Welcome to your CDP Climate Change Questionnaire 2020

C0. Introduction

C0.1

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

At Microsoft, our mission is to empower every person and every organization on the planet to achieve more. We enable digital transformation for the era of an intelligent cloud and an intelligent edge. We strive to create local opportunity, growth, and impact in communities around the globe, and we’re working to ensure that our technology is creating an inclusive, trusted, and more sustainable world.

Climate change is a serious challenge that requires a comprehensive and global response from all sectors of society. We have a longstanding commitment to sustainability and work to drive change at a global scale through our operations, our technology, policy advocacy, and our customers and partners using this technology around the world. We are committed to measuring, reporting, and reducing the carbon footprint of our own operations, supply chain, and products and services as well as increasing the percentage of renewable energy that we purchase. We strive to minimize our environmental impact, reduce waste, and conserve water and other raw materials. In pursuing these goals, we have policies in place to help our company be compliant with applicable environmental regulations and the specific environmental requirements of each country and region where we do business. We’re also helping empower our customers and partners with new technology to help them meet their sustainability goals by driving efficiencies, transforming their businesses, and developing their own solutions. Microsoft is committed to harnessing the power of technology to help everyone, everywhere build a more sustainable future.

C0.2

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

<table>
<thead>
<tr>
<th></th>
<th>Start date</th>
<th>End date</th>
<th>Indicate if you are providing emissions data for past reporting years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting year</td>
<td>July 1, 2018</td>
<td>June 30, 2019</td>
<td>No</td>
</tr>
</tbody>
</table>
C0.3
(C0.3) Select the countries/areas for which you will be supplying data.

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

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

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.
The charter for the Regulatory and Public Policy Committee of our Board of Directors includes the responsibility to “review and provide guidance to the board and management about the company’s policies and programs that relate to corporate social responsibility, including human rights, environmental sustainability, responsible sourcing, and philanthropy.” Climate change is included under the umbrella of “environmental sustainability,” and therefore this Committee is responsible for reviewing and providing guidance on the company’s climate-related policies and programs. Each year, our President and Chief Legal Officer (CLO), together with our Chief Environmental Officer, presents to this Committee on these topics, including climate change, as appropriate. This includes an update and agreement on decisions related to our environmental sustainability strategy (including an increase of our internal carbon fee to $15 per metric ton) and decisions around programmatic investments (including the decision to fund our AI for Earth program, which enables organizations to develop artificial intelligence [AI] computing resources that help people, organizations, and governments anticipate, predict, and manage climate change impacts). The membership of the Committee consists of at least two directors of the board and currently includes five directors.

### C1.1b

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

<table>
<thead>
<tr>
<th>Frequency with which climate-related issues are a scheduled agenda item</th>
<th>Governance mechanisms into which climate-related issues are integrated</th>
<th>Please explain</th>
</tr>
</thead>
</table>
| Scheduled – some meetings | Reviewing and guiding strategy  
Reviewing and guiding major plans of action | The Regulatory and Public Policy Committee meets three times a year with a varied agenda covering a breadth of corporate social responsibility (CSR) issues including updates on the company’s commitments to environmental sustainability, climate, and renewable energy procurement. During at least one meeting each year and on an as-needed basis, our President and Chief Legal Officer (CLO) and our Chief Environmental Officer present to this Committee on our overall sustainability agenda, including the work that we’re doing to combat climate change, and solicit high-level input on new and emerging initiatives. In FY19 (the reporting period), the... |
Committee received a briefing from our Chief Environmental Officer about Microsoft's progress in environmental sustainability, including our AI for Earth program.

**C1.2**

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

<table>
<thead>
<tr>
<th>Name of the position(s) and/or committee(s)</th>
<th>Responsibility</th>
<th>Frequency of reporting to the board on climate-related issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>Annually</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>Annually</td>
</tr>
<tr>
<td>Vice President, Technology and Corporate Responsibility</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>Annually</td>
</tr>
<tr>
<td>Other C-Suite Officer, please specify</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>Annually</td>
</tr>
<tr>
<td>Chief Environmental Officer</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>Annually</td>
</tr>
<tr>
<td>Environment/ Sustainability manager</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>Annually</td>
</tr>
</tbody>
</table>

**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).

At Microsoft, we work to conduct our business in ways that are principled, transparent, and accountable, which generates long-term value. We focus our efforts where we can have the most positive impact on our business and society, including issues related to environmental sustainability. As a reflection of the importance of these matters, we assign accountability for oversight of corporate social responsibility to the Regulatory and Public Policy Committee of the Microsoft Board of Directors, which works with management to review our policies, programs, and performance.
The President and Chief Legal Officer (CLO) is responsible for our Corporate, External, and Legal Affairs (CELA) group. The CELA group is the legal, public policy, and social responsibility arm of the company, focused on building and maintaining trust with customers, investors, and stakeholders that Microsoft operates responsibly including in, but not limited to, the areas of environmental sustainability and climate change. The President and CLO presents to the Regulatory and Public Policy Committee of the Board on the company’s policies and programs that relate to corporate social responsibility, including environmental sustainability and climate change as appropriate. In FY19 (July 1, 2018–June 30, 2019; the reporting period), the President and CLO monitored climate-related issues and the company’s progress toward climate objectives through regular business reviews and in more frequent individual meetings as appropriate.

Our Technology and Corporate Responsibility group, part of the CELA group, is accountable for Microsoft corporate social responsibility, including environmental sustainability. In FY19, the Vice President for Technology and Corporate Responsibility had executive-level oversight of the Chief Environmental Officer role and corporate Environmental Sustainability team, including the company’s climate change actions. Our Chief Environmental Officer led our corporate Environmental Sustainability team, leading our overall environmental sustainability vision, strategy, and program execution. Our Carbon Program Manager, part of the Environmental Sustainability team, led Microsoft's carbon mitigation efforts, which include energy efficiency, renewable energy, carbon offsetting, identification of additional energy and carbon reduction opportunities, and assessment and management of climate risks. (Note: In FY20, Microsoft established a Climate Council, comprising a number of executives from across the company charged with monitoring climate-related risks and opportunities and coordinating and providing oversight for sustainability initiatives across the organization.)

The charter of the corporate Environmental Sustainability team includes assessment and management of issues related to climate change. By focusing on operations, products, partners, and policy, the team strives to reduce our company’s environmental impact while empowering societal change through technology. The Environmental Sustainability team assesses progress on our environmental sustainability programs and supports our overall environmental sustainability goals, including our commitment to operate carbon neutral from fiscal year 2013 (FY13, which started July 1, 2012) and our commitment to be carbon negative by 2030. It also brings leaders from across the corporation together to identify risks and opportunities and align on management measures, including energy efficiency, renewable energy procurement, and water stewardship. For guidance on globally changing dynamics, this team engages with experts around the world, including internal finance, regulatory/policy, technology, and environmental professionals, as well as external subject matter experts. Where applicable, it transitions identified risks and opportunities to local operating units for further evaluation and mitigation. The Environmental Sustainability team participates in the Microsoft Enterprise Risk Management (ERM) program, which identifies, assesses, and prioritizes risks and, through regular reporting and discussion, assists senior management and the Board with governance of risk. The Environmental Sustainability team solicits input from subject matter experts across the company to support this reporting.
C1.3

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

<table>
<thead>
<tr>
<th>Provide incentives for the management of climate-related issues</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1 Yes</td>
<td></td>
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</tbody>
</table>

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).

<table>
<thead>
<tr>
<th>Entitled to incentive</th>
<th>Type of incentive</th>
<th>Activity incentivized</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other C-Suite Officer</td>
<td>Monetary reward</td>
<td>Emissions reduction target</td>
<td>Annual commitments—The Chief Environmental Officer role had accountability for our target to be carbon neutral for FY19, the reporting period for this response. This role’s annual bonus and performance ratings are directly connected with performance against these commitments as part of the annual review process.</td>
</tr>
<tr>
<td>Environment/Sustainability manager</td>
<td>Monetary reward</td>
<td>Emissions reduction target</td>
<td>Annual commitments—The LinkedIn Environmental Sustainability Program and Project Manager roles have commitments related to reporting energy use and carbon emissions, driving energy efficiency, procuring more renewable energy, and achieving carbon neutrality. Their performance against these commitments and other sustainability initiatives is evaluated annually, with compensation decisions made accordingly.</td>
</tr>
<tr>
<td>Business unit manager</td>
<td>Monetary reward</td>
<td>Other (please specify) Renewable energy target</td>
<td>Annual commitments—The Cloud Operations + Innovation (CO+I) organization, which in FY19 was responsible for the datacenters that support our cloud computing services, has set renewable energy targets. The General Manager of Energy and Sustainability, Director of Datacenter Environmental Sustainability, and Director of Renewable Energy for CO+I have specific commitments that are tied to meeting renewable energy targets.</td>
</tr>
<tr>
<td>Role</td>
<td>Reward Type</td>
<td>Reward Area</td>
<td>Commitment Details</td>
</tr>
<tr>
<td>-------------------------------</td>
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</tr>
<tr>
<td>Business unit manager</td>
<td>Monetary</td>
<td>Supply chain engagement</td>
<td>Annual commitments—The Cloud Supply Chain Sustainability (CSCS) team (part of the Azure Hardware Systems and Infrastructure [AHSI] group) was created in FY19 to proactively engage with the cloud infrastructure supply chain throughout the complete lifecycle. The objective of CSCS is to reduce the environmental footprint of the electronic equipment used to support our cloud, which includes greenhouse gas emissions. The CSCS team is responsible for the creation of a framework for standardized sustainability metrics from the Microsoft supply chain with third-party validated data inputs and outputs. Annual compensation decisions relate to performance against key results against these objectives as part of the annual review process.</td>
</tr>
<tr>
<td>Facilities manager</td>
<td>Monetary</td>
<td>Energy reduction project</td>
<td>Energy conservation measures—Within our Real Estate &amp; Security (RE&amp;S) group, our facility managers are encouraged to submit ideas for energy conservation measures (ECMs). Their ideas are vetted by engineering and implemented if viable. For implemented projects, facility managers receive a portion of the realized savings as well as team recognition.</td>
</tr>
<tr>
<td>Procurement manager</td>
<td>Monetary</td>
<td>Supply chain engagement</td>
<td>Annual commitments—Within Microsoft Procurement, the Responsible Sourcing team has commitments connected with the percentage of Microsoft indirect supplier spend with suppliers that disclose emissions and set targets through the CDP Supply Chain program. Annual compensation is connected to performance against these commitments as part of the annual review process.</td>
</tr>
<tr>
<td>All employees</td>
<td>Monetary</td>
<td>Efficiency project</td>
<td>Sustainability Grants program—In FY19, individuals in our business groups and local operating units who identified opportunities for emissions or energy reduction projects could apply for funding for those projects through our Sustainability Grants program. In FY19, the Sustainability Grants program awarded more than $10 million to projects or programs with a focus on better managing climate-related business activity.</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>Monetary</td>
<td>Emissions reduction target</td>
<td>Carbon fee—The corporate-wide carbon fee provides a financial incentive for Microsoft business groups to reduce carbon by placing a price on operational carbon emissions,</td>
</tr>
<tr>
<td>Business groups</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
which business groups seek to avoid by reducing their footprints. (The funds collected through the fee are used to attain our carbon neutral target.)

| All employees | Non-monetary reward | Other (please specify) Technology for environmental challenges | Hackathon—Each year, employees have the opportunity to participate in the Microsoft Hackathon, a companywide, multiday, multilocation event that brings employees and interns from all over the organization together to create, innovate, and hack on ideas that inspire them. The Hackathon includes a sponsored executive challenge to “demonstrate new ways for technology to help solve the world’s greatest societal and environmental problems” (Microsoft Hack for Sustainability). The first-place project receives recognition from the sponsoring executive. In FY19, one Hackathon team worked on a project called Democratizing Sustainability (in partnership with CDP) to determine the feasibility of empowering Microsoft employees to make more sustainable product and services choices using climate data. The project placed third in the 2019 Microsoft Hack for Sustainability challenge; the proof of concept was confirmed as feasible and is being reviewed by Microsoft Procurement for consideration. |
| Other, please specify All LinkedIn employees | Non-monetary reward | Other (please specify) Employee engagement | LinkedIn provides incentives in the form of raffle prizes for employees that participate in climate-related events, such as competitions and field trips. |

**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?
Microsoft defines substantive financial or strategic impact from climate-related risks as follows: an impact that significantly affects our business strategy or our ability to deliver continuous customer services.

Subject matter leadership on climate change risk resides with our Environmental Sustainability team, led by our Chief Environmental Officer. This team assesses Microsoft’s climate-related physical and transition risks and opportunities across the business portfolio using quantitative and qualitative scenario analyses (including an assessment of climate-related physical risks conducted in FY17 and an assessment of climate-related physical and transition risks and opportunities initiated in FY19, the reporting period), along with other risk assessments (including the use of internal company methods). The results from these analyses are assessed and validated through consultation with subject matter experts across the company and then used to inform Microsoft’s formal, robust, and rigorous enterprise risk assessment process led by the Enterprise Risk Management (ERM) program. The ERM program’s formal risk assessment process is used to assess the size, scope, financial impact, and relative significance of any risk that Microsoft may face, today and into the future, including those related to climate change. The process involves categorizing risks according to their inherent impact on a scale of 1 (minimal) to 5 (critical) in four categories: trust or reputational; operational scope; legal, compliance or environmental; and enterprise value. Risks are then rated according to their inherent likelihood on a scale of 1 (remote) to 5 (expected). These two ratings are used to produce an inherent risk score and are then aggregated with a management action/control effectiveness rating for a residual risk calculation. For climate stability, the amount of change that indicates a substantive impact depends on the most relevant inherent impact category with a probability
over 35 percent that would likely occur and either create a significant loss of trust with customers, partners, members, or shareholders; have a significant impact on business operations within one or more business units or geographies; prohibit the company from conducting business in certain product lines or markets; or cause a significant reduction in market capitalization.

C2.2

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

Value chain stage(s) covered
- Direct operations
- Upstream
- Downstream

Risk management process
- Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
- More than once a year

Time horizon(s) covered
- Short-term
- Medium-term
- Long-term

Description of process
IDENTIFYING/ASSESSING

At a company level, the corporate Environmental Sustainability (ES) team brings leaders from across the business together to identify which short-, medium- and long-term climate risks and opportunities could have substantive financial or strategic impact on the organization. This team engages on an ongoing basis with experts including internal finance, regulatory/policy, technology and environmental professionals, as well as external subject matter experts. Where applicable, it transfers identified risks and opportunities to subsidiaries for further evaluation. This
is complemented by formal identification and assessment processes:

1) In FY19, we initiated quantitative and qualitative physical (medium-term) and transition (long-term) risk and opportunity assessments for key Microsoft regions. In addition, we are assessing our alignment with the Task Force on Climate-related Financial Disclosures (TCFD) to ensure we are properly managing these risks and opportunities within our business and adequately planning for the future.

2) The ES team works with subject matter experts from across the company (including datacenter, real estate and facility, devices, and supplier teams) to identify climate risks and opportunities.

3) Microsoft Treasury assesses property risks (short term) annually to value the global property insurance program using industry-standard risk models to estimate the probable impact from hazards like hurricanes, floods and fires, each of which may be subject to increasing frequency and severity due to climate change. This annual assessment also includes supplier mapping (to assess our exposure to supply chain disruptions) and subjective assessment of political risks, which may be amplified by stresses on populations arising from climate change.

4) The Microsoft Enterprise Business Continuity Management (EBCM) program’s Business Continuity Standard and Service Resilience Standard identify the baseline requirements for implementing business continuity disaster recovery and overall resilience at Microsoft to help ensure our capability of recovery and preparedness in the event of a major or catastrophic business disruption that affects our ability to meet customer expectations.

The results of our company-level risk assessments inform an executive review process led by the Microsoft Enterprise Risk Management (ERM) program, which identifies, assesses and prioritizes the criticality of any potential risks to Microsoft’s core business functions and operations (climate-related physical and transition risks included) and, through regular reporting and discussion, assists senior management and the Board with governance of risk. This process determines whether any of the identified risks have the potential for substantive financial, strategic, operational or legal impact on the company.

At an asset level, business groups within our operating segments have their own processes. For example, within our Intelligent Cloud segment, Cloud Operations + Innovation (CO+I), responsible for Microsoft datacenters, has a defined process for identifying and assessing risk in the design and siting of new datacenters and during ongoing operations, including availability of water and renewable energy. Azure Hardware Systems & Infrastructure (AHSI), responsible for our cloud infrastructure supply chain, identifies and manages risk related to the emissions impact of the design, sourcing, manufacturing, transportation, use and end-of-life choices for cloud infrastructure materials and chemicals by monitoring supplier metrics against compliance standards and reduction targets through its Cloud Supply Chain Sustainability (CSCS) team. Within our More Personal Computing segment, Experiences + Devices Group (E+D) has an Environmental, Compliance, and Sustainability team that evaluates risks and opportunities pursuant to the ISO 14001 framework in the context of energy efficiency and other regulatory and voluntary environmental requirements at the global, regional, national and local level for existing and planned Microsoft-branded hardware and
related devices and packaging supply chain operations. Subsidiaries manage their processes based on regional and geographical factors that affect them individually (such as local regulations).

RESPONDING
The ES team brings leaders from across the company together to align on management decisions to mitigate, transfer, accept or control the identified climate-related risks and opportunities.

To make decisions on risk, we use our ERM risk prioritization criteria in the context of business continuity and service resilience, which include the scope of impact (e.g. reputational, regulatory and cost), potential return on investment, and time and resources required to implement changes. An example of a physical risk managed through this process is the risk of facility damage from an acute weather event, such as flooding. To mitigate this risk, our EBCM program uses its relevant standards to help ensure the existence of effective, reliable, well-tested plans, systems and processes during such a disruptive event to support the continuity and resilience of business operations and services and minimize adverse impacts. The EBCM program works with the ERM group to ensure consistent alignment among risks and risk prioritization criteria and, ultimately, the final risk ratings. (Note that this risk is not substantive; e.g. in the case of datacenters, central to Microsoft cloud services design is geographic redundancy, which reduces our vulnerability to climate change and offers customers a climate-resilient alternative to on-premises datacenters.) (To help prepare employees in the event of an emergency, Microsoft maintains an Employee Preparedness portal with resources including a global crisis management response team, local office/site updates, regional advisories and educational awareness resources.)

One method we use to respond to climate-related opportunities is our Sustainability Grants program, which drives climate-related energy and technology innovation; this program awarded more than $10 million in FY19 to projects or programs focused on better managing climate-related business activity. An example of a transition opportunity managed through this process is the opportunity to enhance our reputation and resilience by using renewable energy to reduce the carbon footprint of our datacenters. We believe that buying more clean energy, especially near our operations, helps us operate more sustainably and makes good business sense. Our environmental leadership (including in energy investments) helps improve our reputation and makes it more likely for companies that prioritize environmental criteria to invest in our products/services. In FY19, we committed to powering our datacenters with 70 percent wind, solar or hydropower energy by 2023, and in FY20, we extended that commitment companywide and to 100 percent by 2025.
(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

<table>
<thead>
<tr>
<th>Relevance &amp; inclusion</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current regulation</td>
<td>Relevant, always included</td>
</tr>
<tr>
<td></td>
<td>Current regulations are deemed relevant and included in our risk assessment because any regulation that imposes restrictions on our operations or how we manufacture our devices has the potential to affect our business. In FY19, our corporate Environmental Sustainability (ES) governance model included company experts in policy, energy, water, regulation, technology, law, marketing/branding, and value chain. Expert groups meet monthly to discuss the latest environmental issues and review business implications. The Microsoft Enterprise Risk Management (ERM) group uses the results of risk assessments performed by the corporate ES team to inform its own program; the ERM group identifies, assesses, and prioritizes risks and, through regular reporting and discussion, assists senior management and the Board with governance of risk. The ES team solicits input from subject matter experts across the company to support this reporting. The impact of current regulations is considered through both mechanisms. One example considered in the company’s risk assessments is the risk of increased device energy efficiency regulations in the European Union (EU) and the United States. Our Corporate, External, and Legal Affairs (CELA) group has federal and regional policy experts that monitor upcoming regulations and engage directly with policymakers to understand the likelihood and impacts of new energy efficiency policies. We have been proactive in addressing this risk through our participation in voluntary best-in-class energy efficiency programs including ENERGY STAR and the EU Games Console Self-Regulatory Initiative. We also participate in voluntary eco-labeling programs such as EPEAT for our Surface devices, demonstrating commitment to energy efficiency and other aspects that reduce the product carbon footprint.</td>
</tr>
<tr>
<td>Emerging regulation</td>
<td>Relevant, always included</td>
</tr>
<tr>
<td></td>
<td>Although emerging regulations are uncertain and will likely vary across the geographies in which we operate and do business, they are also deemed relevant and included in our risk assessment because any regulation that increases business costs or imposes restrictions on how we design, operate, construct, or manufacture our datacenters, devices, or technology could affect our business. In FY19, our corporate ES governance model included company experts in policy, energy, water, regulation, technology, law, marketing/branding, and value chain. Expert groups meet monthly to discuss the latest environmental issues and review business implications. Our ERM group uses the results of risk assessments performed by the corporate ES team to inform its own program; the ERM group identifies, assesses, and prioritizes risks...</td>
</tr>
</tbody>
</table>
and, through regular reporting and discussion, assists senior management and the Board with governance of risk. The ES team solicits input from subject matter experts across the company to support this reporting. The potential future impact of emerging regulations is considered through both mechanisms. Examples considered during our risk assessments are the risks of datacenter energy rules in various markets and carbon tax proposals around the world. Our Director of Sustainability Policy monitors upcoming regulations in the US and engages directly with US policymakers to understand the likelihood and impacts of new regulations and programs such as energy rules and carbon tax policies; this role also monitors upcoming regulations in geographies where Microsoft has a material footprint and coordinates with local government affairs teams to engage on these issues. We have been proactive in addressing emerging regulatory risk related to climate change since 2012 when we achieved carbon neutrality. We are also continuing to invest in the infrastructure efficiency of our datacenters, applying our learning in deployed and new datacenter designs. These designs take advantage of artificial intelligence and machine learning and will result in further improvements over time. In addition, since 2012 we have operated a carbon-neutral cloud—our datacenter emissions are matched with the direct purchase of renewable energy or in-region energy attribute certificates. In FY19, we committed to powering our datacenters with 70 percent wind, solar, or hydropower energy by 2023, and in FY20, we extended that commitment companywide and to 100 percent by 2025.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Relevant, always included</th>
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</thead>
<tbody>
<tr>
<td>As a technology company, technology risk is deemed directly relevant to our work, and we are continually assessing technology risks and opportunities. In FY19, our corporate ES governance model included company experts in policy, energy, water, regulation, technology, law, marketing/branding, and value chain. Expert groups meet monthly to discuss the latest environmental issues and review business implications. Our ERM group uses the results of risk assessments performed by the corporate ES team to inform its own program; the ERM group identifies, assesses, and prioritizes risks and, through regular reporting and discussion, assists senior management and the Board with governance of risk. The ES team solicits input from subject matter experts across the company to support this reporting. Technology risks are considered through both mechanisms. One example considered during our risk assessments is the environmental performance of Microsoft technologies and services (for example, energy efficiency of devices and cloud infrastructure) in comparison with those of our main competitors. Our Cloud Supply Chain Sustainability (CSCS) team, within the Azure Hardware Systems and Infrastructure (AHSI) group, has introduced policies encompassing effective environmental governance and data security for every product in our cloud infrastructure across each lifecycle stage.</td>
<td></td>
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</table>
### Legal

| Relevant, always included | Legal risks are deemed relevant and always included in our risk assessments because, as governments increase their expectations of corporate climate performance, we risk facing substantial costs for noncompliance as well as potential reputational impacts if we do not constantly update our practice to align with the most current regulatory environment. In FY19, our corporate ES governance model included company experts in policy, energy, water, regulation, technology, law, marketing/branding, and value chain. Expert groups meet monthly to discuss the latest environmental issues and review business implications. Our ERM group uses the results of risk assessments performed by the corporate ES team to inform its own program; the ERM group identifies, assesses, and prioritizes risks and, through regular reporting and discussion, assists senior management and the Board with governance of risk. The ES team solicits input from subject matter experts across the company to support this reporting. Legal risks are considered through both mechanisms. One specific example considered during our risk assessments is whether the company is exposing itself to the risk of litigation for misrepresenting the environmental attributes of our products or services; our product groups, marketing teams, legal teams, and corporate ES team work together rigorously to assess this risk and help ensure that our product information and communications are accurate and transparent. |

