

C0. Introduction

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C0.1

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

As a global leader in memory and storage solutions, Micron is transforming how the world uses information to enrich life for all. With a relentless focus on our customers, technology leadership, manufacturing and operational excellence, Micron delivers a rich portfolio of high-performance DRAM, NAND and NOR memory and storage products. Every day, the innovations that our people create fuel the data economy, enabling advances in artificial intelligence (AI) and 5G applications that unleash opportunities — from the data center to the intelligent edge and across the client and mobile user experience. Micron’s approximately 45,000 team members live our values: collaboration, customer focus, innovation, people and tenacity. We share a common goal to pursue technology and product innovation and manufacturing excellence for our customers, partners, communities and society. For more than 40 years and with more than 50,000 patents granted (and growing), Micron has nimbly delivered products that have helped transform how the world uses information to enrich life for all.

Continuous improvement of our environmental performance is a long-term commitment and we take a proactive approach to environmental stewardship, occupational health and safety, and high-quality product standards. Compliance with applicable environmental regulations is considered a minimum standard and Micron implements additional programs where appropriate to provide greater environmental performance and protection. An integral part of this mission is Micron’s commitment to environmental compliance and protection that serves our team members, our customers and the communities in which we operate. Continuous improvement of our environmental performance is a long-term component of Micron’s business mission. Visit [micron.com/sustainability](http://micron.com/sustainability) for more information.

C0.2

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**(C0.2) State the start and end date of the year for which you are reporting data.**

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2021	December 31 2021	No	<Not Applicable>

C0.3

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

- China
- Japan
- Malaysia
- Singapore
- Taiwan, China
- United States of America

C0.4

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

- USD

C0.5

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**(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

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**(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	US5951121038
Yes, a Ticker symbol	NASDAQ: MU

**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(s)	Please explain
Chief Executive Officer (CEO)	Micron's CEO sits on the Board of Directors and has executive oversight of Micron's sustainability efforts, including climate change, which are driven by our Sustainability Council, a team of senior leaders responsible for developing all aspects of sustainability strategy for the company. The Sustainability Council receives oversight and approval from an executive leadership team reporting to the CEO.
Board-level committee	Members of the Board's Governance and Sustainability Committee: The Governance and Sustainability Committee of Micron's Board of Directors oversees the company's development and integration of sustainability efforts, including climate change, supported by other board committees as needed.

**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 – some meetings	<ul style="list-style-type: none"> <li>Reviewing and guiding strategy</li> <li>Reviewing and guiding major plans of action</li> <li>Reviewing and guiding risk management policies</li> <li>Setting performance objectives</li> <li>Monitoring implementation and performance of objectives</li> <li>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</li> </ul>	<Not Applicable>	Micron's sustainability and climate-related strategy, action plans, performance objectives, and progress against goals and targets are presented to the Board's Governance and Sustainability committee at least annually. Risk management policies and significant risk findings are reported to the Board's Audit Committee.

**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	Not assessed	<Not Applicable>	<Not Applicable>	<Not Applicable>

**C1.2**

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

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Sustainability committee <i>Micron's management-level Sustainability Council and environmental sustainability operations team, described in C1.2a.</i>	<Not Applicable >	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Annually
Other C-Suite Officer, please specify (Executive Vice President, Global Operations)	<Not Applicable >	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Annually

**C1.2a**

**(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).**

Micron's Sustainability Council was initiated at the direction of the Chief Executive Officer and President. The Sustainability Council is comprised of a team of senior leaders representing the various aspects of sustainability, including global manufacturing (which accounts for the majority of Micron' Scope 1 and Scope 2 GHG emissions), supply chain, procurement, sales, and technology development. The Sustainability Council oversees climate and other environmental, social and governance (ESG)-related initiatives and goals in Micron's supply chains, operations and products. Micron has also deployed an Environmental Sustainability operations team focused on managing our Scope 1 and 2 emissions, which reports out to senior executives and the sustainability council on a periodic basis. The Sustainability Council and Environmental Sustainability operations team drive our climate strategy and focus on how we can improve the impact of our operations on the environment.

Micron's Executive Vice President, Global Operations maintains oversight, review, and approval of the company's various climate-related operational and supply chain initiatives.

**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**

**(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	Type of incentive	Activity incentivized	Comment
All employees	Monetary reward	Emissions reduction project Energy reduction project Efficiency project	Every Team Member is eligible for monetary and non-monetary recognition for their contribution towards sustainability and climate-related activities through our global peer recognition and other programs.
All employees	Non-monetary reward	Emissions reduction project Energy reduction project Efficiency project	Every Team Member is eligible for monetary and non-monetary recognition for their contribution towards sustainability and climate-related activities.
All employees	Monetary reward	Behavior change related indicator	Every Team Member is eligible for monetary and non-monetary recognition for their contribution towards sustainability and climate-related activities. The Micron Global Wellness program promotes healthy lifestyles for all employees, including energy saving tips, water conservation and waste reduction. All employees can participate and get rewarded for program completion.
All employees	Monetary reward	Emissions reduction target	A component of the company incentive (bonus) pay for Senior executives and all other employees, is based on our sustainability performance, including establishment and management of emissions reduction targets.

**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	0	1	Time horizons used for enterprise risk assessment when evaluating likelihood
Medium-term	1	5	Time horizons used for enterprise risk assessment when evaluating likelihood
Long-term	5	10	Time horizons used for enterprise risk assessment when evaluating likelihood

**C2.1b**

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

A substantive strategic impact on Micron's business is one which directly and significantly affects the company's markets or ability to manufacture its products. One indicator used to define substantive strategic impact is customer ratings of Micron performance, which frequently include climate change indicators.

**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**

Annually

**Time horizon(s) covered**

Short-term  
Medium-term  
Long-term

**Description of process**

Micron works to better understand and address sustainability and climate-related risks and opportunities through collaboration among our sustainability, environmental health and safety, and responsible sourcing programs, along with our various risk management organizations. Current efforts include improving operational energy and water efficiency; working toward our long-term goals and targets for energy, emissions, water and waste; and monitoring regulatory, customer, investor and other stakeholder expectations. Micron's goal is to integrate risk management practices companywide to improve decision-making in governance, strategy, objective-setting and daily operations. We do this by providing tools and knowledge, facilitating open global communication and monitoring continuously. Micron has a network of risk management functions operating across the company, including environmental, health and safety, information technology, business continuity, global quality management, and enterprise risk management (ERM). Our ERM organization accumulates key risk information from the executive risk committee, which consists of select company executives, along with risk assessments performed by other risk management organizations. These results are regularly presented to the executive risk committee, the audit committee of the board of directors, and Micron's full board of directors for consideration. Climate-related risks and opportunities are identified and prioritized by EHS and Sustainability, considering the following criteria: business continuity, impact to brand/reputation, relevance to regional operations, alignment with Micron business strategy, impact to communities, and compliance considerations. Micron routinely monitors greenhouse gas and energy efficiency regulations and policy to understand and evaluate impacts to, and opportunities for, our business, customers, and the communities where we operate. In 2019, Micron completed a climate-related risk assessment, which included "business as usual" and 2-degree scenarios for 2020, 2030, and 2040. We have conducted an initial updated assessment in early 2022. One example of our risk/opportunity identification and management process includes the risk of enhanced reporting obligations. The likelihood of this occurring and how impactful it would be without treatment is evaluated to determine the inherent risk and then treatment details, including who, what, and when are determined and tracked to closure. The treatment for this example includes monitoring greenhouse gas and energy efficiency regulations and policy to understand and evaluate impacts to, and opportunities for, our business, customers, and the communities where we operate. When applicability is determined, an action plan is developed and monitored through execution.

