop Computers version 5.0 and R&D department experiences. Besides, we assume products' service life based on the warranty period disclosed on the official GIGABYTE website.

Lastly, each product's total electricity use can be calculated by multiplying its power consumption data, use time per year, service life, and sales amount in the reporting year. By converting the grid emission factors from different sales regions and adding them together, we then determine the total emissions for this category.

[Verification]

Scope 3 Category 11 emissions in 2021 have been verified by a third party. Please find the verification statement in C10.1c.

## End of life treatment of sold products

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

8089.73

### Emissions calculation methodology

Waste-type-specific method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

75

### Please explain

Category 12 is identified as one of GIGABYTE's material scope 3 categories. We have been measuring and tracking it since 2012. It consists of two parts. The first part is the emissions from the end-of-life treatment of seven types of sold products, including motherboards, server boards, servers, VGAs, laptops, mini PCs, and monitors. Another part is emissions from packaging disposal treatment.

[Use of suppliers' data]

In order to estimate the weight of a product, we need the details of the components and materials used in the product, as well as the packaging. These are provided by upstream suppliers. Other essential data, such as sales amount and emission factors of end-of-life treatment, are obtained from the internal ERP system and Ecoinvent 3.0 (SimaPro 9.1) database. Thus, around 75% of the data came from suppliers.

[Calculation methodology]

We refer to the following formula for calculation:  $\Sigma$  (total mass of sold products and packaging from the point of sale to end of life after consumer use (kg)  $\times$  % of total waste being treated by waste treatment method  $\times$  emission factor of waste treatment method (kg-CO<sub>2</sub>e/kg)), as suggested in "Category 12: End of Life Treatment of Sold Products", from Technical Guidance for Calculating Scope 3 Emissions published by Greenhouse Gas Protocol.

GIGABYTE has published Product Environmental Reports for most of its product types since 2018. We average the weights for each product type based on published product reports. The total mass of sold products is calculated by multiplying the weight and the total sales amount.

We derive our total packaging mass from our internal ERP system. The waste treatment method is determined by the type of packaging materials (e.g., carton, colored paper, PET, PP), which have also been evaluated during product life cycle assessments. And the emission factors of different waste treatment methods, including electronic equipment and different types of packaging material, are obtained from the global average data {GLO} in Ecoinvent 3.0 (SimaPro 9.1).

[Verification]

Scope 3 Category 12 emissions in 2022 have been verified by a third party. Please find the verification statement in C10.1c.

#### Downstream leased assets

**Evaluation status**

Not relevant, explanation provided

**Emissions in reporting year (metric tons CO2e)**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

We do not lease assets. Thus this category is not applicable to GIGABYTE.

#### Franchises

**Evaluation status**

Not relevant, explanation provided

**Emissions in reporting year (metric tons CO2e)**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

We do not operate any franchise. Thus this category is not applicable to GIGABYTE.

#### Investments

**Evaluation status**

Not relevant, explanation provided

**Emissions in reporting year (metric tons CO2e)**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

We do not make investment. Thus this category is not applicable to GIGABYTE.

#### Other (upstream)

**Evaluation status**

Not relevant, explanation provided

**Emissions in reporting year (metric tons CO2e)**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

No other upstream indirect emissions are identified.

#### Other (downstream)

**Evaluation status**

Not relevant, explanation provided

**Emissions in reporting year (metric tons CO2e)**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

No other downstream indirect emissions are identified.

### C6.7

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**(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?**

No

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO<sub>2</sub>e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

**Intensity figure**

0.26

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO<sub>2</sub>e)**

27911.45

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

107263.64

**Scope 2 figure used**

Location-based

**% change from previous year**

5.96

**Direction of change**

Increased

**Reason(s) for change**

Change in output

Change in revenue

Change in physical operating conditions

**Please explain**

The gross emissions in 2021 were 29,937.95 metric tons, and in 2022 they decreased by 6.77% to 27,911.45 metric tons. However, the revenue decreases more.

GIGABYTE's revenue in 2021 was TWD121,905.36 million but decreased to TWD107,263.65 million in 2022. The annual decrease rate was 12.01%, greater than that of emission reduction. Thus, emissions per TWD million revenue increased by 5.96% in 2022, from 0.25 metric tons per million in 2021 to 0.26 metric tons per million.

Due to demands slowing down after the epidemic, GIGABYTE's revenue in 2022 decreased. In addition, as destocking was prioritized in 2022, factories reduced production volumes. In spite of this, the factory still needs to maintain basic operations, so emissions did not decrease in proportion to production.

**Intensity figure**

4.66

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO<sub>2</sub>e)**

27911.45

**Metric denominator**

full time equivalent (FTE) employee

**Metric denominator: Unit total**

5992

**Scope 2 figure used**

Location-based

**% change from previous year**

16.76

**Direction of change**

Decreased

**Reason(s) for change**

Change in output

Change in boundary

Change in physical operating conditions

**Please explain**

The gross emissions in 2021 were 29,937.95 metric tons, and in 2022 they decreased by 6.77% to 27,911.45 metric tons, primarily due to declining production volumes and improved production efficiency. Employees covered in 2021 were 5,350, and in 2022, the number increased to 5,992, partially because the inventory boundary was slightly expanded (refer to C5.1b). Thus, emissions per capita decreased by 16.76% from 5.60 metric tons to 4.66 metric tons from 2021 to 2022.

**Intensity figure**

2.86

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO<sub>2</sub>e)**

27911.45

**Metric denominator**

unit of production

**Metric denominator: Unit total**

9750.45

**Scope 2 figure used**

Location-based

**% change from previous year**

14.88

**Direction of change**

Increased

**Reason(s) for change**

Change in output

Change in physical operating conditions

**Please explain**

The gross emissions in 2021 were 29,937.95 metric tons, and in 2022 they decreased by 6.77% to 27,911.45 metric tons. However, the production volume decreased greater.

This intensity is measured in t-CO<sub>2</sub>e per 1,000 motherboard equivalent pieces. The number of productions in 2021 was 12,014.96 thousand equivalent pieces, but in 2022 it decreased to 9,750.45 thousand equivalent pieces, with an 18.85% decrease. As a result, emissions per thousand equivalent pieces increased by 14.88% from 2.49 metric tons in 2021 to 2.86 metric tons in 2022.

In 2022, GIGABYTE's production volume dropped due to a slowdown in demand after the epidemic, as well as destocking being prioritized. However, the factory still needs to maintain basic operations, so emissions did not decrease in proportion to production.

**C7. Emissions breakdowns****C7.1****(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?**

Yes

**C7.1a****(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).**

Greenhouse gas	Scope 1 emissions (metric tons of CO <sub>2</sub> e)	GWP Reference
CO <sub>2</sub>	86.837	IPCC Sixth Assessment Report (AR6 - 100 year)
CH <sub>4</sub>	265.773	IPCC Sixth Assessment Report (AR6 - 100 year)
N <sub>2</sub> O	1.117	IPCC Sixth Assessment Report (AR6 - 100 year)
HFCs	274.079	IPCC Sixth Assessment Report (AR6 - 100 year)

**C7.2****(C7.2) Break down your total gross global Scope 1 emissions by country/area/region.**

Country/area/region	Scope 1 emissions (metric tons CO <sub>2</sub> e)
Taiwan, China	404.918
China	222.888

**C7.3****(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.**

By business division

**C7.3a****(C7.3a) Break down your total gross global Scope 1 emissions by business division.**

Business division	Scope 1 emissions (metric ton CO <sub>2</sub> e)
Xindian Headquarters, Taiwan	293.269
Nanping Factory, Taiwan	41.165
Ningbo Factory, China	70.484
Dongguan Factory, China	24.619
Taipei Silicon Valley Park Office, Taiwan	198.269



## C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/area/region.

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Taiwan, China	10415.115	0
China	16868.524	0

## C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

### C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Xindian Headquarters, Taiwan	3830.758	0
Nanping Factory, Taiwan	476.459	0
Ningbo Factory, China	6107.898	0
Dongguan Factory, China	9875.28	0
Taipei Silicon Valley Park Office, Taiwan	6993.244	0