### Market

| Relevant, always included | Market impacts are directly relevant to Microsoft and always included in our risk assessments because, whether in response to environmental commitments, regulatory requirements, rising energy costs, or reputational risk, businesses are increasingly looking to reduce their carbon footprint, including IT and operational emissions. If our products/services do not quantifiably help customers reduce emissions, we could lose business to competitor products/services that do. For Microsoft, the risk (and opportunity) is to ensure our strategic direction aligns with shifting customer preferences in the transition to a low-carbon future. In FY19, our corporate ES governance model included company experts in policy, energy, water, regulation, technology, law, marketing/branding and value chain. Expert groups meet monthly to discuss the latest environmental issues and review business implications. Our ERM group uses the results of risk assessments performed by the corporate ES team to inform its own program; the ERM group identifies, assesses and prioritizes risks and, through regular reporting and discussion, assists senior management and the Board with governance of risk. The ES team solicits input from subject matter experts across the company to support this reporting. Market risks are considered through both mechanisms. One specific example considered during our risk assessments is the environmental performance of our technologies in comparison with those of our main competitors. We consider downstream impacts of our hardware devices by designing for longevity and to extend product lifespans. We participate in recycling programs for electronic products. In addition, our extensive investments in IT efficiency from chip-to-datacenter infrastructure, as well as renewable energy, help make our cloud services up to 93 percent more energy efficient and 98 percent more carbon efficient than traditional on- |
premises datacenters (as reported in our 2018 “The carbon benefits of cloud computing” paper). Another risk that we consider is loss of competitive edge related to recruitment and retention of talented employees who want to work for environmentally responsible companies. The ES team participates in the Worldwide Sustainability Community (internal employee affinity group) calls to understand and respond to employee sentiment on climate action; in FY20 we considered strong employee support for bold climate action when developing our goal to be carbon negative by 2030.

Reputation | Relevant, always included | Reputation amplifies all enterprise risks and is therefore directly relevant and included in our risk assessment. IT energy/water use is drawing increased attention for its impact on the environment and climate change. Consumers, businesses, and institutional investors are increasingly making investment decisions based on a company’s environmental responsibility. We are one of the largest technology companies in the world, and the perceived environmental impact of our products and services is heightened. If our approach is not seen to be as strong or stronger than our competitors, we could potentially lose business. In FY19, our corporate ES governance model included company experts in policy, energy, water, regulation, technology, law, marketing/branding and value chain. Expert groups meet monthly to discuss the latest environmental issues and review business implications. Our ERM group uses the results of risk assessments performed by the corporate ES team to inform its own program; the ERM group identifies, assesses, and prioritizes risks and, through regular reporting and discussion, assists senior management and the Board with governance of risk. The ES team solicits input from subject matter experts across the company to support this reporting. Reputational risk—related to our environmental impact/stewardship and our service reliability—is considered through both mechanisms. One specific example is the potential for damage to our reputation from any impact on the reliability of our cloud services. Microsoft has a reputation for reliable cloud services, increasingly powered by clean energy. A physical impact from climate change that compromised our reliability would be unacceptable to Microsoft and adversely affect services to our customers and our reputation. Therefore, we prioritize ongoing global business continuity, monitoring risks and implementing business continuity measures to help ensure continued reliability. Central to Microsoft cloud services design is geographic redundancy, which reduces our vulnerability to climate change. To assess this risk, our Enterprise Business Continuity Management program requires annual testing of Microsoft’s critical services and business processes; scenarios vary but can involve loss of facilities, loss of systems, loss of workforce, loss of critical third-party suppliers of goods/services, cybersecurity events or a combination of two or more of those scenarios.

Acute physical | Relevant, always included | Acute physical risks are deemed relevant and always included in our risk assessments because, as the acute physical impacts of climate change become more extreme, facilities in affected areas have the potential to be damaged. Depending on the extent of damage, this could lead to increased costs (e.g. to repair or relocate the facilities). For example, if one of
our cloud service datacenters were damaged sufficiently to prevent operations, this could potentially affect our ability to deliver continuous cloud services. This could lead to loss of revenue, both in the short term (failure to meet contractual commitments to customers) and long term (loss of customer confidence in our ability to deliver world-class cloud services). Climate change and extreme weather events have influenced our business decision making, particularly with engineering or other additional mitigations required, to minimize impact on service continuity at critical sites. We prioritize ongoing global business continuity, monitoring and assessing risks and implementing business continuity measures to help ensure continued reliability. To assess this risk, our Enterprise Business Continuity Management program requires annual testing of Microsoft critical services and business processes; scenarios vary but can involve loss of facilities, systems, workforce or critical third-party suppliers of goods/services, cybersecurity events, or a combination of two or more of those scenarios. Acute physical risks (including flooding, extreme weather, drought, sea level rise/storm surges) were included in our FY17 climate-related physical risk assessment, which we expanded to include key suppliers and LinkedIn facilities in FY18. Acute physical risks will affect not only Microsoft but also our suppliers. A disruption to our supply chain could incur significant costs for our business. Microsoft Treasury assesses property risks annually to value the global property insurance program. This assessment includes supplier mapping (to assess our exposure to supply chain disruptions); the risk models identify natural hazard risks for any locations of identified vendors that support Microsoft (to the extent possible given the fluid nature with which suppliers assign workloads to any of multiple available production locations) and then model their probabilities. Our procurement processes consider supplier risks and take appropriate measures to mitigate issues related to the supply of key services and products.

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<thead>
<tr>
<th>Chronic physical</th>
<th>Relevant, always included</th>
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Chronic physical risks are deemed relevant and always included in our risk assessments. Changes in precipitation patterns—including intense precipitation events that lead to flooding and extended or extreme drought—have the potential to directly affect the facilities we use to provide cloud services and develop technology. For example, facilities in flood-affected areas have the potential to experience damage. Depending on the cooling technology used, for some datacenters access to freshwater for cooling is vital for the continuous delivery of customer services—a risk during drought. Depending on the extent of flood damage or the severity of drought, this could lead to increased costs (e.g. to repair or relocate the facilities or source an alternative water supply). If one of our cloud services datacenters were damaged sufficiently to prevent operations or we could not source enough water to cool the facility so that it could run at capacity, this could affect our ability to deliver continuous cloud services. This could lead to a loss of revenue, both in the short term (failure to meet contractual commitments to customers) and long term (loss of customer confidence in our ability to deliver world-class cloud services). Therefore, we prioritize ongoing global business continuity, assessing and monitoring risks and implementing
business continuity measures to help ensure continued reliability. Climate change and extreme weather events have influenced our business decision making, particularly with engineering or other additional mitigations required, to minimize impact on service continuity at critical sites. Our Enterprise Business Continuity Management program requires annual testing of our critical services and business processes; scenarios vary but can involve loss of facilities, systems, workforce or critical third-party suppliers of goods/services, cybersecurity events, or a combination of two or more scenarios. We conducted energy, water and waste audits at three campuses (offices, labs) in water-stressed regions in FY18 and FY19; these uncovered recommendations to invest in water reduction/reuse initiatives, many of which were implemented or began implementation in FY19. Chronic physical risks (water shortages, average temperature changes, increased demand for energy, saltwater intrusion from sea level rise) were included in our FY17 climate-related physical risk assessment, which we expanded in FY18 to include key suppliers and LinkedIn facilities.

**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?

No

**C2.3b**

(C2.3b) Why do you not consider your organization to be exposed to climate-related risks with the potential to have a substantive financial or strategic impact on your business?

<table>
<thead>
<tr>
<th>Primary reason</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1 Risks exist, but none with potential to have a substantive financial or strategic impact on business</td>
<td>We conduct a range of risk assessments—including physical risk, property risk (including supplier mapping), and business continuity assessments—and consult on our risk exposure with internal experts. We have also initiated quantitative and qualitative physical and transition risk assessments for key Microsoft regions. Based on our findings, we believe that while Microsoft, like all global organizations, faces transition and physical climate risks, none has the potential for substantive financial or strategic impact (i.e. would alter our business strategy or affect our ability to deliver continuous customer services). Of identified transition risks—including increasing regulatory costs of GHG emissions, changing customer behavior and shifts in consumer preferences—our most significant</td>
</tr>
</tbody>
</table>
is reputational (the general perception that the IT sector increases demand for energy and water); however, we do not believe this poses undue risk to Microsoft at this time, given our existing business practices to be carbon neutral (and commitment to become carbon negative by 2030), purchase renewable electricity and steward water resources. Furthermore, part of our value proposition with our cloud services business is enabling agility and resilience. In fact, we view this dynamic as more of an opportunity (reputational benefits of sourcing clean energy and delivering low-emission products/services) than a risk. The physical risks that all global companies face—including increasing severity of extreme weather events such as cyclones and floods, changes in precipitation patterns, extreme variability in weather patterns and rising mean temperatures—are not substantive to our business. Central to Microsoft cloud services design is geographic redundancy, which not only reduces our own vulnerability but also offers our customers a climate-resilient alternative to on-premises datacenters. We continue to expand our assessments with new data sources and updated methodologies. The results of our assessments inform an executive review process led by our Enterprise Risk Management (ERM) program, which identifies, assesses and prioritizes risks and, through regular reporting and discussion, assists senior management and the Board with governance of risk. The ERM process involves categorizing risks according to their inherent impact and likelihood to produce an inherent risk score that is aggregated with a management action/control effectiveness rating for a residual risk calculation.

<table>
<thead>
<tr>
<th>C2.4</th>
<th>Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?</th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
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</table>

| 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
Other, please specify
    More efficient operations

Primary potential financial impact
Reduced indirect (operating) costs

Company-specific description
In January 2020, Microsoft committed to drive our scope 1 and scope 2 emissions to near-zero by the middle of this decade. Resource efficiency will help us achieve our goal in two ways: (1) Microsoft has a significant physical presence globally, with Microsoft-owned and leased facilities (including datacenters, offices, and labs) covering 52 million square feet in FY19 (the reporting period). The accompanying energy demands associated with operating these facilities, in particular for datacenters and development labs, are high. Any measures taken to improve the energy efficiency of our facilities will directly reduce our operating costs. (2) Microsoft also has a significant global vehicle fleet; most of our fleet vehicles are in countries where the provision of a company vehicle is an employee benefit or near our large campuses in Puget Sound and Hyderabad. Providing mobility solutions and using lower emissions vehicles are expected to reduce our operating costs and emissions over time.

Location of effect: Microsoft has operations and facilities throughout the world and thus this opportunity is global.

Time horizon
Medium-term

Likelihood
Virtually certain

**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)**

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

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

**Explanation of financial impact figure**

It is difficult to estimate the potential financial impact given the wide variety of activities that we will perform to achieve our building and vehicle fleet energy targets.

**Cost to realize opportunity**

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

Our strategy to develop and maintain more efficient and cost-effective operations includes a focus on (1) operational energy efficiency, such as by implementing new datacenter and office design projects, and (2) our global Real Estate & Security (RE&S) vehicle fleet, through electrification and mobility solutions.

(1) We are investing to design more efficient datacenters, such as with artificial intelligence and machine learning. We are committed to achieving LEED Gold certification for all new datacenters that we build. We are innovating with fuel cells to reduce carbon and other emissions; energy storage and distributed generation to help the grid balance renewables; and advanced cooling systems to reduce water
consumed/discharged and refrigerant emissions. We have committed that all datacenters we own will be zero-waste certified by 2022. In FY19, we also commenced a cloud circularity initiative focused on minimizing waste streams through increased reuse and repurposing of cloud infrastructure as it is retired from our datacenters. For our offices/labs, as of FY19, our Energy Smart Buildings program was active at our Puget Sound, Las Colinas, Beijing, Shanghai, Fargo, Charlotte, and Dublin campuses; this program helps identify and address equipment faults that compromise efficiency and has reduced energy costs. Our lab consolidation and energy conservation measures (ECM) programs continue to drive efficiency. We will also pursue International Living Future Institute Zero Carbon certification and LEED Platinum certification for our Silicon Valley Campus and Puget Sound Campus Modernization projects. For other office sites and campuses that are over 75,000 square feet and are undergoing a full scope development project, we will pursue LEED Gold ID+C certification. In FY19, LinkedIn used data insights to manage energy use; they also participated in the Tenant Management Energy program at the Empire State Building to drive further efficiency.

(2) We will electrify our global RE&S campus operations vehicle fleet by 2030. We are also working to provide mobility solutions such as subsidized transit and car sharing instead of company cars where possible.

It is difficult to estimate the cost to realize this opportunity given the wide variety of activities we are performing.

**Comment**

---

**Identifier**

Opp2

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

Direct operations

**Opportunity type**

Energy source

**Primary climate-related opportunity driver**

Use of lower-emission sources of energy
Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Microsoft believes that buying more clean energy, especially clean energy generated near our operations, helps us operate more sustainably and makes good business sense. We have ambitious goals to increase our use of clean energy over the next decade and now have projects in three continents—North America, Europe, and Asia—providing approximately 1.6 gigawatts of energy. We are also committed to driving change beyond our operations by creating new models and investing in new energy technologies that can bring the benefit of renewable energy to companies and communities of all sizes. For example, our investments in new renewable energy projects (such as our recent commitment to purchase 90 megawatts of wind power in Pennsylvania) enable other buyers to access cost-competitive renewable energy from those same projects. Furthermore, our work to develop a “volume firming agreement (VFA)” contract model helps mitigate the risks for corporate buyers of renewable energy associated with weather impacts on power production and pricing, thereby driving growth in the renewable energy industry. The business and societal value for our renewable energy investments are our primary drivers; however, reputation is another. The IT industry is drawing increased attention for its impact on the environment and climate change. Consumers, businesses, and institutional investors are increasingly making investment decisions based on how environmentally responsible companies are. This includes choices in energy procurement. Microsoft is one of the largest technology companies in the world, and so the impacts of our operations, products, and services on the environment garner heightened attention. Microsoft’s environmental leadership (including in our energy choices and investments) helps improve our reputation and makes it more likely for companies and consumers that prioritize environmental criteria to invest in our products and services.

Location of effect: Microsoft is a global corporation and so this opportunity is not restricted to a specific geography or region.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-high
Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)
0

Potential financial impact figure – maximum (currency)
3,800,000,000

Explanation of financial impact figure
It is difficult to quantify the potential financial implications. Theoretically if we were to win—for example—up to 3 percent additional business from our competitors because we were perceived to be better environmental stewards and to actively contribute to climate change mitigation by committing to using lower-emission sources of energy, the impact based on FY19 (the reporting period) revenue of $125.843 billion would have been an increase of up to $3.8 billion. Note that the likelihood rating of “very likely” applies to the opportunity itself and not the financial impact.

Cost to realize opportunity
34,300,000

Strategy to realize opportunity and explanation of cost calculation
Our strategy to expand our investment in renewable energy projects is to both increase the carbon fee that we charge each business division based on its carbon emissions to generate more funds to pay for sustainability improvements, including renewable energy procurement, and to set ambitious public commitments for our use of renewable energy. We have been committed to renewable energy since July 2012 when we introduced an internal carbon fee. We charge business groups a fee for emissions associated with energy consumption from their use of Microsoft datacenters, labs and offices; this fee is used in part to cover the costs to offset those emissions through renewable energy investments. In FY19 (the reporting period), we announced that we will raise our internal carbon fee to $15 per ton to more fully reflect the cost of carbon. Our renewable energy strategy includes the use of direct sourcing, power purchase agreements (PPAs), and energy attribute certificates (EACs). In FY19, we increased our purchase of renewable energy to 8,741,807 MWh (100 percent of electricity consumption). We also announced new agreements in FY19—with the Chelan County Public Utility District (PUD) (Washington), the Timber Road Wind project
(Ohio), the Wilkinson Solar project (North Carolina), the Big Level Wind project (Pennsylvania), and the Borssele Wind project (the Netherlands)—for more than 430 MW of direct renewable energy. In January 2020, we committed to have contracts in place for wind, solar and hydropower energy to power 100 percent of carbon-emitting electricity consumed by all our datacenters, buildings, and campuses by 2025. LinkedIn is also working towards 100 percent direct renewable energy. In FY19 we began receiving 100 percent carbon-free electricity from our long-term supply contract to power most of our Puget Sound operations via the Chelan PUD agreement.

The annual cost listed is our FY19 scope 1, 2 and 3 (business travel) emissions of 4,062,522 mtCO2e multiplied by our internal $8.44 carbon fee; these funds are used to pay for sustainability improvements. This does not include investments made by business groups in carbon reduction efforts that result in avoided fee payments.

**Comment**

---

**Identifier**

Opp3

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

Downstream

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Shift in consumer preferences

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

**Company-specific description**

---
As businesses become more conscious of the environmental impact of their computing and as regulations and taxes related to climate change lead to rising energy costs, our customers are becoming increasingly interested in improving the efficiency of their IT infrastructures and reducing their carbon footprint. For Microsoft, this opportunity is two-fold:

1. Deliver low-emission cloud services, which enable enterprises to directly reduce their own carbon emissions and take advantage of the higher efficiencies that large cloud service providers like Microsoft can achieve. (According to the 2018 “The carbon benefits of cloud computing” report by Microsoft, in partnership with WSP, Microsoft cloud services are up to 93 percent more energy efficient than traditional enterprise datacenters, depending on the services and deployment scenario.) In FY19 (the reporting period), our Azure Hardware Systems and Infrastructure (AHSI) group also began working to increase the circularity of our cloud infrastructure materials and reduce the related greenhouse gas emissions, which will contribute to further cloud service emission reductions.

2. Offer low-carbon devices and hardware to help customers reduce the emissions associated with their computing.

Location of effect: Microsoft customers are global. We believe this opportunity is greatest with customers in regions where environmental criteria are more strongly weighted in purchasing decisions (such as Europe), where government regulations impose a financial incentive to reduce emissions (such as through carbon taxes or emission trading schemes, such as in California or the European Union), and in regions with reliable, high-speed access to the Internet (such as the United States and Europe).

<table>
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<tr>
<th>Time horizon</th>
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<tr>
<td>Long-term</td>
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<tr>
<th>Likelihood</th>
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<td>Very likely</td>
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<table>
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<tr>
<th>Magnitude of impact</th>
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<tbody>
<tr>
<td>Medium-high</td>
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Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
Potential financial impact figure – minimum (currency)
0

Potential financial impact figure – maximum (currency)
3,800,000,000

Explanation of financial impact figure
We believe that a service provider’s commitment to minimizing its impact on the environment will be among the criteria that customers use when they select new products and services. Theoretically if we were to win—for example—up to 3 percent additional business from our competitors because we have demonstrated our commitment to environmental responsibility in the construction and running of our datacenters and the design and development of our hardware, the impact based on FY19 (the reporting period) revenue of $125.843 billion would have been an increase of up to $3.8 billion. Note that the likelihood rating of “very likely” applies to the opportunity itself and not the financial impact.

Cost to realize opportunity
34,300,000

Strategy to realize opportunity and explanation of cost calculation
Our strategy to gain competitive advantage by developing lower-emission products/services is to reduce our (1) cloud datacenter carbon footprint and (2) device scope 3 emissions.

(1) We are testing dual-purpose energy storage in our datacenters for backup power and renewables integration on the grid. We use outside air and adiabatic cooling (reducing energy costs ~30%) where possible. Our LEED commitment for new datacenter design accrues to our energy efficiency metrics. In FY19 our AHSI group began a range of supply chain initiatives to close product and material loops to reduce emissions from raw material extraction and end-of-life choices for our cloud infrastructure. In January 2020, we released the Microsoft Sustainability Calculator, a Power BI application that provides the emissions associated with enterprise customers’ Azure service. The calculator quantifies the carbon impact of each Azure subscription over a period of time and datacenter region and shows estimated carbon savings from running those workloads in Azure vs. on-premises datacenters.