**C2.2a**

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Micron routinely monitors greenhouse gas and energy efficiency regulations and policy (such as carbon taxes) to understand and evaluate impacts to, and opportunities for, our business, customers, and the communities where we operate. This is managed through an enterprise wide EHS data management system that identifies and monitors compliance with applicable regulations.
Emerging regulation	Relevant, always included	Our Global Environmental, Health & Safety, Legal, Product Compliance, and Government Affairs organizations monitor emerging legislative and regulatory programs, such as carbon taxes and product energy efficiency regulations, on a global level to understand and evaluate impacts to, and opportunities for, our business, customers, and the communities where we operate.
Technology	Relevant, always included	Micron low power devices support sustainability and climate change initiatives in our customer's supply chain. Failure to meet such customer specifications might contribute to reduced demand for products.
Legal	Relevant, always included	Micron routinely monitors legal requirements related to greenhouse gases (such as legal limits or reporting requirements), energy efficiency regulations, and other issues to understand and evaluate impacts to, and opportunities for, our business, customers, and the communities where we operate. This is managed through an enterprise wide EHS data management system that identifies and monitors compliance with applicable regulations.
Market	Relevant, always included	Micron routinely monitors market trends and customer demand related to improved product power consumption and greenhouse gas performance to understand and evaluate impacts to our business and our customers and ensure that we continue to address customer expectations and win business.
Reputation	Relevant, always included	Micron's performance on climate change may affect the company's reputation. We take our reputation with local communities, our employees, regulators and customers very seriously and reputational consideration is incorporated into our risk criteria.
Acute physical	Relevant, always included	Micron considers risks arising from extreme weather events, such as cyclones, hurricanes, or floods in our business continuity program. These risks may increase as a result of climate change.
Chronic physical	Relevant, always included	Micron included chronic issue impacts on our facilities (such as availability of water), workforce (such as health and productivity), and communities such as sea level rise, increased temperatures, and changes in water availability in our risk assessments.

**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?**

Please select

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

Current regulation	Carbon pricing mechanisms
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**Primary potential financial impact**

Increased direct costs

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

<Not Applicable>

**Company-specific description**

Micron operates in some countries where carbon taxes and greenhouse gas regulations apply or are under discussion, specifically Singapore, where the Carbon Pricing Act sets a tax of SGD \$5 per tonne CO2e on 80% of facility GHG emissions from 2019 to 2023. With Micron's approximately 1.5 million metric tons of Scope 1 emissions annually in Singapore, this has an estimated potential cost of SGD \$6 million annually (approximately USD \$4.3 million at July 2022 exchange rates). This would be a cost impact on our operations and may require additional reporting, planning, and/or time from designated personnel.

**Time horizon**

Short-term

**Likelihood**

Virtually certain

**Magnitude of impact**

Medium-low

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

4300000

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

<Not Applicable>

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

<Not Applicable>

**Explanation of financial impact figure**

This is an annual potential financial cost, calculated by multiplying SGD \$5 cost/tCO2e established by the Singapore Carbon Pricing Act by the July 2022 exchange rate and by 80% of Micron's current annual tCO2e emissions.

**Cost of response to risk**

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

Micron is taking action on our greenhouse gas emissions as a company in a way that is responsive to this risk. However, these actions are taken for a range of reasons not specifically related to this risk, and are not included in the cost of response to this risk. The cost of our specific response to this risk, related to monitoring GHG and energy efficiency regulations, evaluating potential impacts, reporting required by regulation, and determining next steps resulting from this specific policy are de minimis.

**Comment**

Micron routinely monitors greenhouse gas and energy efficiency regulations and policy to understand and evaluate impacts to, and opportunities for, our business, customers, and the communities where we operate. Management activities are embedded into business-as-usual activities within the business and are therefore not additional.

**Identifier**

Risk 6

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

Please select

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

Please select

**Primary potential financial impact**

Increased direct costs

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

<Not Applicable>

**Company-specific description**

In the past few years intensity, frequency and variability of typhoons have been increasing, particularly in Asian countries where Micron operates. These events have caused temporary power failures, short-term business interruptions, and required contingencies to ensure water availability. Impact has been controlled and is considered manageable.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium-low

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

No, we do not have this figure

**Potential financial impact figure (currency)**

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

**Explanation of financial impact figure**

Micron realizes that there is potential for financial impact, the assessment of which is subject to a number of dynamic variables.

**Cost of response to risk**

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

Micron routinely monitors conditions and potential impacts to, and opportunities for, our business, customers, and the communities where we operate. Management activities are embedded into business-as-usual activities within the business and are therefore not additional.

**Comment**

**Identifier**

Risk 4

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

Please select

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

Market	Changing customer behavior
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**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**

As awareness of sustainability and climate change increases, the design of new products with higher performance and reduced environmental impact (such as increased energy efficiency in memory and storage products) could be important to maintaining and increasing our role in customers' portfolio.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium-high

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

No, we do not have this figure

**Potential financial impact figure (currency)**

&lt;Not Applicable&gt;

**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**

Micron realizes that there is potential for financial impact, the assessment of which is subject to a number of dynamic variables.

**Cost of response to risk****Description of response and explanation of cost calculation**

Micron routinely monitors conditions and potential impacts to, and opportunities for, our business, customers, and the communities where we operate. Management activities are embedded into business-as-usual activities within the business and are therefore not additional.

**Comment****Identifier**

Risk 5

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

Please select

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

Market	Changing customer behavior
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**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**

&lt;Not Applicable&gt;

**Company-specific description**

Corporate strategies for sustainability and climate change may become critical indicators for customers and investors. If this happens and Micron's corporate performance on these indicators is seen as insufficient, customers may reduce business with the company.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

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

No, we do not have this figure

**Potential financial impact figure (currency)**

&lt;Not Applicable&gt;

**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**

Micron realizes that there is potential for financial impact, the assessment of which is subject to a number of dynamic variables.

**Cost of response to risk****Description of response and explanation of cost calculation**

Micron routinely monitors conditions and potential impacts to, and opportunities for, our business, customers, and the communities where we operate. Management activities are embedded into business-as-usual activities within the business and are therefore not additional.

**Comment****Identifier**

Risk 7

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

Please select

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

Please select

**Primary potential financial impact**

Increased indirect (operating) costs

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

<Not Applicable>

**Company-specific description**

Reduced revenue from decreased production capacity (e.g. employee productivity, equipment degradation, transportation difficulties). Temperature extremes increase cooling costs which can be nonlinear with temperatures; decrease productivity by contributing to heat-related illnesses, increase equipment degradation, and negatively affect transportation infrastructure.

**Time horizon**

Medium-term

**Likelihood**

Very likely

**Magnitude of impact**

Medium-high

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

No, we do not have this figure

**Potential financial impact figure (currency)**

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

**Explanation of financial impact figure**

Micron realizes that there is potential for financial impact, the assessment of which is subject to a number of dynamic variables.

**Cost of response to risk**

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

Micron routinely monitors conditions and potential impacts to, and opportunities for, our business, customers, and the communities where we operate. Management activities are embedded into business-as-usual activities within the business and are therefore not additional.