## C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

No

## C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

### C7.9a

**(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.**

	Change in emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	After analysis, we attribute the change of gross scope 1+2 emissions in 2022 to internal emissions reduction activities and changes in output, electricity emission factors used in the calculating methods, inventory boundary, and physical operating conditions. The change in renewable energy consumption is not identified as a reduction factor in 2022.
Other emissions reduction activities	305.46	Decreased	1.02	The emission reduction actions listed in C.4.3b contributed to cutting 305.46 t-CO2e in 2022. The Scope 1+2 emission in 2021 was 27,911.44 t-CO2e. The calculation formula is: $(-305.46) / 27,911.44 = -1.02\%$
Divestment	0	No change	0	After analysis, we attribute the change of gross scope 1+2 emissions in 2022 to internal emissions reduction activities and changes in output, electricity emission factors used in the calculating methods, inventory boundary, and physical operating conditions. Divestment was not identified as a reduction factor in 2022.
Acquisitions	0	No change	0	After analysis, we attribute the change of gross scope 1+2 emissions in 2022 to internal emissions reduction activities and changes in output, electricity emission factors used in the calculating methods, inventory boundary, and physical operating conditions. Acquisitions were not identified as a reduction factor in 2022.
Mergers	0	No change	0	After analysis, we attribute the change of gross scope 1+2 emissions in 2022 to internal emissions reduction activities and changes in output, electricity emission factors used in the calculating methods, inventory boundary, and physical operating conditions. Mergers were not identified as a reduction factor in 2022.
Change in output	2357.5	Decreased	7.87	In 2022, GIGABYTE's production volume dropped due to a slowdown in demand after the epidemic, as well as destocking being prioritized. The total production equivalent pieces in 2022 decreased by 18.85% compared to the previous year. After excluding necessary energy consumption for factories' basic operation, we attribute 2,357.50 t-CO2e of emission reduction to the decrease in production. The Scope 1+2 emission in 2021 was 27,911.44 t-CO2e. Thus, the calculation formula is: $(2,357.50) / 27,911.44 = -7.87\%$
Change in methodology	144.72	Increased	0.48	The national electricity emission factor in 2022 adjusted from 0.502 kg-CO2e/kWh to 0.509 kg-CO2e/kWh. That means even we consumed the same level of electricity in 2022 as we did in 2021. The emission would increase by 144.72 t-CO2e purely due to the change in emission factor. The Scope 1+2 emission in 2021 was 27,911.44 t-CO2e. Thus, the calculation formula is: $(144.72) / 27,911.44 = +0.48\%$ .
Change in boundary	581.06	Increased	1.94	As mentioned in C5.1b, the reporting boundary extends to cover more layers in the Headquarters and Taipei Silicon Valley Offices. The emissions from these additional areas in 2022 were 581.06 t-CO2e. The Scope 1+2 emission in 2021 was 27,911.44 t-CO2e. Thus, the calculation formula is: $(+581.06) / 27,911.44 = +1.94\%$ .
Change in physical operating conditions	89.35	Decreased	0.3	Following the slight decrease in demands in 2022, the total energy consumption of the Headquarters, where research and design, sales, and procurement departments are centered, slightly decreased in 2022, leading to a reduction of approximately 89.35 t-CO2e. The Scope 1+2 emission in 2021 was 27,911.44 t-CO2e. Thus, the calculation formula is: $(-89.35) / 27,911.44 = -0.30\%$ .
Unidentified	0	No change	0	After analysis, we attribute the change of gross scope 1+2 emissions in 2022 to internal emissions reduction activities and changes in output, electricity emission factors used in the calculating methods, inventory boundary, and physical operating conditions. No other unidentified factors.
Other	0	No change	0	After analysis, we attribute the change of gross scope 1+2 emissions in 2022 to internal emissions reduction activities and changes in output, electricity emission factors used in the calculating methods, inventory boundary, and physical operating conditions. No other significant factors are identified.

## C7.9b

**(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?**

Location-based

## C8. Energy

### C8.1

**(C8.1) What percentage of your total operational spend in the reporting year was on energy?**

More than 0% but less than or equal to 5%

### C8.2

**(C8.2) Select which energy-related activities your organization has undertaken.**

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

### C8.2a

**(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.**

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	273.86	273.86
Consumption of purchased or acquired electricity	<Not Applicable>	0	41061.16	41061.16
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	1464.68	1464.68
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	0	42799.7	42799.7

**C8.2b**

**(C8.2b) Select the applications of your organization's consumption of fuel.**

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

**C8.2c**

**(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**

**Sustainable biomass**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Other biomass**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Other renewable fuels (e.g. renewable hydrogen)**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Coal**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Oil**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

265.58

**MWh fuel consumed for self-generation of electricity**

162.96

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

In 2022, 162.96 MWh of diesel oil was consumed for generating electricity; 102.62 MWh of gasoline and diesel oil were consumed for Company's cars; the total consumption of oil was therefore 265.58 MWh.

**Gas**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

8.28

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

8.28

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

In 2022, 8.28 MWh of LPG was consumed for boilers in factories.

**Other non-renewable fuels (e.g. non-renewable hydrogen)**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Total fuel**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

273.86

**MWh fuel consumed for self-generation of electricity**

162.96

**MWh fuel consumed for self-generation of heat**

8.28

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

In 2022, 162.96 MWh of diesel oil was consumed for generating electricity, 8.28 MWh of LPG was consumed for boilers in factories, and 102.62 MWh of gasoline and diesel oil were consumed for Company's cars. So the total consumption of oil was 273.86 MWh.

C8.2g

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(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

**Country/area**

Taiwan, China

**Consumption of purchased electricity (MWh)**

20556.94

**Consumption of self-generated electricity (MWh)**

0

**Is this electricity consumption excluded from your RE100 commitment?**

<Not Applicable>

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

20556.94

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**Country/area**

China

**Consumption of purchased electricity (MWh)**

20504.23

**Consumption of self-generated electricity (MWh)**

0

**Is this electricity consumption excluded from your RE100 commitment?**

<Not Applicable>

**Consumption of purchased heat, steam, and cooling (MWh)**

1464.68

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

21968.91

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C9. Additional metrics

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C9.1

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**(C9.1) Provide any additional climate-related metrics relevant to your business.**

**Description**

Waste

**Metric value**

2214.82

**Metric numerator**

Metric tons

**Metric denominator (intensity metric only)**

**% change from previous year**

10.62

**Direction of change**

Decreased

**Please explain**

GIGABYTE generated 2,478.00 metric tons of waste in 2021, meaning that waste in 2022 has decreased by 10.62%. Reductions in waste generation were mainly due to declining demand after the pandemic and destocking during the year.

The emissions from generated waste in operation are categorized as medium-high material and are therefore verified by a third party since 2021. For calculating emissions, it is essential to obtain the quantity and type of generated waste as we use the waste-type-specific method suggested by the Greenhouse Gas Protocol-Corporate Value Chain (Scope 3) Standard. Therefore, third parties also verify the waste figures.

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**Description**

Other, please specify (Water use)

**Metric value**

252964

**Metric numerator**

Metric tons

**Metric denominator (intensity metric only)**

**% change from previous year**

2.42

**Direction of change**

Decreased

**Please explain**

The quantity of water use in 2021 by GIGABYTE was 259,235, indicating that the water use in 2022 decreased by 2.42%. GIGABYTE does not consume mass water as the factories only have assembly lines.

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**C10. Verification**

**C10.1**

**(C10.1) Indicate the verification/assurance status that applies to your reported emissions.**

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

---

**C10.1a**

**(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.**

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

**Attach the statement**

1

2022\_ISO14064\_GIGA-BYTE TECHNOLOGY\_EN.pdf

**Page/ section reference**

pp.1-7 in the 2022 GIGABYTE Greenhouse Gas Verification Statement by SGS Taiwan Ltd. Referring to the ISO14064-1 standard, "scope 1 emission" in the statement is phrased as "direct emissions".

**Relevant standard**

ISO14064-1

**Proportion of reported emissions verified (%)**

100

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**C10.1b**

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**(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.**

**Scope 2 approach**

Scope 2 location-based

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

**Attach the statement**

1

2022\_ISO14064\_GIGA-BYTE TECHNOLOGY\_EN.pdf

**Page/ section reference**

pp.1-7 in the 2022 GIGABYTE Greenhouse Gas Verification Statement by SGS Taiwan Ltd. Referring to the ISO14064-1 standard, "scope 2 emission" in the statement is phrased as "indirect emissions related to imported energy".

**Relevant standard**

ISO14064-1

**Proportion of reported emissions verified (%)**

100

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**C10.1c**

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**(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.**

**Scope 3 category**

- Scope 3: Purchased goods and services
- Scope 3: Waste generated in operations
- Scope 3: Business travel
- Scope 3: Employee commuting
- Scope 3: Use of sold products
- Scope 3: End-of-life treatment of sold products

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Limited assurance

**Attach the statement**

1  
2022\_ISO14064\_GIGA-BYTE TECHNOLOGY\_EN.pdf

**Page/section reference**

pp.1-7 in the 2022 GIGABYTE Greenhouse Gas Verification Statement by SGS Taiwan Ltd. Referring to ISO14064-1, "scope 3 emission" in the statement is phrased as indirect emissions related to transportation ( business travel, employee commuting), products used by an organization (purchased goods and services, waste generated in operations), and indirect emissions associated with the use of products from the organization (use of sold products, end-of-life treatment of sold products).