(2) Our aggressive scope 3 reduction target and required supplier reporting will incentivize development of lower-carbon hardware. Our
roadmap covers the product lifecycle: in manufacturing, designing with lower carbon materials and working with suppliers to help lower their footprint; in use, aiming to meet/exceed efficiency standards; in transportation, working to improve shipping efficiency; and in end-of-life, improving repairability/recyclability. Surface Pro 5, Surface Go, and Surface Book 2 are ENERGY STAR certified and EPEAT registered in the US at the Bronze level. Surface Pro 6, Surface Pro 7, Surface Pro X, Surface Go 2, Surface Laptop 3, and Surface Book 3 are ENERGY STAR certified and EPEAT registered in the US at the Silver level. In FY19, we certified 825,000 gaming consoles as CarbonNeutral, achieved through renewable energy certificates and high-quality carbon offsets.

We’ve made significant investments in building innovative global cloud infrastructure and lowering our hardware emissions footprint; we do not disclose these specific costs. The annual cost listed is our FY19 scope 1, 2 and 3 (business travel) emissions of 4,062,522 mtCO2e multiplied by our internal $8.44 carbon fee; these funds are used to pay for sustainability improvements. This does not include other investments by business groups, including for infrastructure/product development.

**Comment**

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**Identifier**
Opp4

**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 through access to new and emerging markets
Company-specific description

As described within opportunity 3, whether in response to environmental commitments, regulatory requirements, rising energy costs, or reputational risk, our customers are increasingly looking to reduce their carbon footprint. While part of their focus is in reducing the emissions associated with their IT (as covered in opportunity 3), they are also looking to reduce the emissions associated with their business operations. For Microsoft, this presents an opportunity to develop technology solutions that help customers do just this, such as by reducing operational energy consumption or by displacing traditional business activities with lower-emission technology alternatives.

Location of effect: Microsoft customers are global. We believe this opportunity is greatest with customers in regions where environmental criteria are more strongly weighted in purchasing decisions (such as Europe) and where government regulations impose a financial incentive to reduce emissions (such as through carbon taxes or emission trading schemes, such as in California or the European Union).

Time horizon
Long-term

Likelihood
Very likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)
0

Potential financial impact figure – maximum (currency)
3,800,000,000
Explanation of financial impact figure

It is difficult to quantify the potential financial implications. Theoretically if we were to win—for example—up to 3 percent additional business from our competitors because we offered low-emission products and services to help customers reduce their carbon footprint, the impact based on FY19 (the reporting period) revenue of $125.843 billion would have been an increase of up to $3.8 billion. Note that the likelihood rating of “very likely” applies to the opportunity itself and not the financial impact.

Cost to realize opportunity

34,300,000

Strategy to realize opportunity and explanation of cost calculation

Our strategy to gain competitive advantage and enter new markets by innovating and developing lower-emission products/services is to (1) develop technology solutions to help others reduce the emissions/energy consumption from their business operations and (2) offer low-carbon technology alternatives for business activities.

(1) We are innovating through Azure IoT solutions for energy and sustainability, including Energy Smart Buildings technology to automatically identify energy-draining faults in real time and a carbon emissions data solution to show customers the carbon intensity of their energy mix from the grid in real time. For example, Microsoft customer Vattenfall is developing a first-of-its-kind solution to track and match renewable energy generation with demand in near real time, using IoT data from smart meters and green power–generating devices; the 24/7 solution is built with the Azure IoT Central platform, connecting energy generation (e.g. wind, hydropower) to data monitoring from smart meters that measure real-time consumption to improve operational efficiencies and secure clean renewable energy for customers while enabling investment in additional renewable energy developments. We are the first large corporate user of the Embodied Carbon in Construction Calculator (EC3) to track embodied carbon emissions of raw building materials (being piloted in 17 new buildings and 2.5 million square feet of new workspace in Redmond). Supporting the green building movement, the LinkedIn Learning certification course for members seeking the LEED Green Associate credential has had 11,200 views since launching in January 2019; in late 2019, LinkedIn unlocked access to the full sustainability learning path for all 600 million members during the Global Climate Action Summit, enabling people globally to learn skills to implement sustainable practices to help reduce emissions associated with building design and construction.

(2) Microsoft Teams helps reduce the need for travel with online meetings. LinkedIn offers a learning platform with online courses and skills training available to all 650 million members, helping reduce travel-related emissions by undertaking online learning alternatives.
The annual cost listed is our FY19 scope 1, 2 and 3 (business travel) emissions of 4,062,522 mtCO2e multiplied by our internal $8.44 carbon fee; these funds are used to pay for sustainability improvements. This does not include other investments by business groups.

**Comment**

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**Identifier**

Opp5

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

Downstream

**Opportunity type**

Resilience

**Primary climate-related opportunity driver**

Resource substitutes/diversification

**Primary potential financial impact**

Increased revenues through access to new and emerging markets

**Company-specific description**

As the physical impacts of climate change become more extreme (e.g. flooding caused by sea level rise or increased precipitation, more severe weather events), our customers increasingly want to make their businesses climate resilient. Any disruption from the physical impacts of climate change will be costly, particularly where technology infrastructure is damaged and operations cannot continue from an alternative site. We have business continuity and resilience standards in place to maintain and optimize our operations while providing continuity of services for our customers. Our opportunity is threefold: (1) We can provide technology/services that are resilient to the physical impacts of climate change. When an organization gets its technical infrastructure and software as a service through a cloud provider with georedundant datacenters, the likelihood of a weather-related disaster shutting down the services is low. Affected organizations can resume operations as soon as they can restore Internet access (or even continue operations without disruption from an alternative site with Internet access). (2) Microsoft AI for Earth
enables organizations to develop artificial intelligence (AI) computing resources that help people, organizations and governments anticipate, predict and manage climate change impacts. Some examples of AI for Earth grantees include Terrafuse, which uses machine learning to forecast climate-related risks (using historical wildfire data, numerical simulations and satellite imagery on Azure to model wildfire risk for any location), and the World Mosquito Program in Vietnam, which uses a remote-sensing Microsoft AI solution to identify release points for bacteria that infect mosquitoes and reduce the risk those mosquitoes pose to humans (climate change brings mosquito-borne diseases to areas where disease had previously been eradicated or to entirely new areas). (3) Microsoft tools such as Microsoft Teams and Microsoft 365 enable employees to work from alternative locations in the event of climate-related physical damage to an office or health-related events that indicate employees should limit time outdoors, such as the California wildfires in 2019.

Location of effect: Microsoft technology and cloud services are global. The resilience of our cloud services may be of greater benefit to those most at risk for business disruption from a climate-related weather event, such as coastal areas at increased risk from flooding and severe storms.

Time horizon
Long-term

Likelihood
Likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)
0

Potential financial impact figure – maximum (currency)
3,800,000,000

Explanation of financial impact figure

It is difficult to quantify the potential financial implications. Theoretically if we were to win—for example—up to 3 percent additional business from our competitors because we offered technology to help organizations and governments manage the impacts of climate change (through resilient cloud services and AI computing resources), the impact based on FY19 (the reporting period) revenue of $125.843 billion would have been an increase of up to $3.8 billion. Note that the likelihood rating of “likely” applies to the opportunity itself and not the financial impact.

Cost to realize opportunity

34,300,000

Strategy to realize opportunity and explanation of cost calculation

Our strategy to provide climate-resilient products/services is to (1) deliver cloud solutions across our product lines, (2) empower people/organizations to solve global environmental challenges with AI and (3) provide solutions for remote work/communication during extreme events.

(1) Two of our most significant business services are Microsoft 365 and Azure. Our global cloud service operations are supported by one of the largest physical networks in the world with several industry certifications including ISO/IEC 27001:2005 and SAS70 Type II. We use georeplicated customer workloads (keeping multiple copies of workloads in multiple locations) to improve reliability. We have >3,000 employees and 4,500 vendors working on cloud infrastructure and >10,000 software engineers involved in cloud-based activities. In January 2020, we released the Microsoft Sustainability Calculator, a Power BI application that provides the carbon emissions associated with enterprise customers’ Azure services; the calculator quantifies the carbon impact of each Azure subscription over a period of time and datacenter region and shows estimated carbon savings from running those workloads in Azure vs. on-premises datacenters.

(2) AI for Earth increases access to AI tools and educational opportunities while accelerating innovation. Funded with $50 million over a 5-year commitment in December 2017, the program focuses on deploying our investments in AI research/technology to enable people/organizations to sustain and manage Earth’s life support systems. In April 2020, we committed incremental investments for infrastructure development. Grantees receive access to the world’s critical environmental datasets and a computing platform to analyze them on.

(3) Microsoft Teams supports meetings for up to 250 people and teams of up to 5,000 people to share posts, files, wikis and more. Users can integrate Teams with other Microsoft applications for an integrated virtual collaboration platform.
We've made significant investments in building innovative global cloud computing infrastructure; we do not disclose these specific costs. The annual cost listed is our FY19 scope 1, 2 and 3 (business travel) emissions of 4,062,522 mtCO2e multiplied by our internal $8.44 carbon fee; these funds are used to pay for sustainability improvements. This does not include other investments by business groups, including for infrastructure/product development (it does, however, cover the annual AI for Earth costs).

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization’s strategy and/or financial planning?
   Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?
   Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization’s use of climate-related scenario analysis.

<table>
<thead>
<tr>
<th>Climate-related scenarios and models applied</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCP 8.5</td>
<td>In 2017, the corporate Environmental Sustainability (ES) team conducted a quantitative and qualitative scenario analysis of the physical impacts of climate change based on the IPCC RCP 8.5 scenario. We used a selection of global models from the Coupled</td>
</tr>
</tbody>
</table>
Model Intercomparison Project Phase 5 (from the US, the UK, Norway and Germany) as well as regional climate models as appropriate. Our primary source of downscaled data was the NASA Earth Exchange Global Daily Downscaled Projections, allowing for forecasts that cover an area as small as ~25km². We selected RCP 8.5 because it represents a business-as-usual scenario and, in our view, is a worst case for physical impacts through 2030. We looked at seven possible stressors: increased energy demand, extreme temperature changes, extreme heat days, drought length, drought frequency, flood intensity and sea level rise. We ran scenarios for 2030 and 2060. For each stressor, we assessed the magnitude of change in 2030 versus the baseline climate conditions found in 1975–2005. We selected the 2030 horizon because it was long enough for variation in the models attributable to climate change to appear but short enough to be actionable within our current risk management and business planning process horizons. We looked at our most critical facilities based on maximum feasible loss calculations, insurance values and business judgment. Facility types included offices, retail, labs, datacenters and critical manufacturers in our supply chain and covered all Microsoft business geographies. The scenario analysis identified risks such as water shortage from extended drought at our Beijing, Chennai and Pune facilities and coastal flooding due to sea level rise at our Mumbai facility. We determined none of these risks to be material or substantive at this time, as Microsoft is well capitalized and geographically diverse in customer markets and location of product/service delivery. We identified mitigation measures that are a normal part of our business, including adjusting the schedule of backup fuel deliveries to accommodate potential shifts in timing, location and intensity of hurricanes, developing alternative sourcing strategies in water-stressed locations, diversifying electric supply options in locations prone to severe storms and outages, and collaborating with external partners (including customers) to install redundant substations or enhance water supply. We will continue to monitor these and similar risks in future years to confirm that these conclusions remain valid. The results of this analysis have been incorporated into our due diligence processes for supplier selection and datacenter site selection, helping to mainstream climate considerations in a wide range of regularly scheduled internal stakeholder discussions and informing our overall business strategy. In FY17, the corporate ES team began integrating the results of this analysis in the Microsoft Enterprise Risk Management (ERM) program, which identifies, assesses and prioritizes risks and, through regular reporting and discussion, assists senior management and the Board with governance of risk. By sharing the results of this assessment with the ERM program, we also raised awareness in the company’s senior leadership team about datacenter consumption of electricity and water. Case study: Our awareness of these risks contributed to our Puget Sound Energy direct access agreement on renewable electricity. We had previously relied on our existing utility for energy supply to our campus headquarters, which depended in part on coal-fired generation. We needed to find a way to procure 100 percent renewable energy to reduce our climate risk and meet our climate commitments. As a result, we pursued an energy direct access agreement
to obtain renewable energy from sources outside the utility. In FY19, we began receiving 100 percent carbon-free electricity from a long-term supply contract to power most of our Puget Sound operations.

<table>
<thead>
<tr>
<th>RCP 2.6</th>
<th>In FY19, our Experiences + Devices Group (E+D) concluded its cross-company analysis of Microsoft scope 3 emissions, the largest contributor to overall Microsoft emissions. The outcome was a greater understanding of the product lifecycle/supply chain “hotspots” and the establishment of a science-based emissions reduction target. An action plan has been developed outlining specific projects, the implementation of which will reduce emissions sufficiently to meet the chosen target.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other, please specify</td>
<td>Microsoft Cloud Operations + Innovation (CO+I), part of our Intelligent Cloud operating segment, regularly assesses the requirements to meet its renewable energy procurement goals by review of scenarios including variables of capacity requirements, policy, and cost. The scenarios used to guide these risk analyses are developed in-house and tailored to Microsoft business needs.</td>
</tr>
</tbody>
</table>

**C3.1d**

**(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.**

<table>
<thead>
<tr>
<th>Have climate-related risks and opportunities influenced your strategy in this area?</th>
<th>Description of influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products and services</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Microsoft continues to pursue opportunities to develop new products/services and invest in existing products/services to help our customers reduce their carbon footprint and plan for business continuity/resiliency with regard to climate change; these opportunities are influencing our strategy currently through 2030 at least. One of the most substantial strategic decisions we have made to date influenced by these opportunities is the shift to our cloud-based business strategy, including offering lower-carbon cloud services. Microsoft cloud services are up to 93% more energy efficient and up to 98% more carbon efficient relative to on-premises datacenters (as we have outlined in the 2018 “The carbon benefits of cloud computing” study). We have publicly committed to using 100 percent supply of renewable energy by 2025, including for the datacenters that power our cloud services. Furthermore, we use geo-replicated customer workloads (keeping multiple copies of workloads in multiple locations) to improve reliability and provide resiliency assurance (complemented by an ongoing global continuity...
program to monitor risks and having in place business continuity measures to help ensure continued reliability). In January 2020, we released the Microsoft Sustainability Calculator to meet customer demand for insight into the carbon emissions data associated with Azure enterprise services. In addition, our Cloud Supply Chain Sustainability (CSCS) team within our Azure Hardware Systems and Infrastructure (AHSI) group is focused on reducing the emissions linked to our cloud infrastructure throughout the product lifecycle, by collaborating with suppliers in areas such as eco design and creating new closed-loop product models built on circular principles as well as optimizing transportation, packaging, and distribution footprints.

<table>
<thead>
<tr>
<th>Supply chain and/or value chain</th>
<th>Yes</th>
</tr>
</thead>
</table>

The impact of our climate-related opportunities on our supply chain is primarily in our prioritization of suppliers that can provide more energy-efficient and lower-emission components, products and services. For example, we have an opportunity to reduce the energy consumption associated with our operations (such as moving to more efficient building design and operation) and related material procurement. We also have an opportunity to deliver low-emission goods/services, which relies on our ability to source efficient components for our hardware and reduce the footprint of the datacenters that power our cloud services for our customers vs. on-premises computing. The most substantial strategic decision we have made to date influenced by these opportunities is our commitment to cut our scope 3 emissions by 55 percent by 2030 and thus this represents the minimum time horizon for our strategy. We plan to partner throughout our supply chain to achieve this commitment. Suppliers with which we spend >$10 million annually will be required to report their emissions and develop a plan to reduce them, and we plan to highlight suppliers with lower emissions output with special attention and action. We are prioritizing investment with suppliers that (1) meet our requirements for lower-emission components, goods and services and (2) demonstrate a commitment to climate change performance, such as through emissions reporting and target setting (e.g. engaging our top suppliers through the CDP Supply Chain program and working with our cloud infrastructure suppliers to submit primary sustainability data to Microsoft directly to help inform the setting of carbon reduction targets). In some cases, we are investing directly in reducing the carbon footprint of select suppliers; for example, in FY19 (the reporting period), our Experiences + Devices group completed a two-year project to deploy smart-building technology and solar energy at three factory building sites at a major supplier to reduce GHG emissions and manufacturing costs. In addition, in FY20 Microsoft Procurement partnered with our corporate
sustainability team and KLM Royal Dutch Airlines to enable KLM to purchase 230,000 gallons of sustainable aviation fuel (SAF), resulting in 1,600 mtCO2e savings; the team also established criteria to guide future SAF partnerships.

<table>
<thead>
<tr>
<th>Investment in R&amp;D</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft is investing in research and development in both new technology solutions and datacenter design that will help us contribute to climate resilience through technology innovation while also helping increase our operating efficiency, meet growing demand for lower-emission products and services, and establish a stronger competitive position. Our strategy for R&amp;D investments extends to at least 2030. One of the most substantial strategic decisions we have made to date influenced by these opportunities is our investment in our AI for Earth program. Through AI for Earth, we are developing artificial intelligence (AI) computing resources to help organizations and governments anticipate, predict, and manage climate change impacts. Funded with $50 million and a 5-year commitment from Microsoft President Brad Smith in December 2017, the AI for Earth program is focused on deploying Microsoft’s deep investments in AI research and technology to enable people and organizations to sustain and manage Earth’s life support systems. As AI for Earth projects advance, we’ll identify and pursue opportunities to incorporate new AI advances into platform-level services (offered by Microsoft and others) so that others can use them for their own sustainability initiatives. In FY20, we announced the next phase of our AI for Earth program with increased investments in infrastructure development and our own research facilities. For example, we will accelerate the work of Microsoft Premonition, the world’s first robotic ecosystem monitoring system. This year, Premonition was used to study wild pollinators in the ecosystems of the Florida Keys and began to map insect communities in the important Albertine Rift ecosystems of Tanzania. In addition to our investments in AI for Earth, we are continually investigating design changes and developing new specifications to facilitate deep embodied carbon reductions in our datacenter designs over the long term. We are analyzing both the optimal use of conventional materials, such as concrete and steel, and pursuing more ambitious opportunities with emerging alternative materials that carry significantly less embodied carbon. We are also developing solutions to help organizations reduce and manage emissions and energy consumption, such as through Azure IoT (Internet of Things) solutions for energy and sustainability.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operations</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our operations are the area affected the most significantly by our climate-related opportunities. We have opportunities to demonstrate sustainability leadership by investing for resource efficiency within our</td>
<td></td>
</tr>
</tbody>
</table>
operations, which will bring cost savings, provide reputational benefits and help us meet growing demand for lower-emission cloud services. Our strategy looks out to at least 2050, as the most substantial strategic decision we have made to date influenced by these opportunities is our commitment by 2030 to be carbon negative and by 2050 to remove from the environment all the carbon the company has emitted either directly or by electrical consumption since it was founded in 1975. We have an aggressive program to cut our carbon emissions by more than half by 2030 (for both our direct emissions and our entire supply and value chain). By 2025, we will shift to 100 percent supply of renewable energy, meaning that we will have power purchase agreements and other long-term contracting instruments for green energy in place for 100 percent of carbon-emitting electricity consumed by all our datacenters, buildings and campuses. We will electrify our global Real Estate & Security campus operations vehicle fleet by 2030. And we will pursue International Living Future Institute Zero Carbon certification and LEED Platinum certification for our Silicon Valley Campus and Puget Sound Campus Modernization projects. To reach our carbon-negative commitment, we will invest in a portfolio of negative emission technologies (NETs) potentially including afforestation and reforestation, soil carbon sequestration, bioenergy with carbon capture and storage (BECCs) and direct air capture (DAC). We have also launched a $1 billion Climate Innovation Fund to accelerate and innovate climate solutions to help us and the world meet sustainability goals aligned with carbon, waste, water and ecosystems and specifically become carbon negative. These commitments are supported by our existing action in these areas, such as our latest renewable energy deals: in FY19, we announced new renewable energy deals—with the Chelan County Public Utility District (PUD) (Washington), the Timber Road Wind project (Ohio), the Wilkinson Solar project (North Carolina), the Big Level Wind project (Pennsylvania) and the Borssele Wind project (the Netherlands)—for more than 430 MW of direct renewable energy.

**C3.1e**

*(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.*
### Financial planning elements that have been influenced

<table>
<thead>
<tr>
<th>Row</th>
<th>Revenues</th>
<th>Indirect costs</th>
<th>Capital expenditures</th>
<th>Access to capital</th>
<th>Liabilities</th>
</tr>
</thead>
</table>

**CASE STUDY:** Our business is affected by a range of physical and transition climate risks and opportunities (including, but not limited to, those related to the increasing cost of regulatory restrictions on GHG emissions, increasing customer requirements for environmentally responsible suppliers, and stigmatization of the IT sector for the scale of its energy and water consumption and GHG footprint). These risks and opportunities provide the business case for Microsoft to drive more energy-efficient operations, commit to renewable energy, and reduce our carbon footprint while contributing to the global response to climate change. Accordingly, in July 2012, we committed to operate carbon neutral and introduced an internal carbon fee, charging business groups for emissions associated with their energy consumption and business air travel. In FY19 (the reporting period), we announced that we will raise our carbon fee to $15 per ton to more fully reflect the cost of carbon. Starting in July 2020, in support of our new commitment to be carbon negative by 2030, we expanded the fee to start charging for not only our own operational emissions, but also our scope 3 emissions. The carbon fee affects our long-term financial planning, providing an incentive, the financial justification, and in some cases the funds for renewable energy investments, climate-related energy and technology innovation, and the development of carbon reduction projects. The time horizon for the financial planning associated with our carbon fee is therefore through 2030 and beyond. Our carbon fee has primarily influenced two of the financial planning elements listed in column 1: indirect costs and capital expenditures. Indirect costs: For indirect costs, the funds collected through the carbon fee are used to cover (in part) the costs to meet our carbon commitments. This includes investments in renewable energy (in FY19, it was used to purchase 9,324,258 MWh of renewable energy globally), fleet electrification, and other projects (such as to fund an agreement made in October 2019 with KLM Airlines to enable KLM to purchase an amount of sustainable aviation fuel [SAF] equivalent to all KLM flights taken by Microsoft employees between the United States and the Netherlands). Capital expenditures: For capital expenditures, we use the carbon fee to fund some energy efficiency investments within our facilities; these have included investments in, for example, light-emitting diode (LED) lighting projects. (These carbon fee projects are supplemented by dedicated datacenter and real estate capital budgets for energy-efficient infrastructure and design.) Liabilities: In addition to the primary influence of our carbon fee on indirect cost and capital expenditure financial planning, the carbon fee also influences our financial planning for liabilities; carbon fee investments to reduce energy consumption, water consumption, and carbon emissions help reduce our possible future legal liabilities in resource-constrained or climate-affected jurisdictions. ADDITIONAL INFLUENCES: Two other financial planning elements—
revenues and access to capital—have been influenced by our climate-related risks and opportunities. Revenues: Our company’s investments in the cloud, artificial intelligence (AI), and Azure IoT are key to helping us gain a better competitive position as interest in environmentally responsible suppliers and lower-emissions services increases; the associated revenue projections for these areas are central to Microsoft financial planning. Access to capital: We view our sustainability performance, carbon commitments, and strategy to realize climate-related opportunities as an advantage when engaging with our investment community; these are important inputs to our financial planning related to access to capital, and we integrate information on our sustainability performance in meetings with our large institutional investors. In FY19, we began the process of aligning with the Task Force on Climate-related Financial Disclosures (TCFD) per the desires of the investment community.