**Comment**

**Identifier**

Risk 2

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

Please select

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

Emerging regulation	Carbon pricing mechanisms
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**Primary potential financial impact**

Increased direct costs

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

<Not Applicable>

**Company-specific description**

Micron operates in some countries where carbon taxes and greenhouse gas regulations apply or are under discussion, specifically Singapore, where the Carbon Pricing Act establishes that the carbon tax rate will be increased to SGD \$25 per tonne CO2e on an estimated 80% of facility GHG emissions in 2024 and 2025, SGD \$45 per tonne in 2026 and 2027, with a goal to reach SGD \$50-80 per tonne by 2030. With Micron's approximately 1.5 million metric tons of Scope 1 emissions annually in Singapore, this has an estimated potential cost of SGD \$30 million in 2024-5, SGD \$54 million in 2026-7, and between SGD \$60-96 million annually by 2030 onward if emissions are not reduced per Micron's new climate goals. This is likely to have a cost impact on our operations and may require additional reporting, planning, and/or time from designated personnel.

**Time horizon**

Long-term

**Likelihood**

Virtually certain

**Magnitude of impact**

Medium

**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)**

21000000

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



69000000

**Explanation of financial impact figure**

This is an annual potential financial cost, calculated by multiplying expected cost/tCO2e minimum (SGD \$25 in 2024-5) and potential maximum (SGD \$80 by 2030) established by the Singapore Carbon Pricing Act by the July 2022 exchange rate and by 80% of Micron's current annual Singapore tCO2e emissions.

**Cost of response to risk**

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

Micron is taking action on our greenhouse gas emissions as a company in a way that is responsive to this risk. However, these actions are taken for a range of reasons not specifically related to this risk, and are not included in the cost of response to this risk. Overall management activities are embedded into business-as-usual activities within the business and are therefore not additional. The cost of our specific response to this risk, related to monitoring GHG and energy efficiency regulations, evaluating potential impacts, reporting required by regulation, and determining next steps resulting from this specific policy are de minimis.

**Comment**

Micron routinely monitors greenhouse gas and energy efficiency regulations and policy to understand and evaluate impacts to, and opportunities for, our business, customers, and the communities where we operate.

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C2.4

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

Yes

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C2.4a

**(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**

Micron has a year-on-year track record of implementing projects to improve the energy efficiency of our tools and systems, as well as replacing less efficient equipment with new equipment with higher energy efficiency. Identified projects include: - Manufacturing process efficiency improvement. - HVAC optimization/upgrade to high efficiency including pressure optimization, make up air unit improvement, and exhaust balance/optimization,. - Replacement of lighting from fluorescent to LED light and installation of light sensors. - Mechanical upgrades to higher efficiency motors, implementation of advanced control strategies, and optimization. - Compressed Air system optimization including leak reduction, consumption optimization. - Use of free cooling during winter season. - Replacement of old equipment with high efficiency systems, including chillers, pumps, motors, fans. - Various projects including mechanical upgrades, implementation of advanced control strategies, and optimization. - Optimization of utilities consumption (power, CDA, heat). We have taken this opportunity across our manufacturing operations to implement improvements that may have a substantive financial or strategic impact on our business. In CY21 we invested in energy efficiency improvements across our network as reported in 4.3a

**Time horizon**

Short-term

**Likelihood**

Very likely

**Magnitude of impact**

Medium-high

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

No, we do not have this figure

**Potential financial impact figure (currency)**

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

**Explanation of financial impact figure**

Potential financial impact has not yet been determined

**Cost to realize opportunity**

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

Micron continuously identifies energy saving projects and evaluates cost/benefit to allocate necessary resources (capex).

**Comment**

**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**

81% of Micron's revenue comes from low-carbon (energy efficient) products, such as our low-power LPDDR5 DRAM memory product (see question C4.5a). Climate change regulations and customer interest in these products should maintain or increase the demand for these products and potentially drive innovation in the design of new products.

**Time horizon**

Short-term

**Likelihood**

Likely

**Magnitude of impact**

High

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

No, we do not have this figure

**Potential financial impact figure (currency)**

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

**Explanation of financial impact figure**

Potential financial impact has not yet been determined.

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

Micron routinely monitors market trends in terms of power consumption as well as other conditions and potential impacts to understand and evaluate impacts to, and opportunities for, our business, our customers, and the communities where we operate. These and other management activities are embedded into business-as-usual activities and are not considered an additional cost specific to this opportunity.

**Comment**

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**Identifier**

Opp3

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

Please select

**Opportunity type**

Markets

**Primary climate-related opportunity driver**

Access to new markets

**Primary potential financial impact**

Increased revenues through access to new and emerging markets

**Company-specific description**

The design of low power products could create an opportunity to gain new markets and customers. Improvements in our climate change strategy could be reflected in our customer's scorecards and might increase the demand for our products.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

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

No, we do not have this figure

**Potential financial impact figure (currency)**

<Not Applicable>

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

<Not Applicable>

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

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<Not Applicable>

**Explanation of financial impact figure**

Potential financial impact has not yet been determined

**Cost to realize opportunity**

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

Micron routinely monitors market trends in terms of power consumption as well as other conditions and potential impacts to understand and evaluate impacts to, and opportunities for, our business, our customers, and the communities where we operate. These and other management activities are embedded into business-as-usual activities and are not considered an additional cost specific to this opportunity.

**Comment**

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**C3. Business Strategy**

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**C3.1**

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

**Row 1**

**Transition plan**

Please select

**Publicly available transition plan**

<Not Applicable>

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

<Not Applicable>

**Description of feedback mechanism**

<Not Applicable>

**Frequency of feedback collection**

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

**C3.2**

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**(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	<Not Applicable>	<Not Applicable>

**C3.2a**

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**(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
Please select	Company-wide	<Not Applicable>	Micron's strategy, particularly its new goals set in May 2022 to achieve net zero GHG emissions in scope 1 and 2 by 2050 as well as a 42% absolute reduction in scope 1 GHG emissions by 2030 from a 2020 baseline, has been informed by the Paris Agreement's objective to limit global temperature rise to no more than 1.5°C. Additionally, the company has sought inputs on the potential impacts of climate change resulting from warming under business-as-usual, 2°C and 1.5°C scenarios.

**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

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

## C4. Targets and performance

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### C4.1

---

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

Intensity target

### C4.1b

---

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Year target was set

2020

Target coverage

Company-wide

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

<Not Applicable>

Intensity metric

Metric tons CO2e per unit of production

Base year

2018

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3 (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)

0.000101

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

100

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

100

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this Scope 3 intensity figure

<Not Applicable>

% of total base year emissions in all selected Scopes covered by this intensity figure

100

Target year

2022

Targeted reduction from base year (%)

55

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]

0.00004545

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)

**Intensity figure in reporting year for Scope 3 (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)**

0.000061

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

72.007200720072

**Target status in reporting year**

Underway

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

No, and we do not anticipate setting one in the next 2 years

**Target ambition**

<Not Applicable>

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

Target: reduce total Scope 1 and Scope 2 (market-based) emissions by 55% per unit of production by 2022 from 2018 levels. Micron plans to reduce the intensity indicator through the implementation of multiple emission reduction activities, like renewable energy procurement and reduction of process related emissions. In CY21, Micron implemented further energy savings projects, actions to increase Heat Transfer Fluids (coolants) use efficiency, installed additional abatement systems for process greenhouse gases by realizing Scope 1 and Scope 2 emissions reduction detailed in section 4.3b.