**Relevant standard**

IS)14064-1

**Proportion of reported emissions verified (%)**

99.51

**C10.2**

**(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?**

Yes

**C10.2a**

**(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?**

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C9. Additional metrics	Waste data	ISO14064-1: 2018	GIGABYTE inventories its Scope 3 Category 5 emissions from waste generated in operation with a waste-type-specific method. Therefore, the external agency verifies the weight of all types of waste from four main bases while verifying scope 3 emissions.

**C11. Carbon pricing**

**C11.1**

**(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?**

No, but we anticipate being regulated in the next three years

**C11.1d**

**(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?**

The status GIGABYTE is facing:

1. In Taiwan: In 2015, the Environmental Protection Administration (EPA) of Taiwan passed the "Greenhouse Gas Reduction and Management Act." In view of the increasingly pressing threat of climate change, and also the commitment of many countries and private companies to achieve net zero emissions by 2050, more robust actions are urgently needed. In January 2023, Taiwan's government legislated amending the Act to become the "Climate Change Response Act", establishing a net zero emission goal by 2050, and introducing a "carbon fee" program. The amendment draft proposes that the carbon fee be at least TWD300 per tonne. Detailed measures and price levels are still being negotiated. It will take into account the prices used by other countries, carbon tariffs that are sure to be implemented (for example, EU CBAM), and recommendations from international scientific groups and research institutes. Officially, the carbon fee will go into effect in 2024. Due to our scope 1+2 emissions of Taiwan bases being below 25,000 tons, GIGABYTE will not be controlled in the first phase. Even so, we believe GIGABYTE will eventually be regulated.
2. In Europe: The EU Carbon Border Adjustment Mechanism (CBAM) will enter into force in its transitional phase in October 2023. Initially, it will apply to imports of certain goods and precursors with high carbon intensity and the highest risk of carbon leakages, such as cement, steel, aluminum, fertilizers, electricity, and hydrogen. The main products of GIGABYTE are not on the list to be levied in the first phase; however, we expect all products imported to the EU to be subject to CBAM by 2032. Furthermore, since CBAM will include indirect emissions while determining products' carbon content, it will have a significant impact on GIGABYTE, since 95% of our manufacturing processes use electricity.
3. In China: The National Emission Trading System (CN ETS) was officially launched in July 2021. The power sector is the first industry type obligated to participate in cap and trade. GIGABYTE has two factories in China, Ningbo Factory and Dongguan Factory. The IT industry is not yet subject to the scheme, but we expect it to be in the future. China has committed to reaching carbon neutrality by 2060 and a peak in emissions by 2030. It is very likely that China's government will enhance its climate-related and environmental policies and regulations in the future due to an ambitious goal like this. Therefore, we believed other huge industries such as IT would eventually be regulated by the CN ETS.

Strategies:

1. Keep following the trend: Serving as a gatekeeper, the Green Sustainable Development Committee continues to invest manpower in tracking progress changes in the mechanisms. Through diverse scenario analyses, the Sustainable Development Office evaluates the relevant impacts on GIGABYTE from these mechanisms and schemes in Taiwan, China, and the EU.
2. Rise of the ambition of emission target: Based on internal analysis, the current emission target of 50% reduction by 2025 may not meet the expectations of stakeholders in the near future. The target ambition should be raised and more robust measures implemented. Continual reduction in emissions intensity will reduce our financial burden when regulated by domestic or international carbon pricing mechanisms in the future.
3. Investment in multiple emission reduction measures: To accelerate the performance of emission reduction, GIGABYTE has been considering cost-effectiveness analyses for various action plans, including collaborating with key suppliers to reduce upstream emissions, installing solar panels on roofs of three factories, investing in renewable energy plants and long-term PPAs, donating trees that provide carbon credits, and purchasing renewable energy certificates.

**C11.2**

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**(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?**

No

**C11.3**

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**(C11.3) Does your organization use an internal price on carbon?**

Yes

**C11.3a**

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**(C11.3a) Provide details of how your organization uses an internal price on carbon.**

**Type of internal carbon price**

Shadow price

**How the price is determined**

Alignment with the price of allowances under an Emissions Trading Scheme  
Price/cost of voluntary carbon offset credits  
Cost of required measures to achieve emissions reduction targets  
Benchmarking against peers

**Objective(s) for implementing this internal carbon price**

Change internal behavior  
Drive energy efficiency  
Identify and seize low-carbon opportunities  
Navigate GHG regulations  
Reduce supply chain emissions

**Scope(s) covered**

Scope 1  
Scope 2  
Scope 3 (upstream)

**Pricing approach used – spatial variance**

Uniform

**Pricing approach used – temporal variance**

Evolutionary

**Indicate how you expect the price to change over time**

The determination of GIGABYTE's internal carbon price level based on NGO's research, industrial peers, the ETS relevant to our operations, well-known voluntary carbon trading markets, and an acceptable internal cost-effectiveness level.  
Some of the carbon prices mentioned above fluctuate over time. We will consider changing the internal carbon price level when it no longer adequately reflects the potential costs we will face in practice, or when it is too low to motivate further advances in internal changes and a low-carbon transition. As more and more countries and regional markets set net-zero targets, global energy demand continues to grow while energy prices continue to fluctuate, and mandatory and voluntary emission trading markets are expected to continue to expand, the level of global carbon prices will continue to rise. Consequently, we expect our internal carbon pricing level to increase moderately in the future as well.

**Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)**

1560

**Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)**

1560

**Business decision-making processes this internal carbon price is applied to**

Operations  
Product and R&D  
Risk management  
Opportunity management  
Value chain engagement

**Mandatory enforcement of this internal carbon price within these business decision-making processes**

No

**Explain how this internal carbon price has contributed to the implementation of your organization's climate commitments and/or climate transition plan**

As of now, GIGABYTE has not been subject to any carbon pricing mechanisms, but we have been devoted to reducing our emissions from our operations and meeting our short-term and long-term reduction targets. In 2019, GIGABYTE launched the "Sustainability Fund," which aims to reward employees who come up with solutions that reduce operational emissions and product carbon footprints. When evaluating proposals, we use the Internal Carbon Price (ICP) to quantify the financial implications of reducing carbon emissions.

The "Sustainability Fund" is implemented at Headquarters, three factories, and five subsidiaries. There are two impacts expected from the implementation of ICP. Firstly, despite not being subject to carbon fees or taxes, we hope that our employees are becoming more aware of "the cost of carbon emissions" and can internalize the awareness into their work and reduce emissions from all aspects. Secondly, we are also preparing for the possibility of paying a charge for our excess emissions in the future due to stricter regulations. As an example, when assessing the extent to which a proposed low-carbon product will contribute to reducing the carbon content and thus avoiding carbon tariffs, we start by calculating the carbon footprint of the proposal. After multiplying its total carbon footprint with a carbon price, a total "carbon impact cost" can be calculated. Then various indicators are used to compare the reduction performance of each similar proposal, such as the ratio of product cost to "carbon impact cost" or "carbon impact cost" per square measure of a motherboard.

Since 2019, 295 proposals have been received. The total emission reduction of all proposals is 6,672.04 t-CO2e per year, worth around TWD10.3 million annually.

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## C12. Engagement

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### C12.1

**(C12.1) Do you engage with your value chain on climate-related issues?**

Yes, our suppliers  
Yes, our customers/clients

**(C12.1a) Provide details of your climate-related supplier engagement strategy.****Type of engagement**

Information collection (understanding supplier behavior)

**Details of engagement**

Collect GHG emissions data at least annually from suppliers  
 Collect targets information at least annually from suppliers  
 Collect other climate related information at least annually from suppliers

**% of suppliers by number**

9.23

**% total procurement spend (direct and indirect)**

82.21

**% of supplier-related Scope 3 emissions as reported in C6.5**

11.07

**Rationale for the coverage of your engagement**

Since 2012, GIGABYTE has invited selected 1-tier suppliers to engage in the "Supplier Sustainability Assessment" every year. Normally we select the suppliers that have long-term cooperation with GIGABYTE, or the suppliers of whom the annual procurement amount is relatively large. In other words, the suppliers selected by us to join in the Assessment are the most important upstream partners of GIGABYTE. We send self-assessment questionnaires to these major suppliers of the motherboards, VGA, and network communication business units.

The assessment framework includes six main dimensions: CSR management, environmental protection, labor rights, fair trade, supplier responsibility, and contribution to society and community. Through the questionnaires, we collect CSR-related information, including carbon emissions, water use, climate strategies and actions, and so on from our major suppliers as well as understand the extent of performance of these suppliers responding to climate change.