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

Our corporate Environmental Sustainability (ES) team leads cross-organizational integration of climate change/sustainability into our business strategy through cross-company communications and sustainability programs, principles, and policies. The ES team sets the company’s sustainability vision, strategy, and goals and then works with corporate business groups including Real Estate & Security (RE&S), Cloud Innovation + Operations (CO+I), Experiences + Devices (E+D), Microsoft Procurement, and Microsoft Travel to develop implementation plans. The team also works with customer and sales teams to identify opportunities to engage and accelerate customer work on sustainability and develop product strategy, including a roadmap to define and improve the efficiency of code as well as develop new products.

As an example of how Microsoft business strategy was influenced in FY19 (the reporting period) by climate-related risks and opportunities, our Cloud Supply Chain Sustainability (CSCS) team (part of our Azure Hardware Systems and Infrastructure [AHSI] group) was established to review Microsoft cloud infrastructure lifecycle programs and work collaboratively with our suppliers to create more sustainable material and product loops. The team’s cloud circularity initiative focuses on minimizing waste streams through increased reuse, resulting in the repurposing of datacenter servers and equipment as they are retired from our datacenters.

In support of our business strategy, we have had a carbon neutral target since FY13. In FY19 (reporting year), we committed to powering our datacenters with 70 percent wind, solar, or hydropower energy by 2023. In addition, in FY20, we made a commitment that by 2030 we would be carbon
negative, both for our own operations and across our value chain, and by 2050 we would remove from the environment all the carbon the company has emitted either directly or by electrical consumption since it was founded in 1975. We have launched an aggressive program to cut our carbon emissions by more than half by 2030 (both for our direct emissions and for our entire supply and value chain). And by 2025, we will shift to 100 percent supply of renewable energy, meaning that we will have power purchase agreements and other long-term contracting instruments for green energy in place for 100 percent of carbon-emitting electricity consumed by all our datacenters, buildings, and campuses.

Examples of substantial climate-related business decisions in FY19:

- **Renewable energy:** Announced more than 430 MW of direct renewable energy to power datacenters across the globe, including with the Chelan County Public Utility District (PUD) (Washington), the Timber Road Wind project (Ohio), the Wilkinson Solar project (North Carolina), the Big Level Wind project (Pennsylvania), and the Borssele Wind project (the Netherlands). Pursued a first-of-its-kind volume firming agreement (VFA) to help reduce the risks to Microsoft related to weather that are inherent in traditional power purchase agreements (PPAs) while making it easier for others to use and buy more renewable energy. Signed a contract to buy 100 percent carbon-free electricity on the open market to power most of our Puget Sound operations via the Chelan PUD agreement.

- **Embodied Carbon in Construction Calculator (EC3):** Started using the EC3 tool to evaluate materials, inform procurement decisions, and track reductions in the embodied carbon emissions of building materials in the design for the new Redmond campus (including 17 new buildings and 2.5 million square feet of new office space); we supported the development of the free, open-access EC3 tool with Skanska and the University of Washington following Skanska’s proposal during contract negotiations to build our new campus. Along with industry partners, shared the EC3 tool with the entire building industry.

- **Energy, water, and waste reduction targets for our global real estate portfolio:** Through FY19, conducted audits at five major campuses and eight other key sites representing 20 percent of RE&S energy usage to identify opportunities for energy, water, and waste reductions in support of these targets.

- **New campus developments:**
  - **New Silicon Valley campus:** Committed to pursuing LEED Platinum, WELL Gold, Living Building Challenge Petal, and International Living Future Institute Zero Carbon certifications. Committed to installing onsite solar panels, operable windows, and ceiling fans to reduce the need for mechanical conditioning and thermal energy storage to optimize system usage during non-peak hours. Designing a net-zero non-potable water campus with onsite black, gray, and rainwater treatment.
  - **New Hyderabad building:** Committed to pursuing LEED certification for the newest building being constructed for our Hyderabad campus. Using dual piping to supply flush fixtures with non-potable water from an onsite rainwater reservoir (given location in a water-stressed region).
  - **Puget Sound Campus Modernization project:** Committed to zero-carbon and zero-waste goals and LEED Platinum and International Living Future Institute Zero Carbon certifications for the new 17-building, 2.5-million-square-foot campus addition. Committed to powering the campus with 100 percent local carbon-free hydropower and to building a new wind or solar project in the state. Committed to reducing embodied carbon in construction materials by 15 percent, with an aspirational goal of 30 percent. Designing an all-electric campus, eliminating the use of fossil fuels within buildings.
Supply chain: Took action through the Microsoft Devices Environmental Compliance team to mitigate against risks (including those from climate/environmental regulation changes) by enabling a multi-supplier sourcing strategy, ensuring that the suppliers that provide components and parts that make up Devices’ bills of materials can be sourced from multiple qualified suppliers to avoid possible supply chain disruption.

The aspects of climate change that influenced these decisions are the international negotiations agenda (Paris Agreement), increasing cost of electricity, rising customer expectations for energy efficiency and the use of renewable energy from Microsoft as a supplier, increasing employee scrutiny, and the increasing urgency, severity, and frequency of climate change impacts. As updated global climate risk models emerge, the Microsoft corporate Environmental Sustainability team works with subject matter experts from across the company to identify climate-related risks for the purposes of business continuity and risk mitigation. In FY18, the team expanded our physical climate risk assessment to include key supplier facilities and key facilities from our LinkedIn acquisition and is currently in the process of assessing transition risks through 2050. These assessments influence climate-related decision making within our organization.

C4. Targets and performance

C4.1

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

Absolute target

C4.1a

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

<table>
<thead>
<tr>
<th>Target reference number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abs 1</td>
</tr>
</tbody>
</table>

Year target was set

<table>
<thead>
<tr>
<th>Year target was set</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
</tr>
</tbody>
</table>
**Target coverage**
Company-wide

**Scope(s) (or Scope 3 category)**
Other, please specify
Scope 1 + Scope 2 (market-based) + Scope 3 (upstream business air travel only)

**Base year**
2018

**Covered emissions in base year (metric tons CO2e)**
0.01

**Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**
100

**Target year**
2019

**Targeted reduction from base year (%)**
100

**Covered emissions in target year (metric tons CO2e) [auto-calculated]**
0

**Covered emissions in reporting year (metric tons CO2e)**
0

**% of target achieved [auto-calculated]**
100

**Target status in reporting year**
Achieved
Is this a science-based target?
No, but we are reporting another target that is science-based

Please explain (including target coverage)
Starting in July 2012, Microsoft had a target to be carbon neutral every year from fiscal year (FY) 2013 onward. We achieved carbon neutrality in FY19 (the reporting period) through a combination of onsite renewable electricity generation, internal energy efficiency projects, and purchases of renewable electricity and carbon offsets. We understand that CDP guidance requests that companies not consider carbon offsets when reporting targets in C4.1. However, we have elected to report offsets in order to communicate these GHG emissions management activities; we have also reported additional targets that do not use offsets (see Abs2 and Abs3). Note that the start, base, and target years reported are based on the Microsoft fiscal year. Our start year for this commitment is FY13—the first year in which we achieved carbon neutrality—and we committed to achieving carbon neutrality in all subsequent years. Because our commitment is ongoing and achieved annually, the base year (FY18) is the year prior to the target year (FY19, the reporting year). The FY18 base year emissions reported here are zero because we achieved our carbon neutral target in FY18. In FY20, Microsoft committed to shift our carbon-offsetting activity to accredited carbon removals, consistent with an emerging non-governmental organization (NGO) definition of net-zero emissions. Additionally, in January 2020, Microsoft announced that, by 2030, we will become carbon negative, annually removing more emissions from the atmosphere than our total scope 1, 2, and 3 emissions combined, and by 2050, we will remove all the carbon the company has emitted either directly or by electrical consumption since it was founded in 1975. This will be achieved through both reductions in our scope 1, 2 and 3 emissions and a portfolio of negative emission technologies (NET), potentially including afforestation and reforestation, soil carbon sequestration, bioenergy with carbon capture and storage (BECCs), and direct air capture (DAC).

Target reference number
Abs 2

Year target was set
2017

Target coverage
Company-wide
Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Base year
2013

Covered emissions in base year (metric tons CO2e)
920,143

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2030

Targeted reduction from base year (%)
75

Covered emissions in target year (metric tons CO2e) [auto-calculated]
230,035.75

Covered emissions in reporting year (metric tons CO2e)
388,787

% of target achieved [auto-calculated]
76.9961480625

Target status in reporting year
Underway

Is this a science-based target?
Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative
Please explain (including target coverage)

In 2017, Microsoft committed to reducing absolute scope 1 + scope 2 (market-based) emissions by 75 percent by 2030, against a 2013 baseline. This would help avoid more than 10 million metrics tons of carbon emissions by 2030. This puts Microsoft on a path, as a company, to meet the goals set in the Paris climate agreement, which is a level of decarbonization that many scientists believe is necessary to keep global temperature increase below 2 degrees Celsius. Additionally, in September 2019, the Science Based Targets Initiative (SBTI) certified Microsoft’s target to reduce scope 3 GHG emissions intensity per unit of revenue 30 percent by 2030 from a 2017 base year and to avoid growth in absolute scope 3 emissions. And in January 2020, we announced a bolder goal of reducing our scope 1 and 2 emissions to near zero by 2025, which we will achieve through energy efficiency, energy decarbonization (100 percent renewable energy by 2025), and fleet electrification. We also announced that we will take our scope 3 ambitions a step even further, reducing our total scope 3 emissions by 55 percent by 2030.

Target reference number
Abs 3

Year target was set
2017

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Base year
2013

Covered emissions in base year (metric tons CO2e)
920,143

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
Target year
2045

Targeted reduction from base year (%)
75

Covered emissions in target year (metric tons CO2e) [auto-calculated]
230,035.75

Covered emissions in reporting year (metric tons CO2e)
388,787

% of target achieved [auto-calculated]
76.9961480625

Target status in reporting year
Underway

Is this a science-based target?
Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)
Abs3 is not a standalone target but rather the outcome of our carbon neutral (now net-zero) (Abs1) and renewable electricity commitments; it is an extension of Abs2. As a result of our indefinite commitment to renewable electricity and our new commitment to reduce our scope 1 and 2 emissions to near zero by 2025, we will maintain or exceed a 75 percent scope 1 and scope 2 (market-based) decrease from our FY13 base year beyond the 2030 target year in Abs2.

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

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**
2014

**Target coverage**
Company-wide

**Target type: absolute or intensity**
Absolute

**Target type: energy carrier**
 Electricity

**Target type: activity**
Consumption

**Target type: energy source**
Renewable energy source(s) only

**Metric (target numerator if reporting an intensity target)**
Percentage

**Target denominator (intensity targets only)**
**Base year**
2014

**Figure or percentage in base year**
70

**Target year**
2030

**Figure or percentage in target year**
100

**Figure or percentage in reporting year**
100

**% of target achieved [auto-calculated]**
100

**Target status in reporting year**
Achieved

**Is this target part of an emissions target?**
- Abs1
- Abs2
- Abs3

**Is this target part of an overarching initiative?**
Other, please specify
- RE100, Science Based Targets Initiative

**Please explain (including target coverage)**
In FY19 (reporting year), our percentage of renewable electricity was 100 percent. This indicates that we are 100 percent complete on this target from a 2014 baseline of 70 percent. The scope of this target is electricity consumption, which represents 99.9 percent of our global scope 2 (location-based) emissions and 95 percent of our global scope 1 and scope 2 (market-based) emissions. As part of our carbon neutral target and 100 percent renewable electricity commitment through the RE100 program, Microsoft plans to achieve 100 percent renewable energy each year; therefore, the target needs to be continually “achieved” each year. This target has been certified as science based by the Science Based Targets Initiative.

Target reference number

Low 2

Year target was set

2019

Target coverage

Business division

Target type: absolute or intensity

Absolute

Target type: energy carrier

Electricity

Target type: activity

Consumption

Target type: energy source

Renewable energy source(s) only

Metric (target numerator if reporting an intensity target)

Percentage
Target denominator (intensity targets only)

Base year
2016

Figure or percentage in base year
44

Target year
2023

Figure or percentage in target year
70

Figure or percentage in reporting year
47

% of target achieved [auto-calculated]
11.5384615385

Target status in reporting year
New

Is this target part of an emissions target?
Abs1
Abs2
Abs3

Is this target part of an overarching initiative?
RE100

Please explain (including target coverage)
In FY19 (reporting year), we committed to powering our datacenters with 70 percent wind, solar, or hydropower energy by 2023. The 47 percent reported is an average for FY19 (we reached 60 percent at a point in time, not averaged out over the period). In January 2020, we raised the bar and increased our target to 100 percent by 2025—meaning that we will have power purchase agreements and other long-term contracting instruments for green energy in place for 100 percent of carbon-emitting electricity consumed by all our datacenters, buildings, and campuses. We will match our annual total operational electricity use each fiscal year with an equal amount of renewable energy purchased. We are on target to reach 100 percent in 2025.

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.

<table>
<thead>
<tr>
<th>Number of initiatives</th>
<th>Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under investigation</td>
<td>0</td>
</tr>
<tr>
<td>To be implemented*</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>587,680</td>
</tr>
<tr>
<td>Implementation commenced*</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>889,905</td>
</tr>
<tr>
<td>Implemented*</td>
<td>468</td>
</tr>
<tr>
<td></td>
<td>1,048,236</td>
</tr>
<tr>
<td>Not to be implemented</td>
<td>0</td>
</tr>
</tbody>
</table>

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  
|                                         | Other, please specify  
|                                         | Wind and solar |
| Estimated annual CO₂e savings (metric tonnes CO₂e) | 438,785 |
| Scope(s) | Scope 2 (market-based) |
| Voluntary/Mandatory | Voluntary |
| Annual monetary savings (unit currency – as specified in C0.4) | 0 |
| Investment required (unit currency – as specified in C0.4) |  |
| Payback period | No payback |
| Estimated lifetime of the initiative | <1 year |
| Comment | Green power (1 project). We continue to make a significant investment in low-carbon energy purchases through the market-based tracking instruments renewable energy certificates (RECs; USA and Canada), guarantees of origin (Gos; EU), international RECs (I-RECs; Brazil, Central America, Chile, China, East Africa, India, Indonesia, Israel, Malaysia, Mexico, Philippines, South Africa, Thailand, Turkey, the United |
Arab Emirates [UAE] and Vietnam), Powerplus (India, South Korea), J-Credits (Japan), renewable energy guarantees of origin (REGOs; UK), and Goldpower (Taiwan, Thailand). These low-carbon energy purchases were voluntary and not in relation to external regulation. The purchases resulted in the reduction of the scope 2 market-based emissions included within our carbon neutral target. The expected lifetime of the purchase is one year and occurs in the year the green power was generated and accounted for by Microsoft (FY19, the reporting period for this response). We have only reported incremental REC purchases here per CDP guidance; however, this figure does not represent the full scale of the commitment that we have made to using green power, which for the reporting period reduced market-based scope 2 emissions by 2,607,999 mtCO2e from our location-based emissions.

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-carbon energy consumption</td>
</tr>
<tr>
<td>Other, please specify</td>
</tr>
<tr>
<td>Wind and solar</td>
</tr>
</tbody>
</table>

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

18,250

**Scope(s)**

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**
Estimated lifetime of the initiative
<1 year

Comment
Power purchase agreements (7 projects). In FY19, we began purchasing 100 percent of the wind energy from the 37-megawatt (MW) Tullahennel wind farm in County Kerry, Ireland. Additionally, in FY19 we began receiving incremental hydro renewable energy certificates (RECs) for our Puget Sound campus from our agreement with Chelan PUD. As part of this agreement, Microsoft will collaborate on efforts to expand broadband service in rural parts of Chelan County, WA. These low-carbon energy purchases were voluntary and not in relation to external regulation. The purchases resulted in the reduction of scope 2 market-based emissions included within our carbon neutral target (and carbon negative target, set in FY20). The expected lifetime of the power purchased in FY19 is one year and occurs in the year the green power was generated and accounted for by Microsoft (FY19, the reporting period for this response), though all PPAs are long-term (10- to 20-year) agreements. We have only reported incremental RECs from PPAs here per CDP guidance; however, this figure does not represent the full scale of the commitment that we have made to using green power derived from long-term commitments such as PPAs, which for the reporting period avoided market-based scope 2 emissions by 673,178 mtCO2e from our location-based emissions.

Initiative category & Initiative type
Energy efficiency in buildings
Building Energy Management Systems (BEMS)

Estimated annual CO2e savings (metric tonnes CO2e)
2,750

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
46,050
Investment required (unit currency – as specified in C0.4)
3,466,000

Payback period
1-3 years

Estimated lifetime of the initiative
Ongoing

Comment
Energy Smart Buildings (ESB) projects (416 projects). Using ESB efficiency optimization software on our Puget Sound, Las Colinas, Beijing, Shanghai, Fargo, Charlotte, and Dublin campuses (offices, labs), our Real Estate & Security (RE&S) group identified energy inefficiencies due to broken equipment and suboptimal control settings. The 416 projects listed include repairs to equipment and updates to controls. This initiative reduces scope 2 emissions included in our carbon neutral target (and carbon negative target, set in FY20).

Initiative category & Initiative type
Energy efficiency in buildings
Heating, Ventilation and Air Conditioning (HVAC)

Estimated annual CO2e savings (metric tonnes CO2e)
1,495

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
911,085
Investment required (unit currency – as specified in C0.4)
3,738,215

Payback period
1-3 years

Estimated lifetime of the initiative
16-20 years

Comment
Heating, ventilation, and air conditioning (HVAC) projects (21 projects). Investments by our Real Estate & Security (RE&S) group at our Beijing, Fargo, Hyderabad, Las Colinas, Reading, Shanghai, and Times Square (New York) campuses and sites included building management system schedule optimization, cooling tower repairs, and pipe insulation. This initiative reduces scope 2 emissions included in our carbon neutral target (and carbon negative target, set in FY20).

Initiative category & Initiative type
Energy efficiency in buildings
Lighting

Estimated annual CO2e savings (metric tonnes CO2e)
1,480

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
261,130
**Investment required (unit currency – as specified in C0.4)**
636,615

**Payback period**
1-3 years

**Estimated lifetime of the initiative**
16-20 years

**Comment**
Lighting projects (9 projects). Investments by our Real Estate & Security (RE&S) group at our Beijing, Fargo, Hyderabad, and Shanghai campuses and sites included light-emitting diode (LED) lighting retrofits and lighting schedule optimization. This initiative reduces scope 2 emissions included in our carbon neutral target (and carbon negative target, set in FY20).

**Initiative category & Initiative type**
Energy efficiency in buildings
Other, please specify
   Small power & office equipment

**Estimated annual CO2e savings (metric tonnes CO2e)**
30

**Scope(s)**
Scope 2 (location-based)

**Voluntary/Mandatory**
Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**
4,630
**Investment required (unit currency – as specified in C0.4)**  
7,455

**Payback period**  
4-10 years

**Estimated lifetime of the initiative**  
11-15 years

**Comment**  
Small power & office equipment (3 projects). Investments by our Real Estate & Security (RE&S) group at our Fargo, Hyderabad, and Times Square (New York) campuses and sites included installing VendingMiser controls on vending machines and de-lamping lights inside vending machines. This initiative reduces scope 2 emissions included in our carbon neutral target (and carbon negative target, set in FY20).

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-carbon energy generation</td>
<td></td>
</tr>
<tr>
<td>Solar PV</td>
<td></td>
</tr>
</tbody>
</table>

| Estimated annual CO2e savings (metric tonnes CO2e) | 310 |

<table>
<thead>
<tr>
<th>Scope(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 2 (location-based)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Voluntary/Mandatory</th>
<th>Voluntary</th>
</tr>
</thead>
</table>

| Annual monetary savings (unit currency – as specified in C0.4) | 65,475 |

| Investment required (unit currency – as specified in C0.4) |  |
Payback period
4-10 years

Estimated lifetime of the initiative
16-20 years

Comment
Solar PV (1 project). This initiative by our Real Estate & Security (RE&S) group involved an investment at our Shanghai site to install solar photo-voltaic (PV) panels on the commons roof, supported with battery storage. This initiative reduces scope 2 emissions included in our carbon neutral target (and carbon negative target, set in FY20).

Initiative category & Initiative type
Company policy or behavioral change
Other, please specify
Employee awareness

Estimated annual CO2e savings (metric tonnes CO2e)
270

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
52,400

Investment required (unit currency – as specified in C0.4)
55,000

**Payback period**
1-3 years

**Estimated lifetime of the initiative**
Ongoing

**Comment**
Insulation project (1 project). This initiative by our Real Estate & Security (RE&S) group involved an investment at our Beijing campus to encourage proactive use of window shades on east, south, and west facades to limit solar gain. This initiative reduces scope 2 emissions included in our carbon neutral target (and carbon negative target, set in FY20).