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

To continue with projects execution as planned

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

<Not Applicable>

**Target reference number**

Int 2

**Year target was set**

2020

**Target coverage**

Company-wide

**Scope(s)**

Scope 1

Scope 2

**Scope 2 accounting method**

Market-based

**Scope 3 category(ies)**

<Not Applicable>

**Intensity metric**

Metric tons CO2e per unit of production

**Base year**

2018

**Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)****Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)****Intensity figure in base year for Scope 3 (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)**

0.000101

**% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure****% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure****% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this Scope 3 intensity figure**

<Not Applicable>

**% of total base year emissions in all selected Scopes covered by this intensity figure**

100

**Target year**

2030

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

75

**Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]**

0.00002525

**% change anticipated in absolute Scope 1+2 emissions****% change anticipated in absolute Scope 3 emissions****Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)****Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)**

**Intensity figure in reporting year for Scope 3 (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)**

0.000061

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

52.8052805280528

**Target status in reporting year**

Underway

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

No, and we do not anticipate setting one in the next 2 years

**Target ambition**

<Not Applicable>

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

Target: reduce total Scope 1 and Scope 2 (market-based) emissions by 75% per unit of production by 2030 from 2018 levels. Micron plans to reduce the intensity indicator through the implementation of multiple emission reduction activities, like renewable energy procurement and reduction of process related emissions. In CY21, Micron implemented further energy savings projects, actions to increase Heat Transfer Fluids (coolants) use efficiency, installed additional abatement systems for process greenhouse gases by realizing Scope 1 and Scope 2 emissions reduction detailed in section 4.3b

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

To continue with projects execution as planned

**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?**

Target(s) to increase low-carbon energy consumption or production

Other climate-related target(s)

**C4.2a**

---

**(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.**

**Target reference number**

Low 1

**Year target was set**

2020

**Target coverage**

Country/region

**Target type: energy carrier**

Electricity

**Target type: activity**

Consumption

**Target type: energy source**

Renewable energy source(s) only

**Base year**

2018

**Consumption or production of selected energy carrier in base year (MWh)**

0

**% share of low-carbon or renewable energy in base year**

0

**Target year**

2025

**% share of low-carbon or renewable energy in target year**

100

**% share of low-carbon or renewable energy in reporting year**

0.01

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

0.01

**Target status in reporting year**

Underway

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

Yes, INT 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**

Micron plans to adopt 100% renewable energy for its U.S. operations by the end of CY25. In 2020, we began negotiations to develop and procure new renewable energy in the United States. In addition, we see opportunities for on-site solar globally as local regulations allow. Micron is a member of the Clean Energy Buyers Association (CEBA), a membership association for large-scale energy buyers, developers, service providers and nongovernmental organizations. In early 2021, we joined our CEBA partners in releasing a policy statement calling on the U.S. government to enact national policy solutions that will accelerate the transition to a zero-carbon power system by decarbonizing the grid and increasing federal funding for clean energy technology research, development and demonstration. In CY21, Micron expanded its rooftop solar footprint in Singapore and installed new capacity in Japan.

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

We plan to expand on-site solar installations across regions where feasible, including China and Taiwan in 2022. In addition, Micron's facilities in Malaysia secured contracts early in 2022 to purchase 100% renewable energy through the Green Electricity Tariff program. Throughout 2021, we also participated in a consortium working group to create and implement a new means of securing a clean energy supply in Japan. We are working toward PPAs for other sites in the U.S., Singapore and Taiwan and exploring ways to source clean energy in other regions.

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

<Not Applicable>

---

**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**

2017

**Target coverage**

Country/region

**Target type: absolute or intensity**

Absolute

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

Energy consumption or efficiency	Other, please specify (Percentage)
----------------------------------	------------------------------------

**Target denominator (intensity targets only)**

<Not Applicable>

**Base year**

2016

**Figure or percentage in base year**

0

**Target year**

2022

**Figure or percentage in target year**

10

**Figure or percentage in reporting year**

9.5

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

95

**Target status in reporting year**

Underway

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

Yes, INT 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**

Energy saving target, including fuel and purchased energy (electricity, steam, cooling). % emissions in scope and base year emissions are calculated as total Scope 2 (location based) and Scope 1 from fuel consumption (all energy related sources). Micron defined a multi-year goal to achieve at least 10% energy savings by 2022 compared to 2016 baseline year energy use. With additional projects implemented in CY2021, we achieved a cumulative 9.5% energy savings compared to CY2016 total energy consumption (baseline), corresponding to 95% of the target. Details of energy savings projects and associated CO2e savings are reported in section 4.3b.

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

Micron is working to decrease our GHG emissions from electricity use by investing in energy-efficient equipment and purchasing renewable energy. We continue to optimize compressed dry air (CDA) systems and chillers to improve efficiency. For example, new CDA units at our Boise facility are forecast to significantly reduce energy consumption compared to the prior system. At the production tool level, we are using automation and installing control devices to reduce utility consumption during idle mode. Our expanded cleanroom spaces in Manassas, VA, improves operational efficiency by deploying dual-temperature chillers, high-efficiency compressors and dryers, energy resourceful code economizers and variable frequency drives on all equipment.

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

<Not Applicable>

**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		
To be implemented*	205	241466
Implementation commenced*	150	823402
Implemented*	192	296763
Not to be implemented		



C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

**Initiative category & Initiative type**

Low-carbon energy consumption	Solar PV
-------------------------------	----------

**Estimated annual CO2e savings (metric tonnes CO2e)**  
260

**Scope(s) or Scope 3 category(ies) where emissions savings occur**  
Scope 2 (market-based)

**Voluntary/Mandatory**  
Voluntary

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

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

**Payback period**  
Please select

**Estimated lifetime of the initiative**  
Ongoing

**Comment**  
New rooftop solar panel and onsite PPA (solar) started in 2021

**Initiative category & Initiative type**

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

**Estimated annual CO2e savings (metric tonnes CO2e)**  
7334

**Scope(s) or Scope 3 category(ies) where emissions savings occur**  
Scope 2 (market-based)

**Voluntary/Mandatory**  
Voluntary

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

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

**Payback period**  
Please select

**Estimated lifetime of the initiative**  
6-10 years

**Comment**  
Combination of projects on HVAC optimization/upgrade to high efficiency: pressure optimization, make up air unit improvement, exhaust balance/optimization. Including smart controls associated to the upgrade. Lifetime ranges have been determined as the average of projects within this category.

**Initiative category & Initiative type**

Energy efficiency in buildings	Motors and drives
--------------------------------	-------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**  
3327

**Scope(s) or Scope 3 category(ies) where emissions savings occur**  
Scope 2 (market-based)

**Voluntary/Mandatory**  
Voluntary

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

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

**Payback period**  
Please select

**Estimated lifetime of the initiative**  
6-10 years

**Comment**  
Mechanical upgrades to higher efficiency motors, implementation of advanced control strategies, and optimization. Lifetime ranges have been determined as the average

of projects within this category.

---

**Initiative category & Initiative type**

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

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

3158

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

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

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

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

**Payback period**

Please select

**Estimated lifetime of the initiative**

6-10 years

**Comment**

Replaced lighting from Fluorescent to LED light, installation of light sensors and smart control. Lifetime ranges have been determined as the average of projects within this category.

---

**Initiative category & Initiative type**

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

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

66897

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

Scope 1

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

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

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

**Payback period**

Please select

**Estimated lifetime of the initiative**

6-10 years

**Comment**

Combination of projects - optimization of uptime, operational parameters adjustments. Optimization of utilities consumption (power, CDA, heat), optimization of process duration. Lifetime ranges have been determined as the average of projects within this category.