There are more than 100 components on a motherboard, server board, or graphics card. Due to this, GIGABYTE has over 800 suppliers. 94 critical suppliers participated in the 2022 Supplier Sustainability Assessment, accounting for 82.21% of procurement and 9.23% of total suppliers. In addition, we estimated that 11.07% of scope 3 emissions are related to these important suppliers.

**Impact of engagement, including measures of success**

1. Impact of engagement:

Implementing the "Supplier Sustainability Assessment" among major suppliers can benefit GIGABYTE's supply chain risk management. GIGABYTE has devoted itself to reducing the environmental burden of our products as much as possible. We achieve this by not only improving the energy-saving performance of our products but also assessing and reducing their carbon footprints throughout the product life cycle. It is therefore crucial to collect environmental information from suppliers. It helps us identify the emission hotspots along the supply chain and also detects risks of our products becoming illegal in downstream countries or regional markets as early as possible.

2. Measures of success:

We measure the success of the Supplier Sustainability Assessment every year by looking at the questionnaire response rate and the extent to which suppliers attach importance to the Assessment. One of the indicators of a supplier's attention to this Assessment is who supervises the response. We also adjusted the questionnaire of Assessment every year based on the tendency change to collect more details regarding the suppliers' CSR performance.

Furthermore, GIGABYTE invites suppliers to participate in the "333 Reduction Plan" together with us, and we evaluate the environmental performance of joined suppliers via the Assessment questionnaire as well. The data provided by the 52 joined companies (including GIGABYTE) in 2022 shows that we emitted 33,236,361 tons of CO<sub>2</sub>e, used 979,677 tons of water, and generated 436,006 tons of waste in total in 2021. Compared with the previous year, 11 joined suppliers achieved cutting emissions by more than 3%, i.e., they achieved the yearly target of the "333 Reduction Plan".

**Comment****Type of engagement**

Engagement & incentivization (changing supplier behavior)

**Details of engagement**

Run an engagement campaign to educate suppliers about climate change  
 Climate change performance is featured in supplier awards scheme

**% of suppliers by number**

9.23

**% total procurement spend (direct and indirect)**

82.21

**% of supplier-related Scope 3 emissions as reported in C6.5**

11.07

**Rationale for the coverage of your engagement**

The target group of the engagement mentioned here is the same as that in the first row, i.e., the major 1-tier suppliers selected to join the "Supplier Sustainability Assessment" every year. The suppliers selected as the target of the Assessment will also be eligible for that year's GIGABYTE Supplier Sustainability Awards. The assessment evaluates a supplier's performance on six dimensions: CSR management, environmental protection, labor practices and human rights, fair business practices, supply chain responsibility, and contribution to community and society.

Since 2012, we have awarded Supplier Sustainability Awards to suppliers who receive a better score from the assessment at GIGABYTE End-of-year Supplier Events. Additionally, the Assessment, Awards, and End-of-Year Supplier Events are the main channels through which we motivate our suppliers to participate in our climate-related campaigns. Our Assessment questionnaire includes information about the "333 Reduction Plan" (an initiative launched in 2016 to reduce emissions, water, and waste by 3% every year) and invites suppliers to participate.

**Impact of engagement, including measures of success**

1. Impact of engagement:

GIGABYTE Supplier Sustainability Award has been held since 2012 for 11 consecutive years. As we have seen in the past few years, not only suppliers are placing a greater value on the Awards, but also other departments and business units within GIGABYTE are taking the Award more seriously than they used to. The concept of emission reduction, green energy, anti-pollution, corporate responsibility, etc., has been added to the themes of the Award in recent years, aiming to raise the attention of our suppliers to the fact that GIGABYTE places a great deal of emphasis on sustainable development within our organization.

2. Measures of success:

GIGABYTE introduces a new supplier rating system in 2022 that combines the "Supplier Sustainability Assessment" with the original supplier management system. Each supplier is classified based on their purchase amount, quality, delivery, environmental management, human-rights management, involvement in GIGABYTE supply chain engagement projects, etc. When purchasing from suppliers, purchasers will have access to suppliers' information related not only to product quality but also to their ESG performance. That is, the new system enables us to support those suppliers who value sustainable development through our purchasing power. In the new system, suppliers who participate in the Assessment and are awarded will receive a higher rating level for the Sustainability criteria. The extent of success can then be measured based on these quantified assessment results from suppliers.

**Comment**

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## C12.1b

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**(C12.1b) Give details of your climate-related engagement strategy with your customers.**

### Type of engagement & Details of engagement

Education/information sharing	Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services
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### % of customers by number

56.65

### % of customer - related Scope 3 emissions as reported in C6.5

52.18

### Please explain the rationale for selecting this group of customers and scope of engagement

GIGABYTE successfully set up its internal Product Carbon Footprint Calculation System in 2017. The system includes carbon footprint data for all single components purchased from our suppliers. Therefore, engineers can obtain the lifetime carbon footprint of a product or a model by entering the BOM list into the system. Moreover, we have continued to publish environmental reports of several major product lines on our CSR website since 2018 to inform our consumers about how much emissions a product has generated during its life cycle. Initially, the reports cover impacts on climate change (carbon emissions), air quality (PM2.5/10), and ecological balance (land/water acidification). Climate change impact is largely estimated based on the result of the Product Carbon Footprint Calculation System. In 2022, we released the 3rd version of the Product Environmental Report. This includes 16 aspects of environmental impact to share more comprehensive information about the product with our consumers. To review the publicized Product Environmental Reports, please refer to the page "Extended Product Responsibility" at <https://csr.gigabyte.tw/en/extended-product-responsibility-en/>

In order to estimate the scope of the engagement, we collect the volume and amount of sales of the products for which product environmental reports have been released to date. These products accounted for 52.65% of the total sales volume for the year, and their revenue ratio in 2022 was 20.06%.

### Impact of engagement, including measures of success

1. Impact of engagement:

Because these educational engagements are relatively indirect, it is difficult to measure their qualitative impact. For example, we cannot exactly know how many consumers review the Product Environment Reports of the products they purchase on our website. However, in recent years, we have received more and more requests from customers asking for information on the carbon footprint data of the products we sell. It may be a result of our engagement with the downstream value chain, but it may also be a result of the international trend toward disclosure of product environmental impacts. In any case, since GIGABYTE prepared in advance, we will be able to provide sufficient quantitative data to prove our products' environmental friendliness when communicating climate-related concerns with consumers and customers.

2. Measures of success:

It is possible to measure the success of this communication by looking at the increase in the sales volume and amount of the products for which Environment Reports have been published. Since we released the third version of the Product Environment Report, we have been accelerating the pace of product environmental impact analyses and covering as many main product models as possible. As compared with last year, the annual sales volume of products with environmental reports published has increased from 5.39% to 52.65%, a sign that more and more major best-selling products are being included in environmental reports. GIGABYTE launches various new models every year due to the industry's characteristics. In order to communicate with consumers in a timely manner, we will do our best to complete the evaluation and publish the environmental reports within a certain period after the new models are launched.

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## C12.2

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**(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?**

Yes, suppliers have to meet climate-related requirements, but they are not included in our supplier contracts

## C12.2a

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**(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.**

**Climate-related requirement**

Implementation of emissions reduction initiatives

**Description of this climate related requirement**

Since 2018, GIGABYTE has invited suppliers whose annual transaction amount is more than TWD10 million to join the "333 Reduction Plan" and provided their emission data to us for further analysis of their emission reduction performance. The result report is disclosed on GIGABYTE's CSR website as well as sent to all alliance members on a yearly basis. Since the new supplier rating system is carried out in 2022, the participating status of the "333 Reduction Plan" and involved suppliers' achievement in emission reduction targets are further integrated into our procurement process and used as a reference when purchasers are placing an order.

**% suppliers by procurement spend that have to comply with this climate-related requirement**

99.25

**% suppliers by procurement spend in compliance with this climate-related requirement**

25.35

**Mechanisms for monitoring compliance with this climate-related requirement**

Supplier self-assessment  
Supplier scorecard or rating

**Response to supplier non-compliance with this climate-related requirement**

Retain and engage

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**Climate-related requirement**

Climate-related disclosure through a non-public platform

**Description of this climate related requirement**

In response to customers' requirements, GIGABYTE conducts pre-assessment and ratings in accordance with the RBA Code of Conduct among the suppliers of our Network Communication BU every year. The suppliers are required to disclose energy consumption, greenhouse gas emissions, and climate-related managing process. Based on assessing results, both new and existing suppliers are classified into High-Risk, Medium-Risk, or Low-Risk grades. Moreover, those suppliers with Medium and High risk will be provided with counseling for improvement to ensure better performance. While comparing the audit findings from 2018 to 2022, we found that the suppliers' scores have kept increasing year by year.