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**Initiative category & Initiative type**
Transportation
Company fleet vehicle efficiency

**Estimated annual CO2e savings (metric tonnes CO2e)**
675

**Scope(s)**
Scope 1

**Voluntary/Mandatory**
Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**
383,000

**Investment required (unit currency – as specified in C0.4)**
0
Payback period
<1 year

Estimated lifetime of the initiative
Ongoing

Comment
Company car fleet emissions policies (1 project). Since FY13, the Microsoft Fleet team has been working to reduce the levels of greenhouse gas emissions (mainly CO2) produced by Microsoft company cars by implementing upper CO2 limits in global and local car policies. These limits are lowered each year. In FY13 Q1, our company car fleet had an average of 142.26 g/km. At the end of FY18, the average was 116.10 g/km, and over the FY19 reporting year this was reduced to 113.11 g/km. The emissions savings reported here are specific to the reductions made during FY19. The cost savings are approximate fuel savings based on the emissions reductions. In parallel, we are supporting the transition into electric mobility in markets where this is feasible. This initiative reduces scope 1 emissions included in our carbon neutral target (and carbon negative target, set in FY20).

Initiative category & Initiative type
Transportation
Employee commuting

Estimated annual CO2e savings (metric tonnes CO2e)
825

Scope(s)
Scope 3

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0
Investment required (unit currency – as specified in C0.4)
0

Payback period
<1 year

Estimated lifetime of the initiative
Ongoing

Comment
Microsoft Scoop employee commute application (1 project). Our Real Estate & Security (RE&S) group launched the Scoop carpooling app for employees commuting to the Puget Sound campus in early May 2018. It is also now in use at our Silicon Valley campus and by LinkedIn. As employee participation has continued to increase, during FY19, use of the app saved an incremental 825 mtCO2e by avoiding more than 315,000 one-way single-passenger vehicle trips and more than 2 million miles of driving. There is no capital investment cost as this service is provided to employees (who receive subsidized per-ride pricing). There are no cost savings to Microsoft as the fuel savings are realized by employees. This initiative reduces the scope 3 emissions included in our science-based emission reduction target (to reduce value chain emissions by 30 percent per unit of revenue by 2030 from a 2017 baseline) and our carbon negative target, both set in FY20.

Initiative category & Initiative type
Waste reduction and material circularity
Other, please specify
E-waste recycling and reuse

Estimated annual CO2e savings (metric tonnes CO2e)
1

Scope(s)
Scope 3

Voluntary/Mandatory
Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**
0

**Investment required (unit currency – as specified in C0.4)**
0

**Payback period**
<1 year

**Estimated lifetime of the initiative**
Ongoing

**Comment**
E-waste recycling program expansion (1 project). The Microsoft Responsible Recycle program was set up to support the recycling and reuse of our internal operational e-waste, helping reduce energy consumption, greenhouse gases, and hazardous waste. In FY19, we expanded this program to include collections in an additional five countries (Argentina, Latvia, Mexico, Peru, and Puerto Rico). The data provided here reflects the program expansion only and not the existing savings or costs of the program; however, this figure does not represent the full scale of the commitment that we have made to reducing emissions related to internal operational e-waste through this program, which for the reporting period reduced our scope 3 emissions by 1,450 mtCO2e. This initiative reduces the scope 3 emissions included in our science-based emission reduction target (to reduce value chain emissions by 30 percent per unit of revenue by 2030 from a 2017 baseline) and our carbon negative target, both set in FY20.

**Initiative category & Initiative type**
Company policy or behavioral change
Supplier engagement

**Estimated annual CO2e savings (metric tonnes CO2e)**
123,270
Scope(s)
  Scope 3

Voluntary/Mandatory
  Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
  0

Investment required (unit currency – as specified in C0.4)
  1,000,000

Payback period
  No payback

Estimated lifetime of the initiative
  3-5 years

Comment
  Project Celsius (1 project). Project Celsius was an initiative designed to help Microsoft reduce our scope 3 emissions associated with purchased goods and services by 55 percent. The initiative involved expanding our external supplier engagement program to invite more suppliers to disclose through the CDP Supply Chain program and build their capabilities to reduce their emissions through webinars and other training. As a result of this initiative, in the reporting year (FY19) Microsoft Procurement more than doubled the number of its indirect suppliers requested to participate in the program (102 percent increase from FY18), nearly doubled the number of its suppliers responding (99 percent increase from FY18), and saw the number of its first-time responders to CDP increase by 265 percent. Overall, the initiative helped reduce Microsoft scope 3 (categories 1, 2, and 4) emissions by 123,270 mtCO2e in the reporting year. This initiative reduces the scope 3 emissions included in our science-based emission reduction target (to reduce value chain emissions by 30 percent per unit of revenue by 2030 from a 2017 baseline) and our carbon negative target, both set in FY20. Although there is no direct monetary payback from this initiative, we anticipate indirect monetary savings for Microsoft as our suppliers increase their efficiency and therefore decrease their costs.
Initiative category & Initiative type
Company policy or behavioral change
Other, please specify
  Reduction in product emissions

Estimated annual CO2e savings (metric tonnes CO2e)
460,000

Scope(s)
Scope 3

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
2,500,000

Payback period
No payback

Estimated lifetime of the initiative
<1 year

Comment
CarbonNeutral Xbox pilot (1 project). In FY19, we certified 825,000 Xbox consoles as CarbonNeutral. The project resulted in the world's first carbon neutral gaming console, as carbon offsets were purchased equivalent to the carbon emissions emitted across the consoles' life cycle (including all emissions from the raw materials, manufacture, distribution, use, and disposal of the Xbox console, its controllers, and its packaging). We achieved carbon neutrality for these devices by purchasing renewable electricity and high-quality carbon offsets. This initiative
is part of our wider program of targets to reduce our emissions, including our science-based emission reduction target (to reduce value chain emissions by 30 percent per unit of revenue by 2030 from a 2017 baseline) and our carbon negative target, both set in FY20.

| Initiative category & Initiative type | Waste reduction and material circularity  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Waste reduction</td>
</tr>
</tbody>
</table>

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

95

**Scope(s)**

Scope 3

**Voluntary/Mandatory**

Voluntary

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

0

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

200,000

**Payback period**

No payback

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Office site waste reductions (4 projects). LinkedIn used a data-driven approach to drive improvements in waste diversion in some of our largest offices. We performed audits, prioritized investments such as composting infrastructure and centralized waste bins, and then measured the
impact. These initiatives kept waste out of the landfill and reduced carbon emissions. This initiative was voluntary for all but one of the four office sites. This initiative reduces the scope 3 emissions included in our science-based emission reduction target set in FY20 (to reduce value chain emissions by 30 percent per unit of revenue by 2030 from a 2017 baseline) and our carbon negative target, set in FY20.

C4.3c

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

<table>
<thead>
<tr>
<th>Method</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedicated budget for energy efficiency</td>
<td>Our datacenter operations team has dedicated headcount and budget for designing more efficient datacenters, optimizing existing datacenters, and tracking energy use and efficiency. Our Real Estate &amp; Security (RE&amp;S) group also has dedicated budget for headcount and addressing energy efficiency in global office spaces, retail stores, and research labs.</td>
</tr>
<tr>
<td>Dedicated budget for other emissions reduction activities</td>
<td>A component of our carbon fee is a dedicated fund focused on investments that reduce Microsoft energy use and carbon emissions. We select the initiatives funded through the carbon fee using a formal funding application process. In addition, across Microsoft, various business units have dedicated budget for emissions reduction activities. The Real Estate &amp; Security (RE&amp;S) group continues to use an energy management program in our Puget Sound, Las Colinas, Beijing, Shanghai, Fargo, Charlotte, and Dublin campuses to gain better insight into and management of energy use. Our travel organization has dedicated headcount and budget for analyzing travel patterns and practices to identify trends and recommend new reduction initiatives. Our Responsible Sourcing program within Microsoft Procurement has dedicated headcount and budget to engage and require suppliers to reduce their carbon emissions. A component of our Responsible Recycle (e-waste) program budget is focused on activities to evangelize hardware recycling internally, increasing employee awareness of how to recycle their electronic equipment securely and compliantly to help reduce energy consumption, greenhouse gases, and hazardous waste; activities include digital signage globally, holiday campaigns, office move/relocation campaigns, and management of Responsible Recycle Earth Day events in Puget Sound, Singapore, Dubai, Ireland, Portugal, and the United Kingdom. The Cloud Supply Chain Sustainability (CSCS) team within our Azure Hardware Systems and Infrastructure (AHSI) group has dedicated resources and a grant from the Microsoft sustainability fund to develop initiatives related to reducing carbon emissions linked to the cloud infrastructure value chain throughout the lifecycle.</td>
</tr>
<tr>
<td>Employee engagement</td>
<td>Microsoft employees are passionate about addressing the critical issues facing their local communities and the world. The Worldwide Sustainability Community (WWSC) is a global group of Microsoft professionals committed to protecting Earth’s</td>
</tr>
</tbody>
</table>

69
natural resources, creating positive environmental change, and ensuring Microsoft is operating with the most sustainable practices possible. It is a grassroots employee group focused on advancing sustainability at every level of the company by educating, inspiring, and activating employees to make changes in their personal and professional lives to reduce the company’s overall environmental impact. It provides a platform for continued sustainability education and involvement opportunities. In FY19 (the reporting period), we launched our Sustainability Hub using the User Voice platform. Employees can suggest ideas to make Microsoft more sustainable in forums such as energy/carbon, transportation, water, and products. Other users can then upvote the ideas, which are reviewed by the corporate Environmental Sustainability (ES) team and incorporated into sustainability strategy if feasible. Within our Real Estate & Security (RE&S) group, our facility managers are encouraged to submit ideas for energy conservation measures; their ideas are vetted by engineering teams and implemented if viable (for implemented projects, facility managers receive a portion of the savings realized as a monetary incentive and team recognition). In FY20, our travel organization (with our corporate ES team) launched a new Responsible Travel internal SharePoint site that provides personalized carbon reporting for business travel. LinkedIn’s Go Green team receives a monthly update on the company’s sustainability programs and supports energy efficiency and waste diversion activities in their workplaces; the program grew by 60 percent in FY19 and sponsored activities including 24 hours of Climate Reality viewing parties, a global sustainability impact quiz and a Go Green Hackday. LinkedIn has a carbon calculator for employees, who can purchase the same high-quality offsets that the company uses, and runs a green leadership training program each year.

| Financial optimization calculations | Our Real Estate & Security (RE&S) organization leads the design of new buildings, including cost/benefit analysis of more efficient designs and equipment. Our Cloud Operations + Innovation (CO+I) organization analyzes the cost/benefit of datacenter designs and is investing for greater efficiencies, reduced energy and water use, and more renewable energy to power its operations. With the corporate Environmental Sustainability team, our travel organization analyzes flight miles and class to help stakeholders from across the company identify potential areas of additional efficiency that can result in budget reductions. |
| Internal finance mechanisms | A component of our carbon fee is a dedicated fund focused on investments that reduce Microsoft energy use and carbon emissions. We select the initiatives funded through the carbon fee using a formal grant application process. Our travel organization sets employee policies around air travel, including class of travel, and is involved in annual budget setting. Furthermore, the team has deployed business intelligence (BI) tools that provide managers with much greater visibility into their teams’ traveling patterns. Business unit managers have the authority to balance the level of travel/entertainment budget within their overall operational budget and, using the BI tools, they can now easily identify opportunities to reduce travel for internal meetings as well as the use of business class, the main drivers for travel-related emissions. Product groups in the Puget Sound region are charged directly for their actual energy usage in research and development labs. |
Internal price on carbon: From July 2012 (the start of Microsoft FY13), we introduced an internal carbon fee chargeback model, administered through the finance group: business groups responsible for carbon emissions associated with their use of Microsoft datacenters, labs, and offices as well as business air travel are charged an internal fee to cover the cost to offset those emissions through investments in renewable energy, carbon offset community projects, sustainability funding (to drive climate-related energy and technology innovation), and track-and-report projects (to ensure transparency and accountability). In FY19 (reporting period), we announced that we will raise our internal carbon fee price to $15 per metric ton.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?
   Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

<table>
<thead>
<tr>
<th>Level of aggregation</th>
<th>Group of products</th>
</tr>
</thead>
</table>

Description of product/Group of products

Cloud computing services: All Microsoft services hosted in Microsoft datacenters—including Microsoft Azure, Microsoft 365, and Microsoft Teams—are low-carbon options because of the efficiency of our datacenters versus on-premises computing and our use of renewable energy. Microsoft purchases renewable energy, and therefore emissions from our datacenters are far below industry averages and most customers’ on-premises situations. In addition, by outsourcing IT services to Microsoft cloud services instead of running those same services in their own datacenters, our customers can reduce their scope 2 emissions, assuming that they currently have either (1) no in-house equipment and decide to use Microsoft cloud services instead of purchasing new equipment or (2) in-house equipment and decide to downsize equipment and...
outsource the services to Microsoft. With the massive scale and multitenancy of our datacenters, we can run these services at greater efficiencies than a typical enterprise, so the energy use and emissions are not merely transferred to another source but reduced as well.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Low-carbon product and avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Evaluating the carbon-reducing impacts of ICT

**% revenue from low carbon product(s) in the reporting year**

**Comment**

The 2018 report “The carbon benefits of cloud computing” by Microsoft, in partnership with WSP, shows significant energy and carbon emissions reduction potential from the Microsoft Cloud when compared with on-premises datacenters. Specifically, the study compared four Microsoft cloud applications with their on-premises equivalents: Microsoft Azure Compute, Microsoft Azure Storage, Microsoft Exchange Online and Microsoft SharePoint Online. The results show that Microsoft cloud services are up to 93 percent more energy efficient than traditional enterprise datacenters, depending on the specific comparison being made. When taking into account Microsoft renewable energy purchases, Microsoft cloud services are up to 98 percent more carbon efficient. These savings are attributable to four key features of Microsoft cloud services: IT operational efficiency, IT equipment efficiency, datacenter infrastructure efficiency and renewable electricity. To conduct this study, we engaged WSP, a global consultancy with expertise in environmental and sustainability issues, to model the environmental impact of using Microsoft cloud services instead of on-premises deployments. Stanford University IT sustainability and computer energy expert Dr. Jonathan Koomey served as an in-depth technical reviewer. In January 2020, to support our customers in understanding the sustainability of the services we provide for them, we released the Microsoft Sustainability Calculator, a Power BI application for Azure enterprise customers that provides new insight into carbon emissions data associated with their Azure services. As our FY18 report indicated, migrating from traditional datacenters to cloud services significantly improves efficiencies; however, enterprises are now looking for additional insights into the carbon impact of their cloud workloads to help them make more sustainable computing decisions. For the first time, those responsible for reporting on and driving sustainability within their organizations will have the ability to quantify the carbon impact of each Azure subscription over a period of time and datacenter region, as well as see estimated carbon savings from running those workloads in Azure versus on-premises datacenters. Note that Microsoft revenue is reported at the business group level and so the specific revenue attributable to cloud computing services is not available.
<table>
<thead>
<tr>
<th>Level of aggregation</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description of product/Group of products</strong></td>
<td>Microsoft Teams: Microsoft Teams helps to reduce the need for travel by providing the means for individuals and companies to host online and video conferencing meetings for up to 250 people and online events for up to 10,000 people. By using the audio and video calling and online conferencing options to host meetings, people can avoid travel by car or even plane. Microsoft Teams also includes file collaboration and task tracking to enhance existing remote meeting options.</td>
</tr>
<tr>
<td><strong>Are these low-carbon product(s) or do they enable avoided emissions?</strong></td>
<td>Avoided emissions</td>
</tr>
<tr>
<td><strong>Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions</strong></td>
<td>Climate Bonds Taxonomy</td>
</tr>
<tr>
<td><strong>% revenue from low carbon product(s) in the reporting year</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Comment</strong></td>
<td>Microsoft Teams is included on the basis of the IT Solutions</td>
</tr>
</tbody>
</table>
LinkedIn offers a learning platform with online courses and skills training available to all of our 650 million members. This enables businesses and individuals to reduce their travel-related emissions by undertaking online learning alternatives. In addition, LinkedIn supports the transition to the green economy with a LinkedIn Learning path called “Stay Ahead in Sustainability and Green Building.” This learning path consists of seven courses on sustainable business, green building fundamentals, and eco-friendly design. The courses have been viewed by more than 100,000 people. This product is enabling people around the world to learn crucial skills to implement sustainable practices in their roles to help reduce the emissions associated with their building design and construction. In September/October 2019, LinkedIn unlocked access to the full sustainability learning path for all 600 million members during the Global Climate Action Summit.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Climate Bonds Taxonomy

% revenue from low carbon product(s) in the reporting year

Comment

LinkedIn is included on the basis of the IT Solutions | Connectivity category in the ICT section of the Climate Bonds Taxonomy, covering teleconferencing and telecommuting software and service. Note that Microsoft revenue is reported at the business group level and so the specific revenue attributable to the LinkedIn online learning platform is not available.

Level of aggregation

Group of products

Description of product/Group of products

We are innovating through Azure IoT (Internet of Things) solutions for energy and sustainability, including Energy Smart Buildings technology to automatically identify energy-draining faults in real time, distributed energy resource (DER) monitoring and optimization solutions, and a carbon emissions data solution to let customers see the carbon intensity of their energy mix from the grid in real time. We are continuing to build out solutions to allow customers to easily measure their own energy use and match this to the carbon emissions of the grid at that time, to get an
accurate picture of the carbon emissions either released or prevented resulting from their energy consumption or generation. An example is our 24x7 Hourly Renewables partnership with Vattenfall, which is powered by Azure.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Low-carbon product and avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Evaluating the carbon-reducing impacts of ICT

**% revenue from low carbon product(s) in the reporting year**

**Comment**

Microsoft’s carbon emissions data partner, WattTime (https://api.watttime.org), has continued to expand the regions across the world for which they provide emissions data. As soon as new regions are added, they become available in the Microsoft Carbon Emissions Data solution, enabling customers in those regions to see the emissions of their grids in real time and optimize their energy use to reduce the resultant emissions.

**Level of aggregation**

Group of products

**Description of product/Group of products**

Microsoft is an EPEAT Participating Manufacturer for personal computers. Surface Pro 6, Surface Pro 5, Surface Pro 4, Surface Go, Surface Book 2, Surface Book, Surface Studio, Surface Laptop 2, and Surface Laptop are ENERGY STAR certified and listed on the EPEAT (2009) registry at Gold level. On the EPEAT (2018) registry, Surface Pro 5, Surface Go, and Surface Book 2 are listed at Bronze level; Surface Pro 6, Surface Pro 7, Surface Pro X, Surface Go 2, Surface Laptop 3, and Surface Book 3 are listed at Silver level. The EPEAT ratings are used by and available online to our customers to enable purchasing decisions based on product sustainability. We publish additional information on GHG emissions in our product Eco Profiles, which can be downloaded by the public. We also have a science-based GHG emissions reduction target to further reduce impact, as well as measuring and communicating the sustainability of our products through other environmental
leadership standards and eco-certification programs, such as ENERGY STAR, and a voluntary agreement (Self-regulatory Initiative to Further Improve the Energy Efficiency of Games Consoles, Version 2.5). All our Surface computers are ENERGY STAR certified in the US.

**Are these low-carbon product(s) or do they enable avoided emissions?**
- Low-carbon product and avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**
- Climate Bonds Taxonomy

**% revenue from low carbon product(s) in the reporting year**

**Comment**
- Our device work is included on the basis of the IT Solutions | Supporting infrastructure category in the ICT section of the Climate Bonds Taxonomy, covering hardware and manufacture of hardware. Note that Microsoft revenue is reported at the business group level and so the specific revenue attributable to Microsoft hardware devices is not available.

**C5. Emissions methodology**

**C5.1**

**(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).**

**Scope 1**

<table>
<thead>
<tr>
<th><strong>Base year start</strong></th>
<th><strong>July 1, 2012</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base year end</strong></td>
<td><strong>June 30, 2013</strong></td>
</tr>
</tbody>
</table>
Base year emissions (metric tons CO2e)

100,561

Comment

Scope 2 (location-based)

Base year start
July 1, 2012

Base year end
June 30, 2013

Base year emissions (metric tons CO2e)
1,430,648

Comment

Scope 2 (market-based)

Base year start
July 1, 2012

Base year end
June 30, 2013

Base year emissions (metric tons CO2e)
819,582

Comment
C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.


C6. Emissions data

C6.1

(C6.1) What were your organization’s gross global Scope 1 emissions in metric tons CO2e?

<table>
<thead>
<tr>
<th>Reporting year</th>
<th>Gross global Scope 1 emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>113,412</td>
</tr>
</tbody>
</table>

Comment

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
C6.3

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

Reporting year

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 2, location-based</td>
<td>3,556,553</td>
</tr>
<tr>
<td>Scope 2, market-based (if applicable)</td>
<td>275,375</td>
</tr>
</tbody>
</table>

Comment

Microsoft is committed to global renewable electricity procurement through power purchase agreements (PPAs) and other contracting instruments and as a result has low-carbon operations in scope 2 market-based emissions.

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?

No

C6.5

(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

**Metric tonnes CO2e**

4,200,000

**Emissions calculation methodology**

Microsoft uses our suppliers' CDP Supply Chain responses to determine individualized scope 1 + scope 2 + upstream scope 3 emission factors (tCO2e/$ revenue) for each responding company. Corporate-wide expense data for all company divisions is obtained from Finance. Microsoft estimates emissions from CDP Supply Chain respondents by multiplying the CDP-derived factor by annual spend with the supplier. All other spend is mapped to corresponding industry sectors and then multiplied by cradle-to-gate emission factors by sector from UK Defra's "UK Defra, Table 13 – Indirect emissions from the supply chain. March 2014"—updated per the latest inflation and currency conversion rates. Sectors already included in scope 1 and scope 2 (such as electricity purchases) and other scope 3 categories (such as capital goods) were removed to prevent double counting. Global warming potentials (GWPs) are from the IPCC Second Assessment Report, 100-year average.