---

**Initiative category & Initiative type**

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

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

2969

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

Scope 1

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

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

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

**Payback period**

Please select

**Estimated lifetime of the initiative**

6-10 years

**Comment**

Replacement of old equipment with high efficiency systems: chillers, pumps, motors, fans. Lifetime ranges have been determined as the average of projects within this category.

**Initiative category & Initiative type**

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

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

2767

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

Scope 1  
Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

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

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

**Payback period**

Please select

**Estimated lifetime of the initiative**

6-10 years

**Comment**

Chilled water and cooling system optimization. Lifetime ranges have been determined as the average of projects within this category.

**Initiative category & Initiative type**

Energy efficiency in production processes	Compressed air
---	----------------

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

875

**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)**

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

**Payback period**

Please select

**Estimated lifetime of the initiative**

Please select

**Comment**

Compressed Air system optimization: leak reduction, consumption optimization. Lifetime ranges have been determined as the average of projects within this category.

**Initiative category & Initiative type**

Non-energy industrial process emissions reductions	Other, please specify (Abatement system and refrigerant replacement)
--	--

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

249762

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

Scope 1

**Voluntary/Mandatory**

Voluntary

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

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

**Payback period**

Please select

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Additional installation of abatement units for process greenhouse gases (only new units installed in 2021 are considered). Replacement of high GWP refrigerants (HTF) with low GWP. ROI not applicable.

**Initiative category & Initiative type**

Fugitive emissions reductions	Refrigerant leakage reduction
-------------------------------	-------------------------------

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

124378

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

Scope 1

**Voluntary/Mandatory**

Voluntary

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

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

**Payback period**

Please select

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Leakage reduction of refrigerants used in chillers

**Initiative category & Initiative type**

Other, please specify	Other, please specify (Alternative power supply with lower emission factor)
-----------------------	---

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

186052

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

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

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

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

**Payback period**

Please select

**Estimated lifetime of the initiative**

21-30 years

**Comment**

Additional switch of operational power loading under an alternative power supply with lower emission factor than existing one (additional switch compared to what reported in CDP 2021)

**C4.3c**

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

Method	Comment
Lower return on investment (ROI) specification	Micron defined internal Sustainability ROI and NPV guidelines to prioritize reduction opportunities.
Other	Benchmarking on emission reduction solutions in the industry sector

**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**

Other, please specify (Power consumption by application)

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

Power	Other, please specify (electronic components)
-------	---

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

Lower power usage and higher performance is the driver in the evolution of our entire product line. As an example, products for the mobile market require dense optimized power efficient solutions while memory and storage solutions for the compute centric markets drive more efficient workload management compared with alternate technologies. Energy efficiency is a key competitive advantage to our products and will continue to be an integral part of the R&D, design and manufacture of our core products.

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

No

**Methodology used to calculate avoided emissions**

<Not Applicable>

**Life cycle stage(s) covered for the low-carbon product(s) or services(s)**

<Not Applicable>

**Functional unit used**

<Not Applicable>

**Reference product/service or baseline scenario used**

<Not Applicable>

**Life cycle stage(s) covered for the reference product/service or baseline scenario**

<Not Applicable>

**Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario**

<Not Applicable>

**Explain your calculation of avoided emissions, including any assumptions**

<Not Applicable>

**Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year**

81

**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?**

Yes, a divestment

**Name of organization(s) acquired, divested from, or merged with**

Manufacturing site divested

**Details of structural change(s), including completion dates**

Divestment was finalized at the end of the year, reason why we included emissions in 2021 inventory.

**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	No	<Not Applicable>

## C5.1c

(C5.1c) Have your organization's base year emissions been recalculated as result of the changes or errors reported in C5.1a and C5.1b?

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	No, because we do not have the data yet and plan to recalculate next year	We will recalculate baseline by considering other changes and will report next year

## C5.2

(C5.2) Provide your base year and base year emissions.

### Scope 1

**Base year start**

January 1 2018

**Base year end**

December 31 2018

**Base year emissions (metric tons CO2e)**

2945735

**Comment**

### Scope 2 (location-based)

**Base year start**

January 1 2018

**Base year end**

December 31 2018

**Base year emissions (metric tons CO2e)**

2672875

**Comment**

### Scope 2 (market-based)

**Base year start**

January 1 2018

**Base year end**

December 31 2018

**Base year emissions (metric tons CO2e)**

3177990

**Comment**

### Scope 3 category 1: Purchased goods and services

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

### Scope 3 category 2: Capital goods

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

### 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**

**Scope 3 category 4: Upstream transportation and distribution**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 5: Waste generated in operations**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 6: Business travel**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 7: Employee commuting**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 8: Upstream leased assets**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 9: Downstream transportation and distribution**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 10: Processing of sold products**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 11: Use of sold products**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 12: End of life treatment of sold products**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 13: Downstream leased assets**

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

**Scope 3 category 14: Franchises**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

**Scope 3 category 15: Investments**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

**Scope 3: Other (upstream)**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

**Scope 3: Other (downstream)**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

**C5.3**

---

**(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

**C6. Emissions data**

---

**C6.1**

---

**(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)**

3459483

**Start date**

<Not Applicable>

**End date**

<Not Applicable>

**Comment**

Micron Scope 1 emissions are related to process GHG gases (PFC, HFC, SF6, NF3, N2O), Heat Transfer Fluids, stationary fuel combustion, mobile fuel combustion (owned vehicles) and refrigerants.

**C6.2**

---



**(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 are reporting a Scope 2, market-based figure

**Comment**

We are reporting both location-based and market based figures. Location-based calculated by using the most recent factors published by relevant agencies for each location/country. Market-based calculated using Supplier specific emission rates where applicable/available. Whenever the market-based factor is not available we considered the location-based EF for the calculation of equivalent CO2 emissions.

**C6.3**

---

**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?**

**Reporting year**

**Scope 2, location-based**

3448513

**Scope 2, market-based (if applicable)**

3961500

**Start date**

<Not Applicable>

**End date**

<Not Applicable>

**Comment**

Micron Scope 2 emissions include: purchased electricity, purchased steam, purchased cooling.

**C6.4**

---

**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?**

Yes

**C6.4a**

---

**(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.**

**Source**

Non-manufacturing locations: sales offices and design centers, in multiple countries

**Relevance of Scope 1 emissions from this source**

Emissions are not relevant

**Relevance of location-based Scope 2 emissions from this source**

Emissions are not relevant

**Relevance of market-based Scope 2 emissions from this source (if applicable)**

Emissions are not relevant

**Explain why this source is excluded**

Sales and design offices in America, Asia and Europe have multiple locations even within the same country. The most significant GHG source would be electricity consumption that is less than 1% of total Scope 2 emissions (market-based) and about 1% of total Scope 2 emissions (location-based)

**Estimated percentage of total Scope 1+2 emissions this excluded source represents**

1

**Explain how you estimated the percentage of emissions this excluded source represents**

The above estimated percentage is around 0.5% (system does not allow decimal) of total Scope 1 and 2 from non manufacturing sites compared to manufacturing locations reported. Collected annual power consumption, fuel consumption and refrigerants data where Micron has operational control.

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**C6.5**

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**(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)

2155135

### Emissions calculation methodology

Hybrid method  
Average data method  
Spend-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

57

### Please explain

Selected suppliers based upon total spend CY2021. Scope 3 emissions calculated by using CDP Supply Chain 2021 information in terms of emission intensity factors and allocation where available. Contribution to total spend 2021 of suppliers' service impacting Scope 2 (such as electricity providers) and suppliers impacting other Scope 3 categories (such as business travel and transportation/distribution) are not counted under this category to prevent double counting. Percentage of data obtained from suppliers is calculated by considering emissions calculated from intensity emission factors reported by suppliers compared to total emissions. Remaining emissions have been calculated by using industry sector average intensity provided by CDP Supply Chain.