In 2022, GIGABYTE established a new supplier rating system that integrates the "Supplier Sustainability Assessment" with the originally traditional supplier management mechanism. The "Supplier Sustainability Assessment" used to be carried out for specific suppliers of key components. After introducing the new system, the assessing scope will expand to all suppliers. A quantified process will be adopted to distinguish the performance of all suppliers by purchase amount, product quality, delivery, environmental management, human-right-related management, and involvement in GIGABYTE's supply chain engagement projects, etc. We will also actively investigate climate-related information of suppliers from their public channels like official websites or CSR reports.

**% suppliers by procurement spend that have to comply with this climate-related requirement**

23.19

**% suppliers by procurement spend in compliance with this climate-related requirement**

2.57

**Mechanisms for monitoring compliance with this climate-related requirement**

Supplier self-assessment  
Supplier scorecard or rating

**Response to supplier non-compliance with this climate-related requirement**

Retain and engage

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**C12.3**

**(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?**

**Row 1**

**External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate**

Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

**Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?**

No, but we plan to have one in the next two years

**Attach commitment or position statement(s)**

<Not Applicable>

**Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan**

All direct and indirect activities by GIGABYTE that would influence policy are channeled through the Sustainable Development Office, afterward discussed and decided at the Green Sustainable Development Committee, and then reported to the Board of Directors. Such a procedure ensures that our participation is consistent with our company strategy on climate change. Take an indirect activity held by the Taipei Computer Association as an example. The Association sometimes co-sponsors industry seminars organized by the Taiwanese government and invites various computer companies as well as their suppliers to share knowledge on how to meet environmental standards, improve energy efficiency, and reduce the carbon footprint. GIGABYTE's COO serves as one of the directors of the Association, and the representative of GIGABYTE that attends the activities is usually the head of the Sustainable Development Department. So that we can share ideas from GIGABYTE's perspective based on our efforts and knowledge, which will stay in tune with the company's overall climate change strategy.

**Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate**

<Not Applicable>

**Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate**

<Not Applicable>

## C12.3b

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**(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.**

**Trade association**

Other, please specify ( Taipei Computer Association)

**Is your organization's position on climate change policy consistent with theirs?**

Consistent

**Has your organization attempted to influence their position in the reporting year?**

Yes, we publicly promoted their current position

**Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position**

The Taiwan Computer Association (TCA), founded in 1974, is the leading industrial organization in Taiwan. TCA facilitates the growth of the ICT industry by continuously seeking new opportunities and acting as a bridge to the government, academics, and the general public, as well as a window for international professional bodies.

In recent years, as the issue of climate change has become increasingly important worldwide, TCA has aimed at finding ways to help members better adapt to climate change and gathering industrial voices to influence government policy on sustainable development. In 2022, TCA established the "Taiwan Climate Alliance" which echoes the national reduction targets stated to achieve net zero carbon emissions by 2050.

GIGABYTE has long been one of TCA's members. We have announced a goal of reducing carbon emissions by 50% in 2025 compared to the base year 2009 and will strive to align with the national reduction goal in the near future.

**Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**

15000

**Describe the aim of your organization's funding**

Member fee

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

No, we have not evaluated

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## C12.4

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(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

**Publication**

In mainstream reports

**Status**

Complete

**Attach the document**

1  
2022\_GIGABYTE Annual Report\_EN.pdf

**Page/Section reference**

pp.52-65  
pp.124-130

**Content elements**

Governance  
Strategy  
Emissions figures  
Emission targets

**Comment**

The attached file is the English version of the 2022 GIGABYTE Annual Report. The climate-related content can be found at pp.52-65 and pp.124-130. The full report can also be downloaded from the GIGABYTE Investor Global Website: <https://www.gigabyte.com/Investor/83> or from the Market Observation Post system set up by the Taiwan Stock Exchange: [https://doc.twse.com.tw/pdf/2022\\_2376\\_20230609FE4\\_20230703\\_183621.pdf](https://doc.twse.com.tw/pdf/2022_2376_20230609FE4_20230703_183621.pdf)

**Publication**

In mainstream reports, incorporating the TCFD recommendations

**Status**

Complete

**Attach the document**

1  
2022\_GIGABYTE Sustainability Report\_CN.pdf

**Page/Section reference**

pp.30-35/ Section 3.2 Climate Change Mitigation and Adaptation in Chapter 3 Green Production  
p.70/ Appendix 4 TCFD Index

**Content elements**

Governance  
Strategy  
Risks & opportunities  
Emissions figures  
Emission targets  
Other metrics  
Other, please specify (Climate actions that were taken in the reporting year)

**Comment**

The attached files are parts of the Chinese version of the 2022 GIGABYTE CSR Report. The climate-related disclosing content can be found in Section 3.2 in Chapter 3 and Appendix 4. Due to the 30M limit per uploaded file, we cannot upload the full Report. However, the full report can be viewed and downloaded at <https://csr.gigabyte.tw/sustainability-report/>

The English version of the 2022 CSR Report will be published by September 2023.

**Publication**

In voluntary communications

**Status**

Complete

**Attach the document**

GIGABYTE CSR Website\_Climate Change Mitigation and Adaptation\_print screen.pdf

**Page/Section reference**

<https://csr.gigabyte.tw/en/climate-change-mitigation-and-adaption-en/>  
<https://csr.gigabyte.tw/en/environmental-aspect-en/>

**Content elements**

Governance  
Strategy  
Risks & opportunities  
Emissions figures  
Emission targets  
Other metrics  
Other, please specify (Climate actions that were taken in the reporting year, disclosure of product environmental reports)

**Comment**

We also communicate these issues through the GIGABYTE CSR Website.



C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	We are not a signatory/member of any collaborative framework, initiative and/or commitment related to environmental issues	<Not Applicable>

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	Yes, both board-level oversight and executive management-level responsibility	<p>In 2016, GIGABYTE adopted the methodology developed by SDG Compass, a guide for business action to align their strategies with the realization of the Sustainability Development Goals, to identify 6 high-priority goals and voluntarily responded to 2 goals, SDG 14: Life Below Water and SDG 15: Life on Earth. We then incorporated these goals into our CSR strategy map and developed corresponding actions to ensure that every sustainability action was connected to the global consensus for co-prosperity.</p> <p>Through positive action plans and education projects, GIGABYTE endeavors to enhance wildlife habitats and raise employees' awareness of ecological conservation. For instance, We have cooperated with Plant-for-the-Planet Foundation and the government to carry out several forest and habitat restoration activities, which not only respond to GIGABYTE's carbon reduction target but also stabilize the local ecosystem. Furthermore, we have joined several marine conservation campaigns that aim to remove marine debris and protect the prosperity of marine life.</p> <p>As of cultivating awareness, GIGABYTE launched a series of lectures, held working holidays, and started an internal environmental club that helps employees acknowledge ecological issues as well as make a contribution to nature. In 2017, G-HOME, an ecological roof at our Xindian headquarters, was built for employees to get close to nature more easily and learn the spirit of living in harmony with it.</p>	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have endorsed initiatives only	<Not Applicable>	Other, please specify (Collaborate with international tree-planting groups and help restore local ecosystems; cooperate with the Forestry Bureau of Taiwan and adopt forest land in Taiwan; support local farmers who adopts ecological farming and supports forest restoration.)

C15.3

**(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?**

**Impacts on biodiversity**

**Indicate whether your organization undertakes this type of assessment**

Yes

**Value chain stage(s) covered**

Direct operations  
Upstream  
Downstream

**Portfolio activity**

<Not Applicable>

**Tools and methods to assess impacts and/or dependencies on biodiversity**

Other, please specify ( Life cycle assessment tools)

**Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)**

GIGABYTE successfully set up its internal Product Carbon Footprint Calculation System in 2017. The system includes carbon footprint data for all single components purchased from our suppliers. Therefore, engineers can obtain the lifetime carbon footprint of a product or a model by entering the BOM list into the system. Moreover, we continue to publish environmental reports of several major product lines on our CSR website since 2018 to inform our consumers about how much emissions a product has generated during its life cycle. Initially, the reports cover impacts on climate change (carbon emissions), air quality (PM2.5/10), and ecological balance (land/water acidification). Climate change impact is largely estimated based on the result of the Product Carbon Footprint Calculation System. In 2022, we released the 3rd version of the Product Environmental Report. This includes 16 aspects of environmental impact, including biodiversity-related aspects such as water use, freshwater, marine, terrestrial eutrophication, in order to share more comprehensive information about the product with our consumers.