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

50

**Please explain**

**Capital goods**

**Evaluation status**

Relevant, calculated

**Metric tonnes CO2e**

2,100,000

**Emissions calculation methodology**

Microsoft uses our suppliers' CDP Supply Chain responses to determine individualized scope 1 + scope 2 + upstream scope 3 emission factors (tCO2e/$ revenue) for each responding company. Corporate-wide expense data for all company divisions is obtained from Finance. Microsoft estimates emissions from CDP Supply Chain respondents by multiplying the CDP-derived factor by annual spend with the supplier. All other...
spend is mapped to corresponding industry sectors and then multiplied by cradle-to-gate emission factors by sector from UK Defra’s “UK Defra, Table 13 – Indirect emissions from the supply chain. March 2014”—updated per the latest inflation and currency conversion rates. Global warming potentials (GWPs) are from the IPCC Second Assessment Report, 100-year average.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
61

Please explain

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

Evaluation status
Relevant, calculated

Metric tonnes CO2e
170,000

Emissions calculation methodology
For the first time in 2019, Microsoft is reporting this category as calculated using the ‘market-based’ approach, which includes Microsoft’s investment in renewable electricity. Fuel- and energy-related activities (not included in scope 1 or 2) include three emission sources. First, upstream emissions of purchased electricity were calculated by multiplying electricity use by emission factors from lifecycle analysis tools for the US and UK Defra 2015 Guidelines for non-US countries. Factors for upstream emissions resulting from global renewable electricity generation are from lifecycle assessment tools. Second, fuel consumption was multiplied by emission factors from the GREET and Ecoinvent lifecycle analysis tools. And third, transmission and distribution (T&D) losses (by energy use type) were multiplied by emission factors from the EPA’s eGRID2016 database for the United States and from UK Defra’s 2015 guidelines for other countries. Global warming potentials (GWPs) are from the IPCC Fourth Assessment Report, 100-year average.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Upstream transportation and distribution

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
60,000

**Emissions calculation methodology**
Microsoft uses our suppliers' CDP Supply Chain responses to determine individualized scope 1 + scope 2 + upstream scope 3 emission factors ($CO2e/$ revenue) for each responding company. Corporate-wide expense data for all company divisions is obtained from Finance. Microsoft estimates emissions from CDP Supply Chain respondents by multiplying the CDP-derived factor by annual spend with the supplier. All other spend is mapped to corresponding industry sectors and then multiplied by cradle-to-gate emission factors by sector from UK Defra's "UK Defra, Table 13 – Indirect emissions from the supply chain. March 2014"—updated per the latest inflation and currency conversion rates. Global warming potentials (GWPs) are from the IPCC Second Assessment Report, 100-year average.

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
24

**Please explain**

Waste generated in operations

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
1,200

**Emissions calculation methodology**
The waste figure represents emissions from waste disposed via landfilling or incineration and does not include waste from recycling or compost. This data includes the Microsoft Puget Sound headquarters campus, US field campuses, and many other sites, representing more than 50 percent of the Microsoft global real estate portfolio. Emissions from waste are calculated using methodologies and emission factors from the EPA’s Waste Reduction Model (WARM), version 14, 2016. This model bases its emissions calculations on a lifecycle analysis, including emissions from the long-term decomposition of waste in a landfill or from upstream sources/sinks. Global warming potentials (GWPs) are from the IPCC Fourth Assessment Report, 100-year average.

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

0%

**Please explain**

**Business travel**

**Evaluation status**

Relevant, calculated

**Metric tonnes CO2e**

392,557

**Emissions calculation methodology**

Included in this category are emissions from commercial air travel. Microsoft Corporate Travel provides flight-level airport codes and cabin class data. The airport codes are used to calculate distances to determine whether the flights were short, medium, or long haul. The distance thresholds and cabin class are used with appropriate emission factors to calculate CO2e (CO2, CH4, and N2O emission factors source: 2018 Guidelines to Defra/DECC's GHG Conversion Factors for Company Reporting). Global warming potentials (GWPs) are from the IPCC Fourth Assessment Report, 100-year average.

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

100%

**Please explain**
Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
395,000

Emissions calculation methodology
This category captures emissions from commuting by all employees and contractors that work in Microsoft buildings. It does not include commuting in shuttles and buses owned or operated by Microsoft because these emissions are already included in the Microsoft scope 1 inventory. A survey was conducted in May 2019 to capture detailed commuting habits from employees and vendors at the Microsoft Puget Sound campus, representing roughly 36 percent of global Microsoft headcount. The survey is conducted annually. The results of this survey were scaled to estimate global commuting emissions for Microsoft. CO2 emission rates for passenger vehicles (single occupancy vehicle [SOV] and carpool) are based on fuel consumption and miles travelled. A weighted average fuel economy was derived using the 2012 EPA Fuel Economy Trends Report 1975–2012, which provides combined fuel economy for cars and trucks by year, and a set of car and truck age fractions provided by the Puget Sound Regional Council. This data was used to develop a weighted average fuel economy for the Puget Sound area. Emission factors are derived from the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2010, Annex 2 (Methodology for estimating CO2 emissions from fossil fuel combustion). CO2 rates per passenger mile are based on Federal Transit Administration, 2010 (Public Transportation’s Role in Responding to Climate Change, US DOT, Federal Transit Administration, January, 2010). Global warming potentials (GWPs) are from the IPCC Fourth Assessment Report, 100-year average.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
30

Please explain

Upstream leased assets
Evaluation status
Not relevant, explanation provided

Please explain
Microsoft includes leased assets in our scope 1 and scope 2 emissions reporting boundary.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
53,000

Emissions calculation methodology
Included in this category are the emissions from transporting and warehousing Microsoft devices sold in FY19 (the reporting period) (including, but not limited to, Xbox devices, Microsoft Surface devices, keyboards, mice, and other peripherals) from Microsoft manufacturing sites to retailers and customers. Calculations are based on standard assumptions of distance between retailers and their distribution centers and warehouse floorspace from an MWPVL analysis of Walmart’s distribution center network. Assumptions about the energy intensity of warehouses come from the US Energy Information Administration (EIA)’s Commercial Buildings Energy Consumption Survey (2012). Emission factors for shipping come from the GaBi database. Global warming potentials (GWPs) are from the IPCC Fourth Assessment Report, 100-year average.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Processing of sold products

Evaluation status
Not relevant, explanation provided

Please explain
Microsoft did not have any physical intermediate products in the reporting year.

Use of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
3,874,000

Emissions calculation methodology
Included in this category is the lifetime electricity use of Microsoft devices sold in FY19 (the reporting period) including, but not limited to, Xbox devices, Surface devices, keyboards, mice, and other peripherals. Lifetime electricity use per device is calculated based on standard product-use assumptions as included in our ISO 14040– and ISO 14044–compliant lifecycle analyses. Sales geography is used to determine the electricity emission factor used to calculate emissions. Global warming potentials (GWPs) are from the IPCC Fourth Assessment Report, 100-year average.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

End of life treatment of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
76,000
Emissions calculation methodology

Included in this category is the end-of-life treatment of Microsoft devices sold in FY19 (the reporting period) including, but not limited to, Xbox devices, Surface devices, keyboards, mice, and other peripherals. End-of-life emissions for each product are based on modeling within our ISO 14040– and ISO 14044–compliant lifecycle analyses. To generate a conservative estimate for this category, it is assumed that all devices are sent to landfills at the end of their useful life. Global warming potentials (GWPs) are from the IPCC Fourth Assessment Report, 100-year average.

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

0

Please explain

Downstream leased assets

Evaluation status

Relevant, calculated

Metric tonnes CO2e

770

Emissions calculation methodology

Emissions associated with sublets are calculated using the intensities derived from data collected for the primary leased space (for example, kWh/SF) and prorated for the square footage of the sublet space. In this way, it is assumed that the emissions intensities of the leased spaces are the same as the overall buildings in which they reside. Estimated refrigerants are calculated using the same methodology and intensity as used to calculate refrigerant intensities for assets occupied by Microsoft. Electricity emission factors used are those appropriate to each location, as utilized in our scope 1 and scope 2 location-based inventory. Global warming potentials (GWPs) are from the IPCC Fourth Assessment Report, 100-year average.

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

0
Please explain

Franchises

Evaluation status
Not relevant, explanation provided

Please explain
Microsoft did not operate franchises in the reporting year.

Investments

Evaluation status
Not relevant, explanation provided

Please explain
Joint ventures, actively managed investments, and direct equity investments totaled less than 2 percent of Microsoft market capitalization at the end of the reporting period. Microsoft has not engaged in the long-term financing of projects and the proceeds for each debt issuance have been for general corporate purposes.

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status
Please explain

C6.7

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

No

C6.10

(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
0.000003089

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
388,787

Metric denominator
unit total revenue

Metric denominator: Unit total
125,843,000,000

Scope 2 figure used
Market-based

% change from previous year
25
Direction of change
   Increased

Reason for change
   Scope 1 + scope 2 market-based emissions increased by 42 percent from FY18 to FY19 (the reporting period), while revenue increased by 14 percent.

Intensity figure
   2.7

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
   388,787

Metric denominator
   full time equivalent (FTE) employee

Metric denominator: Unit total
   144,000

Scope 2 figure used
   Market-based

% change from previous year
   29

Direction of change
   Increased

Reason for change
   Scope 1 + scope 2 market-based emissions increased by 42 percent from FY18 to FY19 (the reporting period), while FTEs increased by 10 percent.
C7. Emissions breakdowns

C7.1

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

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

<table>
<thead>
<tr>
<th>Greenhouse gas</th>
<th>Scope 1 emissions (metric tons of CO2e)</th>
<th>GWP Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>91,057</td>
<td>IPCC Fourth Assessment Report (AR4 - 100 year)</td>
</tr>
<tr>
<td>CH4</td>
<td>41</td>
<td>IPCC Fourth Assessment Report (AR4 - 100 year)</td>
</tr>
<tr>
<td>N2O</td>
<td>238</td>
<td>IPCC Fourth Assessment Report (AR4 - 100 year)</td>
</tr>
<tr>
<td>HFCs</td>
<td>22,044</td>
<td>IPCC Fourth Assessment Report (AR4 - 100 year)</td>
</tr>
<tr>
<td>SF6</td>
<td>32</td>
<td>IPCC Fourth Assessment Report (AR4 - 100 year)</td>
</tr>
</tbody>
</table>

C7.2

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

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia Pacific (or JAPA)</td>
<td>5,559</td>
</tr>
<tr>
<td>Europe, Middle East and Africa (EMEA)</td>
<td>60,578</td>
</tr>
<tr>
<td>Latin America (LATAM)</td>
<td>3,274</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Datacenter</td>
<td>34,851</td>
</tr>
<tr>
<td>Ground transportation</td>
<td>45,849</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>237</td>
</tr>
<tr>
<td>Office</td>
<td>23,583</td>
</tr>
<tr>
<td>Travel</td>
<td>8,892</td>
</tr>
</tbody>
</table>

C7.5

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

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 2, location-based (metric tons CO2e)</th>
<th>Scope 2, market-based (metric tons CO2e)</th>
<th>Purchased and consumed electricity, heat, steam or cooling (MWh)</th>
<th>Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia Pacific (or JAPA)</td>
<td>691,727</td>
<td>266,680</td>
<td>1,073,477</td>
<td>627,572</td>
</tr>
<tr>
<td>Europe, Middle East and Africa (EMEA)</td>
<td>681,378</td>
<td>7,463</td>
<td>1,671,818</td>
<td>1,644,252</td>
</tr>
</tbody>
</table>
**C7.6**

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By activity

**C7.6c**

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Scope 2, location-based (metric tons CO2e)</th>
<th>Scope 2, market-based (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Datacenter</td>
<td>3,189,621</td>
<td>260,752</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>10,086</td>
<td>0</td>
</tr>
<tr>
<td>Office</td>
<td>356,846</td>
<td>14,623</td>
</tr>
</tbody>
</table>

**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 renewable energy consumption | Decreased | 167 |
| Change in emissions (metric tons CO2e) | Emissions value (percentage) | Please explain calculation |
| Change in renewable energy consumption | 457,036 | In FY19 (the reporting period), because of datacenter growth and our 100 percent renewable electricity commitment, we made a substantial incremental investment in energy attribute certificates (EACs), power purchase agreements (PPAs), and other contracting instruments, resulting in the increased avoidance of 457,036 mtCO2e in scope 2 emissions over the previous year. This incremental emission avoidance is larger than last year’s scope 1 + scope 2 market-based emissions, leading to a high reduction percentage. FY18 scope 1 + scope 2 market-based emissions were 273,791 mtCO2e. We arrived at 167 percent reduction by dividing the reductions due to renewable energy purchases by the FY18 gross emissions [(457,036/273,791)*100%=167%]. |
| Other emissions reduction activities | Decreased | 3 |
| Other emissions reduction activities | 7,010 | We have decreased our scope 1 and scope 2 emissions related to our operations—including offices, datacenters, and development labs—through emissions reduction activities. For our office campuses, these activities range from energy efficiency investments—such as running an Energy Smart Buildings (ESB) program and investing in efficient building systems, including HVAC (heating, ventilation, and air conditioning) systems, lighting, small power and office equipment, and insulation—to a solar photovoltaic installation, to reducing the emissions associated with our company vehicles. We are working to make our datacenters energy efficient, such as with advanced cooling systems, including outside air and adiabatic cooling where possible. In FY19 (the reporting period), we reduced our scope 1 and 2 emissions by 7,010 mtCO2e through these internal energy efficiency projects. FY18 scope 1 + scope 2 market-based emissions were 273,791 mtCO2e. We arrived at 3 percent reduction by dividing the reductions due to other emissions reduction activities by the FY18 gross emissions [(7,010/273,791)*100%=3%]. |
Because of significant datacenter growth in FY19 (the reporting period), our overall scope 1 + scope 2 emissions increased relative to FY18 emissions. We arrived at 36 percent by dividing the increase by the FY18 gross emissions \[\frac{114,996}{273,791} \times 100\% = 42\%\].

(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.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Indicate whether your organization undertook this energy-related activity in the reporting year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel (excluding feedstocks)</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired heat</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired cooling</td>
<td>Yes</td>
</tr>
<tr>
<td>Generation of electricity, heat, steam, or cooling</td>
<td>Yes</td>
</tr>
</tbody>
</table>

C8.2a

(C8.2a) Report your organization’s energy consumption totals (excluding feedstocks) in MWh.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Heating value</th>
<th>MWh from renewable sources</th>
<th>MWh from non-renewable sources</th>
<th>Total (renewable and non-renewable) MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel (excluding feedstock)</td>
<td>HHV (higher heating value)</td>
<td>0</td>
<td>421,245</td>
<td>421,245</td>
</tr>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>8,291,028</td>
<td>450,192</td>
<td>8,741,220</td>
<td></td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>0</td>
<td>12,002</td>
<td>12,002</td>
<td></td>
</tr>
<tr>
<td>Consumption of purchased or acquired cooling</td>
<td>0</td>
<td>52,937</td>
<td>52,937</td>
<td></td>
</tr>
<tr>
<td>Consumption of self-generated non-fuel renewable energy</td>
<td>587</td>
<td></td>
<td>587</td>
<td></td>
</tr>
<tr>
<td>Total energy consumption</td>
<td>8,291,615</td>
<td>936,376</td>
<td>9,227,991</td>
<td></td>
</tr>
</tbody>
</table>

C8.2b

(C8.2b) Select the applications of your organization’s consumption of fuel.

<table>
<thead>
<tr>
<th>Application</th>
<th>Indicate whether your organization undertakes this fuel application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel for the generation of electricity</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of fuel for the generation of heat</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of fuel for the generation of steam</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of fuel for the generation of cooling</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of fuel for co-generation or tri-generation</td>
<td>No</td>
</tr>
</tbody>
</table>

C8.2c

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

| Fuels (excluding feedstocks) | |
|-------------------------------||
Diesel

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

123,363

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

0

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

123,363

**Emission factor**

0.25

**Unit**

metric tons CO2e per MWh

**Emissions factor source**


**Comment**

---

**Fuels (excluding feedstocks)**

Fuel Oil Number 2
Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
10,947

MWh fuel consumed for self-generation of electricity
10,947

MWh fuel consumed for self-generation of heat
0

Emission factor
0.25

Unit
metric tons CO2e per MWh

Emissions factor source

Comment

Fuels (excluding feedstocks)
Fuel Oil Number 6

Heating value
HHV (higher heating value)
Total fuel MWh consumed by the organization
220

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
220

Emission factor
0.26

Unit
metric tons CO2e per MWh

Emissions factor source

Comment

Fuels (excluding feedstocks)
Jet Kerosene

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
35,755
MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
35,755

Emission factor
0.25

Unit
metric tons CO2e per MWh

Emissions factor source

Comment

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
11,682

MWh fuel consumed for self-generation of electricity
0
MWh fuel consumed for self-generation of heat
11,682

Emission factor
0.21

Unit
metric tons CO2e per MWh

Emissions factor source

Comment

------------------------------

Fuels (excluding feedstocks)
Motor Gasoline

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
42,751

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
42,751
Emission factor
0.24

Unit
metric tons CO2e per MWh

Emissions factor source

Comment

------------------------------------------------------------

Fuels (excluding feedstocks)
     Natural Gas

Heating value
     HHV (higher heating value)

Total fuel MWh consumed by the organization
     196,528

MWh fuel consumed for self-generation of electricity
     99,511

MWh fuel consumed for self-generation of heat
     97,016

Emission factor
     0.18
Unit
metric tons CO2e per MWh

Emissions factor source

Comment

C8.2d

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

<table>
<thead>
<tr>
<th></th>
<th>Total Gross generation (MWh)</th>
<th>Generation that is consumed by the organization (MWh)</th>
<th>Gross generation from renewable sources (MWh)</th>
<th>Generation from renewable sources that is consumed by the organization (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>39,248</td>
<td>39,248</td>
<td>587</td>
<td>587</td>
</tr>
<tr>
<td>Heat</td>
<td>77,613</td>
<td>77,613</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Steam</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cooling</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.
Sourcing method
Power purchase agreement (PPA) with a grid-connected generator with energy attribute certificates

Low-carbon technology type
Wind

Country/region of consumption of low-carbon electricity, heat, steam or cooling
North America

MWh consumed accounted for at a zero emission factor
1,595,753

Comment
Starting in FY15, Microsoft entered into a virtual PPA with Enbridge LLC to procure 100 percent wind energy in the state of Texas. In FY16, an additional PPA, signed with EDF Renewable Energy, came online to deliver 100 percent wind energy in the state of Illinois. In FY17, an additional PPA, signed with BlackHills, came online to deliver 100 percent wind energy in the state of Wyoming. In FY18 we started receiving renewable energy certificates from the Bloom Wind project in Kansas. Securing PPAs in this way is part of the comprehensive Microsoft strategy to procure 100 percent green power, and Microsoft is currently developing additional, similar PPAs.

Sourcing method
Power purchase agreement (PPA) with a grid-connected generator with energy attribute certificates

Low-carbon technology type
Wind

Country/region of consumption of low-carbon electricity, heat, steam or cooling
Europe

MWh consumed accounted for at a zero emission factor
88,713
Comment
In FY19 (the reporting period), Microsoft began receiving 100 percent wind energy from the Tullahennel wind farm in County Kerry, Ireland, as part of a PPA signed with GE. Securing PPAs in this way is part of the comprehensive Microsoft strategy to procure 100 percent green power, and Microsoft is currently developing additional, similar PPAs.

Sourcing method
Power purchase agreement (PPA) with a grid-connected generator with energy attribute certificates

Low-carbon technology type
Solar

Country/region of consumption of low-carbon electricity, heat, steam or cooling
North America

MWh consumed accounted for at a zero emission factor
34,625

Comment
In FY18 Microsoft began receiving renewable energy certificates from the Remington solar project in Virginia. Securing PPAs in this way is part of the comprehensive Microsoft strategy to procure 100 percent green power, and Microsoft is currently developing additional, similar PPAs.

Sourcing method
Power purchase agreement (PPA) with a grid-connected generator with energy attribute certificates

Low-carbon technology type
Hydropower

Country/region of consumption of low-carbon electricity, heat, steam or cooling
North America
MWh consumed accounted for at a zero emission factor
76,056

Comment
In FY19 (the reporting period), our agreement with Chelan PUD went into effect to secure incremental hydro green power for our Puget Sound campus. Securing PPAs in this way is part of the comprehensive Microsoft strategy to procure 100 percent green power, and Microsoft is currently developing additional, similar PPAs.

Sourcing method
Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type
Wind

Country/region of consumption of low-carbon electricity, heat, steam or cooling
North America

MWh consumed accounted for at a zero emission factor
4,204,616

Comment
In the United States and Canada, we are supplied with 100 percent renewable green power through the purchase of RECs. All RECs are Green-e certified.

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Low-carbon energy mix
**Country/region of consumption of low-carbon electricity, heat, steam or cooling**  
North America

**MWh consumed accounted for at a zero emission factor**  
17,113

**Comment**  
Our LinkedIn offices in San Francisco and Silicon Valley receive 100 percent green power via their utilities: CleanPower SF and Silicon Valley Clean Energy, respectively.

**Sourcing method**  
Unbundled energy attribute certificates, Guarantees of Origin

**Low-carbon technology type**  
Wind

**Country/region of consumption of low-carbon electricity, heat, steam or cooling**  
Europe

**MWh consumed accounted for at a zero emission factor**  
914,097

**Comment**  
In the European Union (EU), we are supplied with 100 percent renewable green power through the purchase of guarantees of origin.

**Sourcing method**  
Unbundled energy attribute certificates, Guarantees of Origin

**Low-carbon technology type**
Solar

Country/region of consumption of low-carbon electricity, heat, steam or cooling
Europe

MWh consumed accounted for at a zero emission factor
2,000

Comment
In FY19 (the reporting period), Microsoft participated in a blockchain pilot transaction to purchase guarantees of origin from the Appelscha Solar Park in the Netherlands.

Sourcing method
Unbundled energy attribute certificates, Guarantees of Origin

Low-carbon technology type
Geothermal

Country/region of consumption of low-carbon electricity, heat, steam or cooling
Europe

MWh consumed accounted for at a zero emission factor
414,419

Comment
In the European Union (EU), we are supplied with 100 percent renewable green power through the purchase of guarantees of origin.