## Capital goods

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

966055

### Emissions calculation methodology

Hybrid method  
Average data method  
Spend-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

57

### Please explain

Selected suppliers based upon total spend CY2021. Scope 3 emissions calculated by using CDP Supply Chain 2021 supplier data in terms of emission intensity factors Scope 1, Scope 2 and Scope 3 (either self-reported/calculated or industry sector average ). Contribution to total spend 2021 of suppliers' service impacting Scope 2 (such as electricity providers) and suppliers impacting other Scope 3 categories (such as business travel and transportation/distribution) are not counted under this category to prevent double counting. Percentage of data obtained from suppliers is calculated by considering emissions calculated from intensity emission factors reported by suppliers compared to total emissions. Remaining emissions have been calculated by using industry sector average intensity provided by CDP Supply Chain.

## Fuel-and-energy-related activities (not included in Scope 1 or 2)

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

638317

### Emissions calculation methodology

Average data method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

This category includes upstream emissions from purchased fuels and electricity, including generation, transmission & distribution (T&D) and any other losses. Emissions due to fuel and energy related activities are calculated using actual fuel and electricity consumption for CY2021 along with UK DEFRA emission factors (revision 2019, DEFRA did not update oversea data for CY2021).

## Upstream transportation and distribution

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

205915

### Emissions calculation methodology

Hybrid method  
Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

28

### Please explain

Included upstream transportation of: purchased goods, capital goods, transfer of products/materials between Micron sites. Data source: emissions reports from some suppliers (28% of total emissions), remaining calculated from Micron report with activity data (by carrier, transportation mode, total kg/distance) and EPA emission factors, Table 8 (last modified 1 April 2022). Emissions from outbound logistics services (reported as downstream transportation/distribution previously) have been included in this upstream category because outbound services are also paid by Micron (GHG Protocol guideline for Corporate Value Chain, page 44)

## Waste generated in operations

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

9505

### Emissions calculation methodology

Average data method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Calculated CO2 emissions based on tonnage of CY2020 hazardous and non-hazardous waste sent to incineration (with and without energy recovery), recycle, landfill, composting, chemical treatment. Significant reduction of waste sent to Landfill compared to 2020, driving emissions down. Sources of emission factors: DEFRA Waste disposal (2021)

## Business travel

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

1419

### Emissions calculation methodology

Supplier-specific method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

### Please explain

Emissions from business travel (including flights, hotel, and car rentals) are calculated using actual data that is tracked and reported by Micron's travel agencies based on actual CY2020 business travels data. GHG emissions are then calculated by using EPA emission factors. 2021 emissions lower than 2020 as a consequence of prolonged COVID-19 travel restrictions during the reporting year.

## Employee commuting

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

1270

### Emissions calculation methodology

Fuel-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

### Please explain

Emissions from the commuter buses used by our employees in Singapore, Japan, Taiwan and China. Transportation vendors provided distance/fuel consumption data for all relevant locations. Emissions calculated by using fuel consumption in CY2021 as provided by the bus service providers, source of emission factors for relevant fuels EPA 2021 update.

## 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

Micron does not have relevant leased asset for the reporting year

## Downstream transportation and distribution

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

In completing a Scope 3 screening and inventory, we have determined that emissions from outbound logistics services (reported as downstream transportation/distribution previously) have to be included in the "Upstream transportation and distribution" category because outbound services are paid by Micron (GHG Protocol guideline for Corporate Value Chain, page 44). Total emissions from distribution and transportation upstream and downstream are then reported in "Upstream transportation and distribution".

## Processing of sold products

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As per WBCSD/WRI Greenhouse Gas Protocol (GHGP), "If the eventual end use of sold intermediate products may be unknown, companies may disclose and justify the exclusion of downstream emissions from categories 9, 10, 11, and 12 in the report." In completing a scope 3 screening and inventory, we have determined that our sold products should be classified as 'intermediate products' per the GHGP because Micron does not sell any finished/ final products and it is very difficult to estimate the processing, end use and end of life treatment of our products given the range of application types and products which use memory and storage. Thus, we have determined that categories 9, 10,11 and 12 are not relevant for Micron.

## Use of sold products

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As per WBCSD/WRI Greenhouse Gas Protocol (GHGP), "If the eventual end use of sold intermediate products may be unknown, companies may disclose and justify the exclusion of downstream emissions from categories 9, 10, 11, and 12 in the report." In completing a scope 3 screening and inventory, we have determined that our sold products should be classified as 'intermediate products' per the GHGP because Micron does not sell any finished/ final products and it is very difficult to estimate the processing, end use and end of life treatment of our products given the range of application types and products which use memory and storage. Thus, we have determined that categories 9, 10,11 and 12 are not relevant for Micron.

## End of life treatment of sold products

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As per WBCSD/WRI Greenhouse Gas Protocol (GHGP), "If the eventual end use of sold intermediate products may be unknown, companies may disclose and justify the exclusion of downstream emissions from categories 9, 10, 11, and 12 in the report." In completing a scope 3 screening and inventory, we have determined that our sold products should be classified as 'intermediate products' per the GHGP because Micron does not sell any finished/ final products and it is very difficult to estimate the processing, end use and end of life treatment of our products given the range of application types and products which use memory and storage. Thus, we have determined that categories 9, 10,11 and 12 are not relevant for Micron.

#### 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**

Micron does not lease assets to others

#### 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**

not applicable

#### 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**

not applicable

#### 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**

not applicable

#### 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**

not applicable

### C6.7

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**(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?**

No

## C6.10

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**(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.**

**Intensity figure**

0.00023

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

6907996

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

29619000000

**Scope 2 figure used**

Location-based

**% change from previous year**

19

**Direction of change**

Decreased

**Reason for change**

Unit measure: metric tons CO2e/\$ revenue - value decreased as the revenue increased in CY21 compared to CY20 more than the combined Scope 1+ Scope 2 increase, positively impacted by proactive reduction initiatives implemented during CY2021 and reported in 4.3a and 4.3b. NOTE: Revenue figure is from Micron FY21 Q2-4 and FY22Q1 as a close approximation of calendar year, covering December 2020-November 2021

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**Intensity figure**

0.00025

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

7420983

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

29619000000

**Scope 2 figure used**

Market-based

**% change from previous year**

23

**Direction of change**

Decreased

**Reason for change**

Unit measure: metric tons CO2e/\$ revenue - value decreased as the revenue increased in CY21 compared to CY20 more than the combined Scope 1+ Scope 2 increase, positively impacted by proactive reduction initiatives implemented during CY2021 and reported in 4.3a and 4.3b. NOTE: Revenue figure is from Micron FY21 Q2-4 and FY22Q1 as a close approximation of calendar year, covering December 2020-November 2021

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## C7. Emissions breakdowns

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### C7.1

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**(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?**

Yes

### C7.1a

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**(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 CO2e)	GWP Reference
CO2	501201	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	223	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	322791	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	183851	IPCC Fourth Assessment Report (AR4 - 100 year)
PFCs	1504910	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	62884	IPCC Fourth Assessment Report (AR4 - 100 year)
NF3	428085	IPCC Fourth Assessment Report (AR4 - 100 year)
Other, please specify (Heat Transfer Fluids (HTF))	455538	IPCC Fourth Assessment Report (AR4 - 100 year)