**Dependencies on biodiversity**

**Indicate whether your organization undertakes this type of assessment**

No, but we plan to within the next two years

**Value chain stage(s) covered**

<Not Applicable>

**Portfolio activity**

<Not Applicable>

**Tools and methods to assess impacts and/or dependencies on biodiversity**

<Not Applicable>

**Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)**

<Not Applicable>

**C15.4**

**(C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year?**

No

**C15.5**

**(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?**

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Education & awareness

**C15.6**

**(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?**

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	State and benefit indicators Pressure indicators

**C15.7**

**(C15.7) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In other regulatory filings	Biodiversity strategy	2022 GIGABYTE Sustainability Report (Chinese), pp.65-66. We voluntarily respond to SDG 14 and 15. The Green Action launched in 2009 includes several actions to protect the ecosystem, which are reviewed yearly and disclosed in annual CSR reports. 2022_GIGABYTE Sustainability Report_CN.pdf
In voluntary sustainability report or other voluntary communications	Impacts on biodiversity	Starting from 2018, GIGABYTE has published more than 80 product environmental reports. Consumers can find biology-related impacts a product causes throughout its lifetime (i.e. material acquisition, manufacturing, transportation, use, and disposal). GIGABYTE Product-Environmental-Report_Laptop.pdf GIGABYTE Product-Environmental-Report_BRIX.pdf GIGABYTE Product-Environmental-Report_Graphics card.pdf GIGABYTE Product-Environmental-Report_Motherboard.pdf

## C16. Signoff

### C-FI

**(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

No additional information or context.

### C16.1

**(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

	Job title	Corresponding job category
Row 1	Chief Operating Officer, Group Operation Management Center	Chief Operating Officer (COO)

## SC. Supply chain module

### SC0.0

**(SC0.0) If you would like to do so, please provide a separate introduction to this module.**

GIGABYTE is a Taiwanese technology firm founded in 1986 and has become one of the world's leading brands of motherboards and graphics cards. As we believe in excellent quality, innovation, and service, we have continually expanded our product variety to satisfy consumer needs over the years. Besides PC components, which remain as our stronghold product in the worldwide market, we develop and produce laptops, slate devices, desktop PCs, servers, and network communications. We are aware of our production processes' impacts on the natural and social environment, and we have increased our attention and actions on assuming corporate social responsibilities (CSR). Through continuous learning and improvement, we aim to become a fully sustainable and leading company.

### SC0.1

**(SC0.1) What is your company's annual revenue for the stated reporting period?**

	Annual Revenue
Row 1	107263644000

### SC1.1

**(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.**

**Requesting member**  
NEC Corporation

**Scope of emissions**  
Scope 1

**Scope 2 accounting method**  
<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

**Emissions in metric tonnes of CO<sub>2</sub>e**

78.62

**Uncertainty (±%)**

7.71

**Major sources of emissions**

LPG, Gasoline, diesel, refrigerant solvent

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

271317

**Unit for market value or quantity of goods/services supplied**

Other, please specify (Equivalent unit of motherboard production)

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GIGABYTE conducts its GHG emissions inventory based on its operational sites. Obtaining activity data from production lines that produce products for a single customer is difficult. Therefore, we allocate emissions to the customer based on the proportion of products they purchased compared to the total sales volume in 2022. The formula is: (the volume of equivalent product units purchased by the customer / total volume of GIGABYTE's equivalent product units) x gross scope 1 GHG emissions.

There are several limitations to the method of allocation and calculation:

1. Using the proportion of products sold to a particular customer as the basis for allocation assumes that our entire GHG emissions are related to production. Therefore, the allocation could be overestimated.
2. Allocation methods may not accurately reflect the emission performance of products bought by our customers. For instance, the emissions allocated to the customer may drop because their demands are reduced instead of manufacturing processes becoming more energy efficient.
3. Uncertainty arises from parameter uncertainties, such as emission factors, GWP values, and activity data.

---

**Requesting member**

NEC Corporation

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

**Emissions in metric tonnes of CO<sub>2</sub>e**

3416.91

**Uncertainty (±%)**

7.71

**Major sources of emissions**

Purchased electricity and a very small proportion of purchased steam

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member****Unit for market value or quantity of goods/services supplied**

Other, please specify ( unit of motherboard production)

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GIGABYTE conducts its GHG emissions inventory based on its operational sites. Obtaining activity data from production lines that produce products for a single customer is difficult. Therefore, we allocate emissions to the customer based on the proportion of products they purchased compared to the total sales volume in 2022. The formula is: (the volume of equivalent product units purchased by the customer / total volume of GIGABYTE's equivalent product units) x gross scope 2 GHG emissions.

There are several limitations to the method of allocation and calculation:

1. Using the proportion of products sold to a particular customer as the basis for allocation assumes that our entire GHG emissions are related to production. Therefore, the allocation could be overestimated.
2. Allocation methods may not accurately reflect the emission performance of products bought by our customers. For instance, the emissions allocated to the customer may drop because their demands are reduced instead of manufacturing processes becoming more energy efficient.
3. Uncertainty arises from parameter uncertainties, such as emission factors, GWP values, and activity data.

---

**Requesting member**

NEC Corporation

**Scope of emissions**

Scope 3

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

Category 1: Purchased goods and services

Category 5: Waste generated in operations

Category 6: Business travel

Category 7: Employee commuting

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

**Emissions in metric tonnes of CO<sub>2</sub>e**

112454.12

**Uncertainty (±%)**

44.72

**Major sources of emissions**

- Purchased goods: Cradle-to-gate carbon footprint of goods purchased by all business units.
- Waste generated from the operation: indirect emissions from treating waste generated in GIGABYTE's headquarters and main factories.
- Employee commuting: emission from commuting by employees in Headquarters, main factories, and primary subsidiaries
- Business travel: emissions from cross-national business travel by air.

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

271317

**Unit for market value or quantity of goods/services supplied**

Other, please specify (Equivalent unit of motherboard production)

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

In 2013, GIGABYTE began inventorying scope 3 emissions according to the Greenhouse Gas Protocol. Since 2018, 11 of 15 categories relevant to GIGABYTE have been included in the annual inventory process. Starting from 2021, 6 of the categories with high and medium-high materiality have been verified by a third party. These categories are purchased goods, waste generated from the operation, employee commuting, business travel, use of sold products, and end-of-life treatment of sold products.

The scope 3 emission allocation here considers only emissions from 4 upstream categories and is based on the proportion of products the customer purchased to the total sales volume in 2022. The formula is: (the volume of equivalent product units purchased by the customer / total volume of GIGABYTE's equivalent product units) x scope 3 GHG emissions.

There are several limitations to the method of allocation and calculation:

1. Using the proportion of products sold to a particular customer as the basis for allocation assumes that our entire GHG emissions are related to production. Therefore, the allocation could be overestimated.
2. Allocation methods may not accurately reflect the emission performance of products bought by our customers. For instance, the emissions allocated to the customer may drop because their demands are reduced instead of manufacturing processes becoming more energy efficient.
3. Uncertainty arises from parameter uncertainties, such as emission factors, GWP values, and activity data.

---

**Requesting member**

Hewlett Packard Enterprise Company

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

**Emissions in metric tonnes of CO<sub>2</sub>e**

0.61

**Uncertainty (±%)**

7.71

**Major sources of emissions**

LPG, Gasoline, diesel, refrigerant solvent

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

9420

**Unit for market value or quantity of goods/services supplied**

Other, please specify (Equivalent unit of motherboard production)

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GIGABYTE conducts its GHG emissions inventory based on its operational sites. Obtaining activity data from production lines that produce products for a single customer is difficult. Therefore, we allocate emissions to the customer based on the proportion of products they purchased compared to the total sales volume in 2022. The formula is: (the volume of equivalent product units purchased by the customer / total volume of GIGABYTE's equivalent product units) x gross scope 1 GHG emissions.

There are several limitations to the method of allocation and calculation:

1. Using the proportion of products sold to a particular customer as the basis for allocation assumes that our entire GHG emissions are related to production. Therefore, the allocation could be overestimated.
2. Allocation methods may not accurately reflect the emission performance of products bought by our customers. For instance, the emissions allocated to the customer may drop because their demands are reduced instead of manufacturing processes becoming more energy efficient.
3. Uncertainty arises from parameter uncertainties, such as emission factors, GWP values, and activity data.