Sourcing method
Unbundled energy attribute certificates, International REC Standard (I-RECs)
Low-carbon technology type
Low-carbon energy mix

Country/region of consumption of low-carbon electricity, heat, steam or cooling
Other, please specify
Asia Pacific, Africa, Latin America, and Middle East

MWh consumed accounted for at a zero emission factor
458,097

Comment
In Brazil, Central America, Chile, China, East Africa, India, Indonesia, Israel, Malaysia, Mexico, the Philippines, South Africa, Thailand, Turkey, the United Arab Emirates (UAE), and Vietnam, we are supplied with 100 percent renewable green power through the purchase of I-RECs instruments.

Sourcing method
Unbundled energy attribute certificates, other - please specify
PowerPlus instruments

Low-carbon technology type
Wind

Country/region of consumption of low-carbon electricity, heat, steam or cooling
Asia Pacific (or JAPA)

MWh consumed accounted for at a zero emission factor
177,076

Comment
In South Korea, we are supplied with 100 percent renewable green power through the purchase of PowerPlus instruments.
**Sourcing method**
Unbundled energy attribute certificates, other - please specify
J-credits

**Low-carbon technology type**
Solar

**Country/region of consumption of low-carbon electricity, heat, steam or cooling**
Asia Pacific (or JAPA)

**MWh consumed accounted for at a zero emission factor**
132,584

**Comment**
In Japan, we are supplied with 100 percent renewable green power through the purchase of Japanese J-credits.

---

**Sourcing method**
Unbundled energy attribute certificates, other - please specify
REGOs

**Low-carbon technology type**
Wind

**Country/region of consumption of low-carbon electricity, heat, steam or cooling**
Europe

**MWh consumed accounted for at a zero emission factor**
173,645
Comment
In the United Kingdom, we are supplied with 100 percent renewable green power through the purchase of renewable energy guarantees of origin (REGOs).

Sourcing method
Unbundled energy attribute certificates, other - please specify
GoldPower instruments

Low-carbon technology type
Wind

Country/region of consumption of low-carbon electricity, heat, steam or cooling
Asia Pacific (or JAPA)

MWh consumed accounted for at a zero emission factor
2,234

Comment
In Taiwan, we are supplied with renewable green power through the purchase of GoldPower instruments.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.
C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

<table>
<thead>
<tr>
<th>Scope</th>
<th>Verification/assurance status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1</td>
<td>Third-party verification or assurance process in place</td>
</tr>
<tr>
<td>Scope 2 (location-based or market-based)</td>
<td>Third-party verification or assurance process in place</td>
</tr>
<tr>
<td>Scope 3</td>
<td>Third-party verification or assurance process in place</td>
</tr>
</tbody>
</table>

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

- **Verification or assurance cycle in place**
  - Annual process

- **Status in the current reporting year**
  - Complete

- **Type of verification or assurance**
  - Limited assurance

- **Attach the statement**
C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

---

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

Page/ section reference
1

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

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


Page/ section reference
1

Relevant standard
ISO14064-3
Proportion of reported emissions verified (%)  
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

---

Scope 3 category  
Scope 3 (upstream & downstream)

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  

Page/section reference  
1

Relevant standard  
ISO14064-3
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?

<table>
<thead>
<tr>
<th>Disclosure module verification relates to</th>
<th>Data verified</th>
<th>Verification standard</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4. Targets and performance</td>
<td>Progress against emissions reduction target</td>
<td>ISO14064-3</td>
<td>Verification of carbon neutral commitment, which includes verification of emissions reductions from carbon offset purchases in the reporting year as outlined in question C4.1a (Abs1).</td>
</tr>
<tr>
<td>C4. Targets and performance</td>
<td>Other, please specify Progress against renewable energy target</td>
<td>ISO14064-3</td>
<td>Verification of global electricity consumption and renewable energy purchases equivalent to global electricity consumption, in support of the Microsoft 100 percent renewable electricity target, as outlined in question C4.2 (Low1).</td>
</tr>
<tr>
<td>C4. Targets and performance</td>
<td>Other, please specify Environmental management system (EMS) for the Experiences + Devices Group (E+D)</td>
<td>ISO 14001</td>
<td>Third-party verification of the EMS for E+D Devices through ISO 14001 certification. The EMS includes targets that impact GHG emissions.</td>
</tr>
</tbody>
</table>
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.

- Beijing pilot ETS
- Other ETS, please specify
- UK Carbon Reduction Commitment (CRC) Energy Efficiency Scheme

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

<table>
<thead>
<tr>
<th>Beijng pilot ETS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>% of Scope 1 emissions covered by the ETS</strong></td>
</tr>
<tr>
<td><strong>% of Scope 2 emissions covered by the ETS</strong></td>
</tr>
<tr>
<td><strong>Period start date</strong></td>
</tr>
<tr>
<td><strong>Period end date</strong></td>
</tr>
</tbody>
</table>
Allowances allocated
24,162

Allowances purchased
17,692

Verified Scope 1 emissions in metric tons CO2e
274

Verified Scope 2 emissions in metric tons CO2e
17,418

Details of ownership
Facilities we own and operate

Comment
The verified emissions provided include both the scope 1 and the scope 2 emissions taxed under this scheme. Ninety-nine percent of the 17,692 mtCO2e of emissions covered under this trading scheme result from electricity consumption and are based on scope 2 location-based accounting.

Other ETS, please specify

% of Scope 1 emissions covered by the ETS
0.7

% of Scope 2 emissions covered by the ETS
0.1

Period start date
January 1, 2019

Period end date
December 31, 2019
Allowances allocated
3,607

Allowances purchased
3,607

Verified Scope 1 emissions in metric tons CO2e
785

Verified Scope 2 emissions in metric tons CO2e
2,822

Details of ownership
Other, please specify

Participation is based on direct payment of utility bills, not building ownership. This applies to multiple UK sites.

Comment
UK Carbon Reduction Commitment (CRC) Energy Efficiency Scheme. The verified emissions provided include both the scope 1 and the scope 2 emissions taxed under this scheme. Seventy-eight percent of the 3,607 mtCO2e of emissions covered under this trading scheme result from electricity consumption and are based on scope 2 location-based accounting.

C11.1d

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

Microsoft's strategy for complying with the Beijing pilot ETS is to stay under the cap by optimizing operations and pursuing progressive energy conservation measures. For example, in FY19 (the reporting period) we applied this strategy by actively improving the efficiency of our operations by retrofitting lighting in parking lot areas with light-emitting diodes (LEDs), optimizing operation of and shutting down part of the computer room air conditioning (CRAC) system, reducing HVAC demand by turning on free cooling operating mode in winter, eliminating energy waste by installing a split air conditioner to replace an on-campus chiller, adding variable frequency drives (VFDs) to filter pumps, and connecting building management systems (BMSs) to the Energy Smart Buildings (ESB) program to further monitor building systems. We measure and monitor our emissions to ensure that we
have not exceeded the limit. Going forward, to continue to apply our efficiency strategy, we will evaluate on-site renewable energy, apply more clean energy, and work with our employees to further enhance waste management.

Our strategy for complying with the UK Carbon Reduction Commitment (CRC) Energy Efficiency Scheme is to actively work to reduce carbon emissions from our UK operations as well as to inventory all carbon emissions from those operations for the purposes of reporting (both in compliance with the scheme and in support of companywide emissions disclosure). For example, in FY19 we applied this strategy at the Reading, UK, campus by continuing to adjust HVAC controls and timers and optimizing free cooling. We tracked and reported 3,607 mtCO2e and paid the corresponding costs.

Microsoft has an internal carbon fee that we use to reduce carbon emissions and fund initiatives that contribute to our carbon commitments.

C11.2

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

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

<table>
<thead>
<tr>
<th>Credit origination or credit purchase</th>
<th>Credit purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project type</td>
<td>Forests</td>
</tr>
<tr>
<td>Project identification</td>
<td>Darkwoods Forest Carbon</td>
</tr>
<tr>
<td>Verified to which standard</td>
<td>Other, please specify VCS, CCB</td>
</tr>
</tbody>
</table>
Number of credits (metric tonnes CO2e)
372,319

Number of credits (metric tonnes CO2e): Risk adjusted volume
372,319

Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

Credit origination or credit purchase
Credit purchase

Project type
Energy efficiency: households

Project identification
Guatemala Water Treatment and Cookstoves

Verified to which standard
Gold Standard

Number of credits (metric tonnes CO2e)
18,000

Number of credits (metric tonnes CO2e): Risk adjusted volume
18,000

Credits cancelled
Yes

**Purpose, e.g. compliance**
- Voluntary Offsetting

---

**Credit origination or credit purchase**
- Credit purchase

**Project type**
- Solar

**Project identification**
- India Solar Water Heating

**Verified to which standard**
- Gold Standard

**Number of credits (metric tonnes CO2e)**
- 113,991

**Number of credits (metric tonnes CO2e): Risk adjusted volume**
- 113,991

**Credits cancelled**
- Yes

**Purpose, e.g. compliance**
- Voluntary Offsetting
Credit origination or credit purchase
Credit purchase

Project type
Forests

Project identification
Rimba Raya REDD+

Verified to which standard
Other, please specify
VCS, CCB

Number of credits (metric tonnes CO2e)
18,000

Number of credits (metric tonnes CO2e): Risk adjusted volume
18,000

Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

Credit origination or credit purchase
Credit purchase

Project type
Biomass energy
Project identification
Sichuan Household Biodigesters

Verified to which standard
Gold Standard

Number of credits (metric tonnes CO2e)
238,552

Number of credits (metric tonnes CO2e): Risk adjusted volume
238,552

Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

Credit origination or credit purchase
Credit purchase

Project type
Forests

Project identification
King County Forestry + Catalyst

Verified to which standard
VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO2e)
20,482

**Number of credits (metric tonnes CO2e): Risk adjusted volume**

20,482

**Credits cancelled**

Yes

**Purpose, e.g. compliance**

Voluntary Offsetting

**C11.3**

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

Yes

**C11.3a**

*(C11.3a) Provide details of how your organization uses an internal price on carbon.*

**Objective for implementing an internal carbon price**

- Change internal behavior
- Drive energy efficiency
- Drive low-carbon investment
- Identify and seize low-carbon opportunities
- Supplier engagement

**GHG Scope**

- Scope 1
- Scope 2
**Scope 3**

**Application**
Business units

**Actual price(s) used (Currency /metric ton)**
8.44

**Variance of price(s) used**
We reevaluate the carbon price annually. The carbon price reflects our total investment strategy to reduce our emissions, achieve our commitments and targets (including carbon neutrality), and drive innovation. The same price is used companywide, including 12 divisions that operate across more than 100 countries. It is set and administered through our corporate Environmental Sustainability team in partnership with the corporate Finance department. In FY20, our internal carbon fee was $15 per metric ton on scope 1 and 2 carbon emissions and partial scope 3 emissions (business air travel). In FY21, we will begin charging an additional carbon fee on all other scope 3 emissions, based on FY19 emissions.

**Type of internal carbon price**
Internal fee

**Impact & implication**
From July 2012, we began charging a fee based on the emissions associated with our operations. In FY19 (the reporting period), we applied the carbon fee to scope 1, scope 2, and scope 3 business air travel emissions across the company. As of FY21, the carbon fee will apply to all scope 1, scope 2, and scope 3 emissions, with the scope 3 fee starting at a lower amount and increasing to meet the scope 1, scope 2, and scope 3 business air travel fee over time. Our internal carbon fee isn’t a “shadow fee” that is calculated but not charged. Our fee is paid by each division in our business based on its carbon emissions, and the funds are used to pay for sustainability improvements. By charging business groups based on the emissions they generate, we help to drive efficiency initiatives and innovation across our business. The carbon fee affects investment decisions by providing an incentive, the financial justification, and in some cases the funds for climate-related energy and technology innovation. The fee also helps drive culture change by raising internal awareness of the environmental implications of our business and establishing an expectation for environmental and climate responsibility within the company. In FY19, the carbon fee fund was used to support investments in:

a. 8,741,807 MWh in renewable electricity globally (the US portion of which earned Microsoft the US EPA Green Power Partnership as the
number two US purchaser).

b. Offset purchases in five countries to reduce more than 750,000 mtCO2e, preserve forests, and grow the low-carbon economy in developing nations.
c. Technology innovation projects that formed the basis of our AI for Earth program.
d. More than 50 internal emissions reduction and energy efficiency projects.

C12. Engagement

C12.1

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

Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

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

<table>
<thead>
<tr>
<th>Type of engagement</th>
<th>Details of engagement</th>
<th>% of suppliers by number</th>
<th>% total procurement spend (direct and indirect)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information collection (understanding supplier behavior)</td>
<td>Collect climate change and carbon information at least annually from suppliers</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

---

---
51

% of supplier-related Scope 3 emissions as reported in C6.5
50

Rationale for the coverage of your engagement
In FY19 (the reporting period), we requested 511 of our top suppliers to participate in the CDP Supply Chain program (including those representing 90 percent of our direct/manufacturing supplier spend, as well as our top indirect/nonmanufacturing suppliers and tier 1 datacenter server suppliers; we also included LinkedIn suppliers in the program for the first time, engaging suppliers constituting more than half of LinkedIn annual spend). Of requested suppliers, 62 percent (including 100 percent of those contractually required to) responded. We selected these suppliers as they represent the majority of our spend and carbon impact from our supply chain.

Impact of engagement, including measures of success
We measure the success of our CDP Supply Chain program based on number and percentage of our suppliers that disclose emissions and set emissions reduction targets. In FY19 (the reporting period), our suppliers reported emissions reduction activities totaling about 29.3 million metric tons, for more than $1 billion in estimated annual savings. Of these suppliers, 40 percent report their operational emissions and 57 percent report some type of active target. We plan to evolve our strategic sourcing decision criteria to move beyond recognizing disclosure to CDP to rewarding suppliers’ CDP performance. Requesting suppliers to respond to CDP Supply Chain has enabled us to more accurately assess our scope 3 footprint and understand supplier behavior, which laid the foundation for Microsoft to set our first science-based scope 3 reduction target.

Comment
One of our goals is to improve the capabilities of our most strategic indirect/nonmanufacturing suppliers. To do this, we engage the CDP Supply Chain program to provide trainings to our suppliers on a variety of topics. This program provides the richest training that we have been able to identify to address the needs of suppliers of various sizes, industries, and geographies. LinkedIn also offered webinar training to engaged suppliers participating in CDP for the first time.

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

1

% total procurement spend (direct and indirect)

6

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

6

Rationale for the coverage of your engagement

We monitor the energy consumption and carbon emissions from major sources at our top five tier 1 direct/manufacturing suppliers in China (and have done so since approximately 2016). We collect information on energy consumption and carbon emissions from these suppliers on a monthly basis. We then compile and analyze the information to identify any signs of significant shifts in energy consumption that may require our attention (based on our understanding of the operations at these supplier sites). We selected these suppliers as they represent the majority of our spend in our manufacturing supply chain. This monitoring is conducted by our Experiences + Devices Group (E+D) and so is specific to direct/manufacturing suppliers.

Impact of engagement, including measures of success

These suppliers represent the most significant business in our manufacturing supply chain and, therefore, it is important that we track and understand the climate change impacts of their operations. We measure the success of this work in two ways: (1) whether the suppliers have established and work to continually improve the methods and systems that they use to track energy consumption and carbon emission information; and (2) whether the information provided by the suppliers is accurate and sufficient. This monitoring gives us a clear understanding of the current situation at our top manufacturing supplier sites and enables us to identify potential opportunities to minimize energy consumption and carbon emissions in our supply chain.

Comment
Type of engagement
Compliance & onboarding

Details of engagement
- Included climate change in supplier selection / management mechanism
- Code of conduct featuring climate change KPIs
- Climate change is integrated into supplier evaluation processes

% 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
Microsoft requires all of our suppliers to uphold the ethical and environmental practices outlined in our Supplier Code of Conduct. Beyond this, we focus the majority of our supplier compliance and onboarding efforts on our top suppliers, which represent the majority of our spend and carbon impact from our supply chain. In FY19 (the reporting period), we engaged suppliers representing more than 65 percent of our indirect/nonmanufacturing supplier spend and suppliers representing 95 percent of our direct/manufacturing supplier spend. We required top indirect suppliers to have a corporate social responsibility (CSR) program in place that aligns with global standards and industry-recognized frameworks and certifications; they are required to submit a publicly available CSR report based on the Global Reporting Initiative (GRI), report on GHG emissions through the CDP reporting platform, and assess their CSR performance. Those not meeting performance thresholds must improve their assessment by the next assessment cycle. For our top tier 1 direct/manufacturing suppliers (including all directly contracted hardware suppliers), we track supplier energy consumption and carbon emissions and look for opportunities to improve energy efficiency. We include CDP climate reporting as a contractual requirement for all tier 1 datacenter server suppliers and request the same from tier 2 suppliers. In FY18, LinkedIn added a Sustainability Questionnaire to its Global RFP Template that asks whether suppliers report to CDP for carbon and water, have carbon emission reduction targets, and have won any recent environmental awards; all new LinkedIn RFPs include this questionnaire. For ongoing supplier management, we systematically and proactively engage with our top suppliers to communicate
sustainability requirements. Our processes include (1) onboarding requirements (including the Supplier Code of Conduct and the Supplier Social and Environmental Accountability [SEA] Manual); (2) assessments, audits, and scorecards; (3) corrective action and validation (to resolve issues identified during the audits and assessments); and (4) continuous improvement (by routinely sharing experiences and best practices to help suppliers enhance their long-term sustainability capabilities).

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

Requiring suppliers to conform to the environmental standards in our Supplier Code of Conduct ensures we have a global baseline for our suppliers’ environmental performance. The Code of Conduct allows us to ask our suppliers to provide assurance regarding this conformance on an ongoing basis. We measure the success of our RFP and ongoing management processes regarding climate change in a variety of ways, including the number of suppliers that disclose emissions and set emissions reduction targets. For example, in FY19, more than 65 percent of our indirect/nonmanufacturing supplier spend was with suppliers who disclose their emissions through the CDP Supply Chain program. In FY19, we increased the number of indirect suppliers we invited to the CDP Supply Chain program threefold, with a goal to have 80 percent of spend with our indirect suppliers covered under the CDP Supply Chain program. Overall, we help ensure that our top indirect suppliers meet sustainability requirements by actively engaging with them through capability-building training. For our direct/manufacturing suppliers, we measure the climate-related success of the audit program by reduction in energy consumption and carbon emissions for our supplier sites; we review this semi-annually with selected top suppliers. For LinkedIn, the preliminary goal in adding the Sustainability Questionnaire to the RFP template was to signal to the market that environmental disclosure and performance are important; the next step will be to include supplier responses in the scoring for RFPs under evaluation. The ultimate measure of success will be the percentage of successful RFPs from suppliers that report to CDP; to support this, in FY19 LinkedIn joined the CDP Supply Chain program for the first time, engaging suppliers constituting more than half its annual supplier spend. LinkedIn also joined the Sustainable Purchasing Leadership Council in FY19. The Cloud Supply Chain Sustainability (CSCS) team within Azure Hardware Systems and Infrastructure (AHSI) added new terms to the Supplier SEA Manual (part of the supplier contractual documentation), with details of enhanced reporting requirements both to CDP and for more primary data and metrics across a range of areas, such as product materials, transportation, packaging, and water.

**Comment**

---

**Type of engagement**

Engagement & incentivization (changing supplier behavior)
Details of engagement

Offer financial incentives for suppliers who reduce your operational emissions (Scopes 1 & 2)

% of suppliers by number

1

% total procurement spend (direct and indirect)

1

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

1

Rationale for the coverage of your engagement

Initiated in FY18, the Microsoft Real Estate & Security (RE&S) business unit revised tier 1 facilities management (FM) service provider contracts to incorporate monetary incentives and key performance indicators (KPIs) for sustainability. We have focused on these service providers because together these contracts dictate operations for the global portfolio of RE&S facilities (offices and labs), systematically ensuring sustainability is incorporated. Tier 1 FM service providers are required to input utility data for every site in assigned portfolios in a timely manner. Starting in FY19 (the reporting period), they must produce an annual basis site-specific sustainability plans, including establishing qualitative project goals focused on energy, water, and waste and quantitative reduction targets where possible.

Impact of engagement, including measures of success

This is an ongoing effort that will enable Microsoft to continually track and monitor progress towards RE&S’s global sustainability goals. These contracts help ensure that facility service providers report all utility data quarterly for each site they manage, that each site has initiated a sustainability plan, and that mechanisms are in place to track progress against the projects listed within those plans. We measure the success of this effort by scoring 1–5, 5 being the highest score possible and achieved by entering utility data, establishing a plan, performing against the plan, and identifying net-new initiatives. In future reporting periods, achieving a high score will require demonstrated and measurable outcomes against the projects and reduction targets stated in these plans.

Comment
Type of engagement
   Engagement & incentivization (changing supplier behavior)

Details of engagement
   Offer financial incentives for suppliers who reduce your upstream emissions (Scopes 3)

% 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
   In FY19 (the reporting period), suppliers working on our Redmond campus started using the Embodied Carbon in Construction Calculator (EC3) to reduce upstream emissions through building materials selection. In FY18, Microsoft became the first large corporate user of the EC3 tool and decided to pilot the tool to reduce upstream emissions on this large construction project. The Puget Sound Campus Modernization project will provide 17 new buildings containing 2.5 million square feet of new office space in Washington State.

Impact of engagement, including measures of success
   Microsoft has committed to reducing embodied carbon (upstream emissions from building materials) on the Puget Sound Campus Modernization project by 15 percent, with an aspirational reduction target of 30 percent. Supplier partners on this project are using the EC3 tool to evaluate embodied carbon emissions of raw building materials, inform materials selection decisions, and track progress towards upstream emissions reduction goals.

Comment
Type of engagement
   Engagement & incentivization (changing supplier behavior)

Details of engagement
   Offer financial incentives for suppliers who reduce your upstream emissions (Scopes 3)

% of suppliers by number
   1

% total procurement spend (direct and indirect)
   1

% of supplier-related Scope 3 emissions as reported in C6.5
   1

Rationale for the coverage of your engagement
   In FY19 (the reporting period), our Cloud Supply Chain Sustainability (CSCS) team within the Azure Hardware Systems and Infrastructure (AHSI) group amended two existing supplier agreements to facilitate additional cloud infrastructure product reuse programs, which would enable Microsoft to increase the models of closed product and component loops and extend product lifecycles within Microsoft and externally to Microsoft.