## C7.2

**(C7.2) Break down your total gross global Scope 1 emissions by country/region.**

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	454040
Singapore	1532652
Taiwan, China	418222
Japan	999019
China	54324
Malaysia	1226

## C7.3

**(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.**

By activity

### C7.3c

**(C7.3c) Break down your total gross global Scope 1 emissions by business activity.**

Activity	Scope 1 emissions (metric tons CO2e)
Manufacturing process	2477358
Combustion	501697
Refrigeration/Cooling	480428

## C7.5

**(C7.5) Break down your total gross global Scope 2 emissions by country/region.**

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
United States of America	333253	469843
Singapore	965671	965671
Taiwan, China	1514197	1807224
Japan	368359	451729
China	166698	166698
Malaysia	100335	100335

## 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)
Wafer fabrication	2916216	3429203
Assembly and Test	532297	532297

**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?**

Increased

**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	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	260	Decreased	0.004	In CY21, Micron installed new rooftop solar in Japan and signed onsite PPA in Singapore. Change in emissions has been calculated by considering the power generated and consumed onsite multiplied by the grid emission factor (market based). Percentage has been calculated as ratio of emissions avoided in CY2021 compared to combined Scope 1 and 2 (market based) in calendar year 2020
Other emissions reduction activities	647520	Decreased	9	CO2 emissions avoided from energy saving projects, refrigerant leak reduction, process gases abatement implemented during CY21 (breakdown reported in 4.3b). %change = [(total CO2 emissions avoided in CY21)/(CY20 Scope1+2 market-based as reported in CDP2021)]*100
Divestment	0	No change	0	Not applicable in the reporting year
Acquisitions	0	No change	0	Not applicable in the reporting year
Mergers	0	No change	0	Not applicable in the reporting year
Change in output	279694	Increased	3.9	Increased production output at existing manufacturing sites in CY2021. Emission Value % = (CY21 Scope 1 + Scope 2 emissions)/(Scope 1+Scope 2 CY2020)*100. Reduction activities implemented in CY21 mitigated the increase.
Change in methodology	0	No change	0	Not applicable in the reporting year
Change in boundary	0	No change	0	Not applicable in the reporting year
Change in physical operating conditions	0	No change	0	Not applicable in the reporting year
Unidentified	0	No change	0	Not applicable in the reporting year
Other	0	No change	0	Not applicable in the reporting year

**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?**

Market-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	Yes
Generation of electricity, heat, steam, or cooling	Yes

**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	2431468	2431468
Consumption of purchased or acquired electricity	<Not Applicable>	556	7784153	7784709
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	88731	88731
Consumption of purchased or acquired cooling	<Not Applicable>	0	113317	113317
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	86	<Not Applicable>	86
Total energy consumption	<Not Applicable>	642	10417669	10418311

**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	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

**C8.2c**

**(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**

**Sustainable biomass**

**Heating value**

Unable to confirm heating value

**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**

0

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

not applicable

**Other biomass**

**Heating value**

Unable to confirm heating value

**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**

0

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

not applicable

**Other renewable fuels (e.g. renewable hydrogen)**

**Heating value**

Unable to confirm heating value

**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**

0

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

not applicable

**Coal**

**Heating value**

Unable to confirm heating value

**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**

0

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

not applicable

**Oil**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

22225

**MWh fuel consumed for self-generation of electricity**

1480

**MWh fuel consumed for self-generation of heat**

10947

**MWh fuel consumed for self-generation of steam**

662

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

9136

**Comment**

Diesel considered under the OIL category

**Gas**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

2409243

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

936527

**MWh fuel consumed for self-generation of steam**

317692

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

1155024

**Comment**

Natural gas and LPG considered under GAS category

**Other non-renewable fuels (e.g. non-renewable hydrogen)**

**Heating value**

Unable to confirm heating value

**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**

0

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

not applicable

**Total fuel****Heating value**

LHV

**Total fuel MWh consumed by the organization**

2431468

**MWh fuel consumed for self-generation of electricity**

1480

**MWh fuel consumed for self-generation of heat**

947475

**MWh fuel consumed for self-generation of steam**

318353

**MWh fuel consumed for self-generation of cooling**

&lt;Not Applicable&gt;

**MWh fuel consumed for self- cogeneration or self-trigeneration**

1164160

**Comment**

Total Diesel, Natural Gas and LPG used in CY2021

**C8.2d****(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.**

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	554222	554222	86	86
Heat	371188	371188	0	0
Steam	358121	358121	0	0
Cooling	0	0	0	0

**C8.2e****(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.****Sourcing method**

Purchase from an on-site installation owned by a third party

**Energy carrier**

Electricity

**Low-carbon technology type**

Solar

**Country/area of low-carbon energy consumption**

Singapore

**Tracking instrument used**

Contract

**Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)**

556

**Country/area of origin (generation) of the low-carbon energy or energy attribute**

Singapore

**Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)**

2021

**Comment**

PPA from onsite solar panel plant, owned and managed by third party. Actual power supply started second half of calendar year 2021.

**C8.2g****(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.****Country/area**

Taiwan, China

**Consumption of electricity (MWh)**

2957189

**Consumption of heat, steam, and cooling (MWh)**

1696315

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

4653504

**Is this consumption excluded from your RE100 commitment?**

<Not Applicable>

---

**Country/area**

Singapore

**Consumption of electricity (MWh)**

2345289

**Consumption of heat, steam, and cooling (MWh)**

133328

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

2478617

**Is this consumption excluded from your RE100 commitment?**

<Not Applicable>

---

**Country/area**

United States of America

**Consumption of electricity (MWh)**

1201774

**Consumption of heat, steam, and cooling (MWh)**

262150

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

1463924

**Is this consumption excluded from your RE100 commitment?**

<Not Applicable>

---

**Country/area**

Japan

**Consumption of electricity (MWh)**

1404431

**Consumption of heat, steam, and cooling (MWh)**

194289

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

1598720

**Is this consumption excluded from your RE100 commitment?**

<Not Applicable>

---

**Country/area**

Malaysia

**Consumption of electricity (MWh)**

157018

**Consumption of heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

157018

**Is this consumption excluded from your RE100 commitment?**

<Not Applicable>

---

**Country/area**

China

**Consumption of electricity (MWh)**

273231

**Consumption of heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

273231

**Is this consumption excluded from your RE100 commitment?**

<Not Applicable>

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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.

C10. Verification

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C10.1

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(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	No third-party verification or assurance

C10.1a

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(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**

Limited assurance

**Attach the statement**

Micron Sustainability Report 3rd party assurance statement for CY21 data.pdf

**Page/ section reference**

1,2,5,6

**Relevant standard**

ISAE3000

**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 market-based

**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**

Micron Sustainability Report 3rd party assurance statement for CY21 data.pdf

**Page/ section reference**

1,2,5,6

**Relevant standard**

ISAE3000

**Proportion of reported emissions verified (%)**

100

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## 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
C4. Targets and performance	Year on year emissions intensity figure	ISAE 3000	Limited assurance was conducted on Micron's 2021 emissions intensity and 2018 baseline emissions intensity
C8. Energy	Energy consumption	ISAE 3000	Limited assurance was conducted on Micron's 2021 total energy consumed, percentage grid electricity, and percentage renewable.