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**Requesting member**

Hewlett Packard Enterprise Company

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

**Emissions in metric tonnes of CO<sub>2</sub>e**

26.36

**Uncertainty (±%)**

7.71

**Major sources of emissions**

Purchased electricity and a very small proportion of purchased steam

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

9420

**Unit for market value or quantity of goods/services supplied**

Other, please specify (Equivalent unit of motherboard production)

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GIGABYTE conducts its GHG emissions inventory based on its operational sites. Obtaining activity data from production lines that produce products for a single customer is difficult. Therefore, we allocate emissions to the customer based on the proportion of products they purchased compared to the total sales volume in 2022. The formula is: (the volume of equivalent product units purchased by the customer / total volume of GIGABYTE's equivalent product units) x gross scope 2 GHG emissions.

There are several limitations to the method of allocation and calculation:

1. Using the proportion of products sold to a particular customer as the basis for allocation assumes that our entire GHG emissions are related to production. Therefore, the allocation could be overestimated.

2. Allocation methods may not accurately reflect the emission performance of products bought by our customers. For instance, the emissions allocated to the customer may drop because their demands are reduced instead of manufacturing processes becoming more energy efficient.

3. Uncertainty arises from parameter uncertainties, such as emission factors, GWP values, and activity data.

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**Requesting member**

Hewlett Packard Enterprise Company

**Scope of emissions**

Scope 3

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

Category 1: Purchased goods and services

Category 5: Waste generated in operations

Category 6: Business travel

Category 7: Employee commuting

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

**Emissions in metric tonnes of CO<sub>2</sub>e**

865.15

**Uncertainty (±%)**

44.72

**Major sources of emissions**

- Purchased goods: Cradle-to-gate carbon footprint of goods purchased by all business units.
- Waste generated from the operation: indirect emissions from treating waste generated in GIGABYTE's headquarters and main factories.
- Employee commuting: emission from commuting by employees in Headquarters, main factories, and primary subsidiaries
- Business travel: emissions from cross-national business travel by air.

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

9420

**Unit for market value or quantity of goods/services supplied**

Other, please specify (Equivalent unit of motherboard production)

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

In 2013, GIGABYTE began inventorying scope 3 emissions according to the Greenhouse Gas Protocol. Since 2018, 11 of 15 categories relevant to GIGABYTE have been included in the annual inventory process. Starting from 2021, 6 of the categories with high and medium-high materiality have been verified by a third party. These categories are purchased goods, waste generated from the operation, employee commuting, business travel, use of sold products, and end-of-life treatment of sold products.

The scope 3 emission allocation here considers only emissions from 4 upstream categories and is based on the proportion of products the customer purchased to the total sales volume in 2022. The formula is: (the volume of equivalent product units purchased by the customer / total volume of GIGABYTE's equivalent product units) x scope 3 GHG emissions.

There are several limitations to the method of allocation and calculation:

1. Using the proportion of products sold to a particular customer as the basis for allocation assumes that our entire GHG emissions are related to production. Therefore, the allocation could be overestimated.
  2. Allocation methods may not accurately reflect the emission performance of products bought by our customers. For instance, the emissions allocated to the customer may drop because their demands are reduced instead of manufacturing processes becoming more energy efficient.
  3. Uncertainty arises from parameter uncertainties, such as emission factors, GWP values, and activity data.
- 

**Requesting member**

Dell Technologies

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

**Emissions in metric tonnes of CO2e**

0

**Uncertainty (±%)**

7.71

**Major sources of emissions**

LPG, Gasoline, diesel, refrigerant solvent

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

0

**Unit for market value or quantity of goods/services supplied**

Other, please specify (Equivalent unit of motherboard production)

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GIGABYTE conducts its GHG emissions inventory based on its operational sites. Obtaining activity data from production lines that produce products for a single customer is difficult. Therefore, we allocate emissions to the customer based on the proportion of products they purchased compared to the total sales volume in 2022. The formula is: (the volume of equivalent product units purchased by the customer / total volume of GIGABYTE's equivalent product units) x gross scope 1 GHG emissions.

However, according to the internal data, we did not ship products to Dell in 2022. Therefore, the emissions allocated to Dell was 0 t-CO2e.

There are several limitations to the allocating method we used to apply and calculate:

1. Using the proportion of products sold to a particular customer as the basis for allocation assumes that our entire GHG emissions are related to production. Therefore, the allocation could be overestimated.
2. Allocation methods may not accurately reflect the emission performance of products bought by our customers. For instance, the emissions allocated to the customer may drop because their demands are reduced instead of manufacturing processes becoming more energy efficient.
3. Uncertainty arises from parameter uncertainties, such as emission factors, GWP values, and activity data.

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**Requesting member**

Dell Technologies

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

**Emissions in metric tonnes of CO2e**

0

**Uncertainty (±%)**

7.71

**Major sources of emissions**

Purchased electricity and a very small proportion of purchased steam

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

0

**Unit for market value or quantity of goods/services supplied**

Other, please specify (Equivalent unit of motherboard production)

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GIGABYTE conducts its GHG emissions inventory based on its operational sites. Obtaining activity data from production lines that produce products for a single customer is difficult. Therefore, we allocate emissions to the customer based on the proportion of products they purchased compared to the total sales volume in 2022. The formula is: (the volume of equivalent product units purchased by the customer / total volume of GIGABYTE's equivalent product units) x gross scope 2 GHG emissions.

However, according to the internal data, we did not ship products to Dell in 2022. Therefore, the emissions allocated to Dell was 0 t-CO2e.

There are several limitations to the allocating method we used to apply and calculate:



1. Using the proportion of products sold to a particular customer as the basis for allocation assumes that our entire GHG emissions are related to production. Therefore, the allocation could be overestimated.
2. Allocation methods may not accurately reflect the emission performance of products bought by our customers. For instance, the emissions allocated to the customer may drop because their demands are reduced instead of manufacturing processes becoming more energy efficient.
3. Uncertainty arises from parameter uncertainties, such as emission factors, GWP values, and activity data.

**Requesting member**

Dell Technologies

**Scope of emissions**

Scope 3

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

Category 1: Purchased goods and services

Category 5: Waste generated in operations

Category 6: Business travel

Category 7: Employee commuting

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

**Emissions in metric tonnes of CO<sub>2</sub>e**

0

**Uncertainty (±%)**

42.72

**Major sources of emissions**

- Purchased goods: Cradle-to-gate carbon footprint of goods purchased by all business units.
- Waste generated from the operation: indirect emissions from treating waste generated in GIGABYTE's headquarters and main factories.
- Employee commuting: emission from commuting by employees in Headquarters, main factories, and primary subsidiaries
- Business travel: emissions from cross-national business travel by air.

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

0

**Unit for market value or quantity of goods/services supplied**

Other, please specify (Equivalent unit of motherboard production)

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

In 2013, GIGABYTE began inventorying scope 3 emissions according to the Greenhouse Gas Protocol. Since 2018, 11 of 15 categories relevant to GIGABYTE have been included in the annual inventory process. Starting from 2021, 6 of the categories with high and medium-high materiality have been verified by a third party. These categories are purchased goods, waste generated from the operation, employee commuting, business travel, use of sold products, and end-of-life treatment of sold products.

The scope 3 emission allocation here considers only emissions from 4 upstream categories and is based on the proportion of products the customer purchased to the total sales volume in 2022. The formula is: (the volume of equivalent product units purchased by the customer / total volume of GIGABYTE's equivalent product units) x scope 3 GHG emissions.

However, according to the internal data, we did not ship products to Dell in 2022. Therefore, the emissions allocated to Dell was 0 t-CO<sub>2</sub>e.

There are several limitations to the allocating method we used to apply and calculate:

1. Using the proportion of products sold to a particular customer as the basis for allocation assumes that our entire GHG emissions are related to production. Therefore, the allocation could be overestimated.
2. Allocation methods may not accurately reflect the emission performance of products bought by our customers. For instance, the emissions allocated to the customer may drop because their demands are reduced instead of manufacturing processes becoming more energy efficient.
3. Uncertainty arises from parameter uncertainties, such as emission factors, GWP values, and activity data.

**SC1.2**

**(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).**

GIGABYTE allocates its greenhouse emissions to our customers in accordance with the Corporate Value Chain Accounting and Reporting Standard (Chapter 8). Allocations are based on the volume of products the customer purchased from GIGABYTE in 2022.

There are three steps in the allocation process. Our first step is to convert the number of products purchased by the customer into equivalent units of production, and then sum them up to get the total number of products purchased by the customer. Secondly, we calculate the proportion of product amounts purchased by customers to the total products we sold in 2022. Finally, multiply the GHG emissions by the proportion obtained from step 2 to determine the customer's share.