Micron Sustainability Report 3rd party assurance statement for CY21 data.pdf

## 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)?

Yes

### C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

Singapore carbon tax

### C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

#### Singapore carbon tax

**Period start date**

January 1 2021

**Period end date**

December 31 2021

**% of total Scope 1 emissions covered by tax**

80

**Total cost of tax paid**

6000000

**Comment**

Singapore Carbon Tax applies to Micron manufacturing sites and first year of application was calendar year 2019. Sites shall report emissions by June every year. In calendar year 2021, 80% of reported Singapore scope 1 emissions to NEA are covered by the carbon tax. Tax amount will be confirmed by the National Environmental Agency after the review and approval of the emission report. Total cost reported above is estimated based upon Carbon Pricing at SGD \$5/ tCO<sub>2</sub>e. Total cost of tax applicable will be paid by September 2022 in Singapore dollars. Amount reported above in USD estimated based on average exchange rate in 2022

### C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Affected Micron sites started an assessment since the proposed rule was issued and evaluated cost impact and possible reduction solutions.

There is a dedicated multi-disciplinary team working on identifying opportunities to reduce emissions (and thus GHG emissions taxes) and establish the execution plan by prioritizing actions that have the most significant impact. Micron has been working on optimizing the use of process gases and install additional dedicated abatement units in our manufacturing sites in Singapore in 2021. This investment will help with reducing process emissions covered by the carbon tax.

## C11.2

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**(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?**

No

## C11.3

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**(C11.3) Does your organization use an internal price on carbon?**

No, and we do not currently anticipate doing so in the next two years

## C12. Engagement

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### C12.1

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**(C12.1) Do you engage with your value chain on climate-related issues?**

Yes, our suppliers

Yes, our customers/clients

### C12.1a

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**(C12.1a) Provide details of your climate-related supplier engagement strategy.**

**Type of engagement**

Information collection (understanding supplier behavior)

**Details of engagement**

Collect climate change and carbon information at least annually from suppliers

**% of suppliers by number**

2

**% total procurement spend (direct and indirect)**

65

**% of supplier-related Scope 3 emissions as reported in C6.5**

83

**Rationale for the coverage of your engagement**

Micron began piloting information collection from suppliers in early 2020, and joined CDP's supply chain program in early 2021. We chose large, strategic suppliers that have the potential for significant greenhouse gas emissions that may contribute to Micron's upstream Scope 3 emissions. CDP conducted outreach to suppliers and shared completed questionnaires with Micron. Micron reviewed responses and engaged with suppliers based on completeness and accuracy of response. We used data collected to calculate category 1 and 2 of Scope 3 for Calendar Year 2021. We have expanded the number of suppliers included in the Supply Chain program 2022 compared to last year and expect to see improved data quality and completeness. % of supplier-related scope 3 emissions accounts for purchased goods and services, capital goods and upstream transportation and distribution

**Impact of engagement, including measures of success**

Measures of success include total number and percent of suppliers engaged, response rate, and number that improve their performance because of Micron's engagement. Total number of suppliers engaged through CDP's supply chain program in 2021 was 67, with response rate of 79%.

**Comment**

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**Type of engagement**

Innovation & collaboration (changing markets)

**Details of engagement**

Run a campaign to encourage innovation to reduce climate impacts on products and services

**% of suppliers by number**

**% total procurement spend (direct and indirect)**

**% of supplier-related Scope 3 emissions as reported in C6.5**

**Rationale for the coverage of your engagement**

This engagement covers our largest suppliers of capital equipment, whose products play a key role in Micron's greenhouse gas emissions and energy use. Projects and progress have been reviewed during annual supplier business review and responses are scored on their products' support of Micron's aspirational environmental goals, including greenhouse gas emissions and energy efficiency goals. Micron use this score as a component of the sustainability portion of scorecards provided regularly to suppliers.

**Impact of engagement, including measures of success**

Measures of success include projects progress and completion, and calculated reductions in greenhouse gas emissions and energy use based on these engagements. We have measured reductions in GHG emissions based on these engagements.

**Comment**

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## C12.1b

### (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 education customers about your climate change performance and strategy
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#### % of customers by number

90

#### % of customer - related Scope 3 emissions as reported in C6.5

#### Please explain the rationale for selecting this group of customers and scope of engagement

We routinely share information with our customers about Micron's products and performance including climate and sustainability performance, and meet with key customers to discuss this information and understand how we are performing from their perspective. Cross-functional teams review the outcomes of those conversations, as well as written customer requirement documents, and assess opportunities for improvement. A monthly meeting of executives and senior leaders drives accountability for the improvements we undertake in response to key customer expectations and requirements. We also engage in several industry organizations (such as SEMI, Responsible Business Alliance, the Semiconductor Industry Association, Clean Energy Buyers Association, and others) alongside our customers, building consensus across a range of social and environmental issues specific to our industry, including on climate-related matters. Additionally, our System Power Calculator is an online tool available to our customers to help them estimate memory power requirements when making important system and architecture and design decisions. This information helps our customers make choices that can influence the overall energy footprint of the end devices our products enable. The % of customer-related scope 3 is not applicable - emissions from the use of our products in the final applications is not relevant (refer to 6.5 for explanation)

#### Impact of engagement, including measures of success

Measures of success include percentage of customers engaged (estimated at 90%, as noted above), and percentage of low-power products in Micron's sales mix. We recognize that the energy demand of our products contributes to the global environmental impact of technology. This is why we partner with our customers to deliver memory solutions that meet tightening requirements and expectations for energy efficiency.

## C12.2

### (C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

No, but we plan to introduce climate-related requirements within the next two years

## 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

#### Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage indirectly through trade associations

#### 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, and we do not 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 engagement activities are consistent with your 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

**(C12.3b) Provide details of the trade associations your organization 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 (Clean Energy Buyers Association (CEBA))

**Is your organization's position on climate change consistent with theirs?**

Consistent

**Has your organization influenced, or is your organization attempting to influence their position?**

We publicly promote their current position

**State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

In early 2021, CEBA called on the federal government to transition to zero-carbon energy, in a statement signed by Micron. See <https://www.businesswire.com/news/home/20210125005130/en/America%E2%80%99s-Largest-Energy-Buyers-Call-on-Federal-Government-to-Transition-to-Zero-Carbon-Energy>

**Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)**

**Describe the aim of your organization's funding**

<Not Applicable>

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

**C12.4**

**(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 voluntary sustainability report

**Status**

Complete

**Attach the document**

FINAL Sustainability Report\_20220705.pdf

**Page/Section reference**

Pages 8-10, 20, 23-27

**Content elements**

Governance  
Strategy  
Risks & opportunities  
Emissions figures  
Emission targets

**Comment**

**Publication**

In mainstream reports

**Status**

Complete

**Attach the document**

Micron\_2021\_Form\_10-K.pdf

**Page/Section reference**

Page #s 13 (16 of the PDF), 14 (17 of the PDF), 22 (25 of the PDF), 25 (28 of the PDF), 33 (36 of the PDF),

**Content elements**

Risks & opportunities

**Comment**

**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	Please select	<Not Applicable>	<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	Please select	<Not Applicable>	<Not Applicable>

## C15.3

**(C15.3) Does your organization assess the impact of its value chain on biodiversity?**

	Does your organization assess the impact of its value chain on biodiversity?	Portfolio
Row 1	Please select	<Not Applicable>

## C15.4

**(C15.4) 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	Please select	<Not Applicable>

## C15.5

**(C15.5) 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	Please select	Please select

## C15.6

**(C15.6) 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
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## 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.**

## 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	Director of Sustainability	Environment/Sustainability manager