The volume of products GIGABYTE produced and also the volume of products our customers purchased in 2022 are derived from our internal systems. GIGABYTE's greenhouse gas emissions for 2022 have been completed according to ISO14064-1: 2018 and verified by a third party. The certification is open to the public on our official CSR website: <https://csr.gigabyte.tw/en/quality-and-environmental-management-certification-en/>

**SC1.3**

**(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?**

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	GIGABYTE's primary product type used to be motherboards, which accounted for more than half of its total products. Because of the change in the global PC market, the booming development of AIoT and 5G technology, as well as the increased demand for remote interactive devices initially driven by the pandemic but turning out to be normal, GIGABYTE's product portfolio has constantly evolved. We have seen a dramatic increase in the markets for servers, server boards, graphics cards, and IoT solutions in recent years.  Each type of product contains dozens of components purchased from a wide range of suppliers. In order to calculate the total carbon footprint of every single type of product, we must request emission data from several suppliers. Thus, it would be much more feasible to allocate emissions based on the proportion of products that we sell to customers rather than calculating emissions for each type of product.

**SC1.4**

**(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?**

Yes

**SC1.4a**

**(SC1.4a) Describe how you plan to develop your capabilities.**

1. GIGABYTE established an internal Product Carbon Footprint Calculation System in 2017. In the system, we maintain a database of data on the carbon footprints of all the components we purchase from our suppliers. By using this system, we can easily calculate the carbon footprint of all types of products. Over the last few years, GIGABYTE has developed various product lines to meet the global market's needs. Our database will be updated continuously to ensure that it is as complete as possible.
2. To fully understand the carbon emissions resulting from our operations, GIGABYTE has conducted an annual scope 3 emissions inventory since 2012. We have introduced new methods in order to comply with ISO14064-1: 2018, including more accurate inventorying of scope 3 emissions from purchased goods, generated waste, employee commuting, business travel, use of sold products, and end-of-life treatment of sold products. We have received third-party verification of the inventory results for 2022. With continuous measurement and tracking of emissions, we will identify more ways to reduce emissions, reduce carbon footprint in manufacturing processes, and extend product life.
3. Every year, GIGABYTE conducts supplier audits and sustainability questionnaire surveys. Annually, GIGABYTE requests information and data related to CSR from its largest 1-tier suppliers. We have invited suppliers to join the "Reduction. Sharing. Love the Earth Alliance" program since 2018 and respond to the "333 Reduction Plan", which asks suppliers to provide emission data to us for further analysis of sustainable supply chain management. According to the latest data, among the 52 companies participating in the Plan (including GIGABYTE), the numbers of companies who achieved cutting more than 3% of carbon emissions, water use, and waste are 11, 17, and 15, respectively.

**SC2.1**

**(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.**

**Requesting member**

NEC Corporation

**Group type of project**

Change to supplier operations

**Type of project**

Implementation of energy reduction projects

**Emissions targeted**

Actions that would reduce our own supply chain emissions (our own scope 3)

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO2e savings**

260.22

**Estimated payback**

Other, please specify (The estimated payback varies from project to project)

**Details of proposal**

GIGABYTE's current long-term reduction goal is to cut 50% of gross emissions from the 2009 level by 2025. We also initiated the "333 Reduction Plan" in 2016 which aims at cutting emissions, water use, and waste by 3% each year. To achieve these goals, we continue carrying out emission reduction measures and programs. Our scope 1+2 emissions in 2022 have decreased by 42.99% compared to the 2009 level, and by 6.77% compared to the previous year.

Also, we collaborate with our supply chain partners to reduce scope 3 emissions. Firstly, we call on suppliers to join in the "Reduction. Sharing. Love the Earth Alliance" and make an effort to reach the "333 Reduction" target together with GIGABYTE. In 2022, 51 1-tier suppliers responded to the Plan and provided environmental data to GIGABYTE. Besides, for the purpose of improving the sustainability of our suppliers, we developed GIGABYTE "Supplier Sustainability Assessment" to help our suppliers to meet our expectations on CSR management, the prohibition of corruption and bribery, basic human rights of employees, the prohibition of child labor, health and safety for employees, environmental protection, supply chain responsibility, and contribution to society and community. The supplier who receives the highest score from the Assessment would be awarded the Supplier Sustainability Award at the GIGABYTE's supplier end-of-year party. The Award scheme encourages our suppliers to work with us in order to improve product quality and corporate responsibility. The Award has been held for 11 consecutive years since 2012.

If GIGABYTE itself and most of our key suppliers achieve in cut by 3% tons of scope 1+2 emissions in 2023, we estimate around 260.22 tons of CO2e savings along the supply chain would be associated with NEC calculated on the basis of the proportion of the product sold to NEC in 2022.

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**Requesting member**

Hewlett Packard Enterprise Company

**Group type of project**

Change to supplier operations

**Type of project**

Implementation of energy reduction projects

**Emissions targeted**

Actions that would reduce our own supply chain emissions (our own scope 3)

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO2e savings**

25.95

**Estimated payback**

Other, please specify (The estimated payback varies from project to project)

**Details of proposal**

GIGABYTE's current long-term reduction goal is to cut 50% of gross emissions from the 2009 level by 2025. We also initiated the "333 Reduction Plan" in 2016 which aims at cutting emissions, water use, and waste by 3% each year. To achieve these goals, we continue carrying out emission reduction measures and programs. Our scope 1+2 emissions in 2022 have decreased by 42.99% compared to the 2009 level, and by 6.77% compared to the previous year.

Also, we collaborate with our supply chain partners to reduce scope 3 emissions. Firstly, we call on suppliers to join in the "Reduction. Sharing. Love the Earth Alliance" and make an effort to reach the "333 Reduction" target together with GIGABYTE. In 2022, 51 1-tier suppliers responded to the Plan and provided environmental data to GIGABYTE. Besides, for the purpose of improving the sustainability of our suppliers, we developed GIGABYTE "Supplier Sustainability Assessment" to help our suppliers to meet our expectations on CSR management, the prohibition of corruption and bribery, basic human rights of employees, the prohibition of child labor, health and safety for employees, environmental protection, supply chain responsibility, and contribution to society and community. The supplier who receives the highest score from the Assessment would be awarded the Supplier Sustainability Award at the GIGABYTE's supplier end-of-year party. The Award scheme encourages our suppliers to work with us in order to improve product quality and corporate responsibility. The Award has been held for 11 consecutive years since 2012.

If GIGABYTE itself and most of our key suppliers achieve in cut by 3% tons of scope 1+2 emissions in 2023, we estimate around 25.95 tons of CO2e savings along the supply chain would be associated with HPE calculated on the basis of the proportion of the product sold to HPE in 2022.

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**Requesting member**

Please select

**Group type of project**

Change to supplier operations

**Type of project**

Implementation of energy reduction projects

**Emissions targeted**

Actions that would reduce our own supply chain emissions (our own scope 3)

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO2e savings**

0

**Estimated payback**

Other, please specify (The estimated payback varies from project to project)

**Details of proposal**

GIGABYTE's current long-term reduction goal is to cut 50% of gross emissions from the 2009 level by 2025. We also initiated the "333 Reduction Plan" in 2016 which aims at cutting emissions, water use, and waste by 3% each year. To achieve these goals, we continue carrying out emission reduction measures and programs. Our scope 1+2 emissions in 2022 have decreased by 42.99% compared to the 2009 level, and by 6.77% compared to the previous year.

Also, we collaborate with our supply chain partners to reduce scope 3 emissions. Firstly, we call on suppliers to join in the "Reduction. Sharing. Love the Earth Alliance" and

make an effort to reach the “333 Reduction” target together with GIGABYTE. In 2022, 51 1-tier suppliers responded to the Plan and provided environmental data to GIGABYTE. Besides, for the purpose of improving the sustainability of our suppliers, we developed GIGABYTE “Supplier Sustainability Assessment” to help our suppliers to meet our expectations on CSR management, the prohibition of corruption and bribery, basic human rights of employees, the prohibition of child labor, health and safety for employees, environmental protection, supply chain responsibility, and contribution to society and community. The supplier who receives the highest score from the Assessment would be awarded the Supplier Sustainability Award at the GIGABYTE’s supplier end-of-year party. The Award scheme encourages our suppliers to work with us in order to improve product quality and corporate responsibility. The Award has been held for 11 consecutive years since 2012.

If GIGABYTE itself and most of our key suppliers achieve in cut by 3% tons of scope 1+2 emissions in 2023, we could estimate the CO2e savings associated with DELL based on the proportion of the product sold to DELL. However, since we did not ship products to DELL in 2022, the estimated lifetime CO2e savings filled in here is zero.

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## SC2.2

**(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?**

No

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## SC4.1

**(SC4.1) Are you providing product level data for your organization’s goods or services?**

No, I am not providing data

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## Submit your response

**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

**Please confirm below**

I have read and accept the applicable Terms