Impact of engagement, including measures of success
   The impact of the new AHSI team product reuse programs will be that they will reduce the per-asset scope 3 emissions across the lifecycle. As we extend the life of the cloud infrastructure assets, the embedded emissions at the manufacturing phase and the end-of-use emissions will have a lower year-on-year impact. The measure of success of the programs will be based on the emissions savings linked to reduced replacement purchases.

Comment
C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

<table>
<thead>
<tr>
<th>Type of engagement</th>
<th>Education/information sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details of engagement</td>
<td>Run an engagement campaign to education customers about your climate change performance and strategy</td>
</tr>
<tr>
<td>% of customers by number</td>
<td>100</td>
</tr>
<tr>
<td>% of customer-related Scope 3 emissions as reported in C6.5</td>
<td>100</td>
</tr>
</tbody>
</table>

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

Rationale for the group of customers selected: We view climate performance as a key selling point of our technology products and services, and so we aim to share related stories as widely as possible to reach all of our current and potential future customers globally. Scope of engagement: We share related stories through our website, events, outreach, and public relations (PR) activities. We also include information on the carbon savings of our cloud services and other sustainability qualifications in some of our direct business-to-business marketing materials for our cloud services and artificial intelligence (AI) offerings. Note: the figure reported in the “% of customer-related scope 3 emissions as reported in C6.5” column refers to the emissions associated with the electricity consumption by physical devices only, as emissions associated with energy consumption from our cloud services is covered in Microsoft scope 1 and 2 emissions.

Impact of engagement, including measures of success

The impact of these engagements includes enhanced reputation, increased customer education, and direct feedback to Microsoft on our climate change strategy. We measure the success of these engagements in a variety of ways: We conduct regular media analyses and benchmarking reviews to determine the impact of our marketing and communications engagements. We track customer and stakeholder inquiries on climate-related issues to shape our policies and performance. We also track the inclusion of sustainability-related topics in our executive briefing...
conferences with existing and prospective customers, to assess how many customers we’ve reached over the course of the year on a quarterly basis. For all other PR engagements, including earned stories in external outlets, owned stories on our own blog properties and social media platforms, and value of events, we use standard metrics, including reach, impressions, and engagements with the posts. We also directly share key earned and owned stories with our sales teams and customers. For example, to affirm our commitment for the Paris Agreement, President Brad Smith tweeted, posted on LinkedIn, and communicated directly with key customers and employees; much of this was picked up in earned media leading to 7 million Twitter impressions and 189 articles—many of which were shared directly with customers by our sales representatives.

<table>
<thead>
<tr>
<th>Type of engagement</th>
<th>Education/information sharing</th>
</tr>
</thead>
</table>

**Details of engagement**

Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

100

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

100

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

Rationale for the group of customers selected: All customers have access to energy efficiency information for our devices. Our rationale is to provide transparency regarding the environmental footprint of the products that our customers purchase and use. Scope of engagement: We publish the environmental labels, registrations, and certifications, including EPEAT and ENERGY STAR, for our devices both on our website and through Eco Profiles for our leading products.

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

The greatest impact of sharing information on the environmental footprint of our products with our customers is in informing our design teams about our customer use habits. The Eco Profiles help us assess where improvements can occur in the next generation of projects. Given the resource intensity of product lifecycle analyses (LCAs), we set a target to identify and procure a tool that would allow us to complete the LCAs
on our remaining products. In April 2019, we purchased a simplified version of the tool from the developer of our GaBi tool. The LCAs enable us to identify our product carbon emission “hot spots,” so we can address them in design and production with the goal of continuing to reduce the carbon footprint related to production and product energy use, the major contributors.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

We engage with partners across our value chain, including technology partners, non-governmental organizations (NGOs), governments, scientists, and universities, through one-on-one meetings, consortiums, events, and industry associations, to develop sustainability solutions in energy, carbon, water, waste, agriculture, biodiversity, buildings, infrastructure, planning, and transportation.

We look to partner deeply to democratize access to data and tools, to advance work at the intersection of data and environmental science, and to scale learnings, best practices, and data equally across the globe to every person and organization. Guiding our climate-related engagements specifically are our overarching carbon and energy commitments, which focus on:

- Reducing our scope 1 and 2 greenhouse gas emissions to near zero by 2025, reducing our scope 3 emissions by more than half by 2030, and removing more carbon than we emit, setting us on a path to remove by 2050 all the carbon Microsoft has emitted since its founding in 1975 (commitment established in FY20).
- Enabling the measurement and management of global carbon and climate change impacts through technology solutions.
- Powering our operations with 100 percent wind, solar, or hydropower energy by 2025 (commitment established in FY20).
- Helping greener the grid and accelerate the transition to a zero-carbon energy future.
- Enabling energy efficiency with and through technology that enables a transition to a cleaner, more energy-efficient economy.
- Accelerating research breakthroughs by working with leading scientists to expand the boundaries of our knowledge of the planet.

We further prioritize opportunities according to the following investment principles:

1. Ambition—using the broadest area of influence available to Microsoft to make deepening investments in carbon removal.
2. Measurable impact—making verified volumetric removals in scoped carbon emissions that directly accrue to our quantitative commitments.
4. Leadership—establishing best practices in carbon removal that other entities can adopt.
5. Innovation—unlocking more efficient, scalable approaches to carbon removal.
We communicate our progress externally through third-party organizations like CDP and the Dow Jones Sustainability Indices (DJSI) as well as our own Corporate Social Responsibility (CSR) Annual Report. Our relative transparency and performance are evaluated by those organizations and the public, influencing perceptions and the company’s overall brand value. To measure the success of direct engagements focused on driving sustainability through technology, we look at customer satisfaction surveys, revenue, and whether we have sufficient technology partners offering sustainability solutions to meet demand.

An example of our climate-related engagement strategy with our technology partners is AI for Earth, a Microsoft program aimed at empowering people and organizations to address global environmental challenges by increasing access to artificial intelligence (AI) tools and educational opportunities while accelerating innovation. AI for Earth enables organizations to develop AI computing resources that help people, organizations, and governments to anticipate, predict, and manage climate change impacts. Some examples of organizations that have received funding through AI for Earth include our partner Terrafuse, which is using machine learning to forecast climate-related risks (Terrafuse uses historical wildfire data, numerical simulations, and satellite imagery on Microsoft Azure to model wildfire risk for any location), and the World Mosquito Program (WMP) in Vietnam, which is using a remote sensing Microsoft AI solution to identify release points for bacteria that infect mosquitoes and reduce the risk those mosquitoes pose to humans (climate change brings mosquito-borne diseases to areas where disease had previously been eradicated or to entirely new areas). Microsoft committed $50 million over 5 years (from December 2017) to fund the AI for Earth program. As of April 15, 2020, we have committed incremental investments dedicated to infrastructure development. We will provide our AI for Earth grantees with access to the world’s critical environmental datasets, as well as a computing platform to analyze those datasets on. The program has grown over the past two years to support more than 600 grantees across more than 90 countries.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?
- Direct engagement with policy makers
- Trade associations
- Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?
## Focus of legislation

<table>
<thead>
<tr>
<th>Focus of legislation</th>
<th>Corporate position</th>
<th>Details of engagement</th>
<th>Proposed legislative solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean energy generation</td>
<td>Support</td>
<td>In FY19 (the reporting period), in the United States, Microsoft filed comments on Docket No. RM18-9-000 regarding Participation of Distributed Energy Resource Aggregations in Markets Operated by Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) with the Federal Energy Regulatory Commission (FERC), to allow storage and distributed clean energy resources to be authorized to participate in wholesale markets.</td>
<td>We support the authorizing of a final order that would require RTOs and ISOs to allow energy storage and other distributed clean energy resources to participate in wholesale markets.</td>
</tr>
<tr>
<td>Clean energy generation</td>
<td>Support</td>
<td>In FY19, Microsoft participated in Clean Energy Lobby Days in California and Virginia. Examples of the bills supported by these lobby days include SB 1584 (Suetterlein) and HB 2117 (Mullin), both of which focus on maintaining retail customer renewable energy options in Virginia.</td>
<td>We support legislation that would provide greater options for customers to purchase 100 percent carbon-free electricity, allow storage and other clean energy resources to participate in markets, and require Virginia to join the Regional Greenhouse Gas Initiative (RGGI) market.</td>
</tr>
<tr>
<td>Clean energy generation</td>
<td>Support</td>
<td>In FY19, Microsoft sent a letter to Governor Brown in California in support of the signing of a direct access bill—SB 237 (Hertzberg): Direct Access—to allow more choice for renewable energy.</td>
<td>We support SB 237 (Hertzberg): Direct Access, as it would provide customer choice so that energy buyers can accelerate the purchase of zero-carbon electricity.</td>
</tr>
<tr>
<td>Clean energy generation</td>
<td>Support</td>
<td>In October 2019, Microsoft participated in the stakeholder response session of an en banc hearing on the Draft Gap Analysis/Choice Action Plan for the California Customer Choice Project. The goal of the project was to evaluate regulatory framework options for an evolving electric market in California.</td>
<td>We support regulations that enable greater customer choice and market-based costs for energy buyers, so that energy buyers can accelerate the purchase of zero-carbon electricity.</td>
</tr>
<tr>
<td>Clean energy generation</td>
<td>Oppose</td>
<td>In FY19, Microsoft filed comments on Docket No. EL16-49-000 with the Federal Energy Regulatory Commission (FERC) on pricing of the PJM regional market to reflect corporate renewable energy purchases in the calculation of market pricing in the 13-state mid-Atlantic.</td>
<td>We support modifications to FERC’s final order on the PJM pricing formula so that it distinguishes voluntary renewable energy purchases from state</td>
</tr>
<tr>
<td>Clean energy generation</td>
<td>Support</td>
<td>In January 2019, Microsoft sent a letter to the Virginia legislature in support of bills SB 1584 (Suetterlein) and HB 2117 (Mullin), Maintaining Retail Customer Renewable Energy Options in Virginia, to remove restrictions on 100 percent renewable energy purchasing in the state of Virginia.</td>
<td>We support the approval of SB 1584 (Suetterlein) and HB 2117 (Mullin), so that customers can choose how best to procure 100 percent renewable energy.</td>
</tr>
<tr>
<td>Clean energy generation</td>
<td>Support</td>
<td>In FY19, Microsoft formally signed (during committee proceedings) in favor of the legislation SB 5116, to create a 100 percent zero-carbon grid in Washington State.</td>
<td>We support the approval of SB 5116, which requires a 100 percent clean energy grid in Washington State.</td>
</tr>
<tr>
<td>Clean energy generation</td>
<td>Oppose</td>
<td>In May 2019, Microsoft sent a letter to Virginia's State Corporation Commission (SCC) protesting Dominion’s Integrated Resource Plan (IRP) given its low assumptions for renewable and storage penetration and requesting it be redone to incorporate more renewables and less fossil fuel demand.</td>
<td>We support the SCC rejecting the IRP and requiring the utility to revise it to incorporate more renewables and less fossil fuel demand.</td>
</tr>
<tr>
<td>Clean energy generation</td>
<td>Support</td>
<td>In June 2019, Microsoft signed a letter by RE-Source to the EU Commission requesting the removal of regulatory barriers to corporate renewable energy purchasing in national legislation through the EU Renewable Energy Directive II (for example, encouraging the European Commission to prioritize the removal of regulatory barriers to corporate renewable power purchase agreements [PPAs] as part of their recommendations to Member States on their National Energy and Climate Plans, so that the potential of corporate PPAs can be realized).</td>
<td>We support EU member states promptly implementing through national legislation the EU Renewable Energy Directive II in a way that enables corporate purchasing to accelerate renewable investment.</td>
</tr>
<tr>
<td>Carbon tax</td>
<td>Support</td>
<td>In FY19, Microsoft advocated and provided financial support for Initiative 1631 (I-1631) in Washington State, an initiative that would establish an economy-wide carbon fee in the state with the aim of</td>
<td>We are in favor of I-1631, putting a fee on carbon emissions in Washington State.</td>
</tr>
</tbody>
</table>
curbing pollution. Among our actions, we published a blog post about our support for this initiative.

| Carbon tax | Support | In April 2019, Microsoft joined the Climate Leadership Council (CLC) to advocate for a robust federal carbon price in the United States. The Carbon Dividends Plan includes four pillars: (1) a gradually rising economy-wide carbon fee, (2) carbon dividends for all Americans, (3) significant regulatory simplification by streamlining regulations that would no longer be necessary, and (4) border carbon adjustment to enhance the competitiveness of American-based firms. Through CLC, we meet with lawmakers to educate them on the benefits of carbon pricing. | We support a carbon fee and dividend plan for the United States. |
| Carbon tax | Support | On May 22, 2019, Microsoft participated in the Lawmaker Education & Advocacy Day (LEAD) on Carbon Pricing, supported by more than 75 US companies from across 50 states and representing sectors from across the American economy. The aim of the day was to call on Congress to pass meaningful climate legislation—including a price on carbon. | We support carbon fee legislation in the United States, including a carbon fee and dividend plan. |
| Other, please specify Climate action | Support | In December 2018, Microsoft participated in the international 24th Conference of the Parties (COP24) to the United Nations Framework Convention on Climate Change (UNFCC) in Katowice, Poland. | We encourage countries around the world to implement policies that reduce carbon emissions. |
| Other, please specify Climate action | Support | In April 2019, as part of the Leaders Circle of the largest coalition ever assembled for climate action in the United States (“We Are Still In”), we sent a letter to US Congress to endorse H.R. 9: Climate Action Now Act, which advances our commitment to address climate change and support the Paris Agreement. We believe it is in America’s best interest to improve our global leadership and reputation on this issue by honoring our contribution to the Paris Agreement. | We support H.R. 9: Climate Action Now Act and look forward to welcoming strong, smart, national policies to address the climate challenge while unleashing substantial economic and public health benefits. |
In February 2019, Microsoft sent a letter to President Trump and Congress calling on the United States to ratify the Kigali Amendment to the Montreal Protocol to phase down the use of hydrofluorocarbons (HFCs), a potent greenhouse gas.

We support the ratification of the Kigali Amendment to the Montreal Protocol to phase down HFCs.

**C12.3b**

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

**C12.3c**

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

<table>
<thead>
<tr>
<th>Trade association</th>
<th>Is your position on climate change consistent with theirs?</th>
<th>Please explain the trade association’s position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceres BICEP</td>
<td>Consistent</td>
<td>The Ceres Business for Innovative Climate and Energy Policy (BICEP) Network comprises influential companies advocating for stronger climate and clean energy policies at the state and federal level in the United States. As champions of the accelerated transition to a low-carbon economy, Ceres BICEP Network members have weighed in when it has mattered most. CERES BICEP NETWORK PRINCIPLES: Increase investment in a clean energy economy; promote energy efficiency, renewable energy, and clean transportation; and support climate change adaptation and resilience. For more information, see ceres.org/networks/keres-policy-network.</td>
</tr>
</tbody>
</table>

How have you influenced, or are you attempting to influence their position?
We regularly engage with BICEP members to advocate for stronger climate and energy policies at the state and federal level in the United States. In FY19 (the reporting period), we participated in the Ceres LEAD on Carbon Pricing day, joining 75+ other businesses in a meeting with a bipartisan group of federal lawmakers to call on Congress to pass meaningful climate legislation, including a price on carbon.

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**Trade association**

Center for Climate and Energy Solutions (C2ES)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

The C2ES mission is to advance policy and action to reduce greenhouse gas emissions, promote clean energy, and strengthen resilience to climate impacts. C2ES believes a sound climate strategy is essential to ensure a strong, sustainable economy. C2ES is widely recognized as an influential and pragmatic voice on climate issues. It ranks regularly among the top environmental think tanks in the world, providing timely, impartial information and analysis on our pressing climate and energy challenges. It brings city, state, and national policymakers together with businesses and other stakeholders to achieve common understanding and consensus solutions. It develops market-based solutions and other practical policy approaches that deliver real and lasting climate progress. And it works with Fortune 500 companies to strengthen business action and business support for effective climate policy. For more information, see C2ES.org.

**How have you influenced, or are you attempting to influence their position?**

Through C2ES, we collaborate with members to review and propose policy and corporate approaches to reduce carbon emissions, including voluntary carbon programs. In FY19, we participated in a webinar and panels on how to develop corporate climate goals and policy advocacy strategies. We also participated in workshops to draft a policy blueprint on pathways to achieve a net-zero carbon economy by 2050.

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**Trade association**

Climate Leadership Council

**Is your position on climate change consistent with theirs?**
Consistent

Please explain the trade association’s position

The Climate Leadership Council is an international policy institute founded in collaboration with a who’s who of business, opinion, and environmental leaders to promote a carbon dividends framework as the most cost-effective, equitable, and politically viable climate solution. Despite mounting risks from climate change and growing international calls for action, leading nations have yet to settle on a strategy capable of reducing greenhouse gas emissions at the necessary scale or speed. The Climate Leadership Council believes that the best solution is to return the income from a nation’s carbon fees directly to its citizens through carbon dividends. This would simultaneously discourage carbon emissions, reward good behavior, and build popular support for a gradually increasing carbon fee. The council is currently active in the United States and United Kingdom, and intends to expand to Germany, China, and India next. For more information, see clcouncil.org.

How have you influenced, or are you attempting to influence their position?

We joined the Climate Leadership Council in FY19. Microsoft is a founding member of the Climate Leadership Council, which advocates for a carbon fee and dividend plan. We provided input to help shape the updated carbon-dividend blueprint and met with Congressional offices to advocate for the proposal.

Trade association

Advanced Energy Economy (AEE)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position

AEE is a national association of business leaders who are making the global energy system more secure, clean, and affordable. Its mission is to transform public policy to enable rapid growth of advanced energy companies. Its efforts in support of EPA regulation of electricity sector carbon emissions are an example of its stance on climate change: “EPA’s regulation of carbon emissions from the electric power sector under Section 111(d) of the Clean Air Act represents an opportunity to modernize the electric power system, making it higher performing and more consumer-focused while reducing emissions. Advanced energy technologies and services make it possible to cut emissions while improving reliability, reducing costs, increasing competition, and creating new services for consumers.” For more information, see www.aee.net/initiatives.
How have you influenced, or are you attempting to influence their position?

We are on the board for AEE. We regularly engage with AEE and its members on the creation of research reports and policy recommendations focused on advancing the adoption of alternative energy. In FY19, we signed several letters and participated in several engagements, including advocacy support for more options to purchase renewable energy in Virginia and enable energy storage to participate in wholesale markets.

Trade association

AEE Advanced Energy (AE) Buyers Group

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position

The AE Buyers Group is a coalition of leading advanced energy purchasers who have come together to engage on the energy policy issues that will help them achieve their ambitious clean energy targets. By tapping into AEE’s existing energy policy expertise and state engagement network, and by working collaboratively with other companies, corporate purchasers participating in the AE Buyers Group will maximize the impact of their policy engagement. For more information, see www.aee.net/contact/ae-buyers.

How have you influenced, or are you attempting to influence their position?

We collaborate with other AEE members to advance policies and engage policymakers in support of advanced energy procurement.

Trade association

Renewable Energy Buyers Alliance (REBA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position
REBA is helping grow corporate demand for renewable power and helping utilities and others meet it. REBA exists to make the transition to renewable energy easier by helping companies understand the benefits of moving to renewables, connecting corporate demand to renewable energy supply, and helping utilities better understand and serve the needs of corporations. REBA is led by four nonprofit organizations that have brought together their deep expertise in transforming energy markets. Collectively they work with more than 60 iconic, multinational companies that represent enormous demand for renewable power and, as part of that, coordinate with the We Mean Business’ RE100 campaign, supporting companies who have signed onto their 100 percent renewable energy commitment. Their goal is to help corporations purchase 60 gigawatts (GW) of additional renewable energy in the United States by 2025. For more information, see Rebuyers.org.

**How have you influenced, or are you attempting to influence their position?**

As a founding member, we collaborate with other REBA members to share best practices and formulate new approaches to corporate procurement of renewable energy.

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**Trade association**

Trade association

Alliance to Save Energy

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association’s position**

The Alliance to Save Energy is a nonprofit, bipartisan alliance of business, government, environmental, and consumer leaders advocating for enhanced energy productivity to achieve economic growth, a cleaner environment, and greater energy security, affordability, and reliability. Its mission is to improve energy productivity by: leading bipartisan initiatives that drive technological innovation and energy efficiency across all sectors of the economy, through policy advocacy, education, communications, and research; and convening and engaging in diverse public-private partnerships, collaborative efforts, and strategic alliances to optimize resources and expand its sphere of influence. For more information, see Ase.org.

**How have you influenced, or are you attempting to influence their position?**

We are on the board for the Alliance. We regularly engage with the Alliance and its members on policy recommendations focused on improving energy productivity.
Trade association
RE-Source

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association’s position
The RE-Source Platform is a European alliance of stakeholders representing clean energy buyers and suppliers for corporate renewable energy sourcing. This platform pools resources and coordinates activities to promote a better framework for corporate renewable energy sourcing at European Union (EU) and national levels. This is the first and only multi-stakeholder platform in Europe bringing together the interests of both buyers and sellers to unlock the potential of a new and promising financing stream for renewable energies. For more information, see resource-platform.eu.

How have you influenced, or are you attempting to influence their position?
We regularly engage with other RE-Source members to influence EU and national renewable energy and energy market legislation and to coordinate and align advocacy strategies.

Trade association
smartEN

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association’s position
smartEn is the European association of market players driving digital and decentralized energy solutions. A successful European energy transition requires intelligent cooperation between consumption, distribution, transmission, and generation, acting as equal partners in an integrated energy system. The vision of smartEn is that digitally enabled interaction of demand and supply is an integral part of an increasingly decentralized, decarbonized energy system. For more information, see smarten.eu.
How have you influenced, or are you attempting to influence their position?

We regularly engage with smartEn members to advocate for policies that advance a decentralized, decarbonized energy system in European member states and the European Union (EU).

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**Trade association**

World Business Council on Sustainable Development (WBCSD)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

WBCSD is a global, CEO-led organization of over 200 leading businesses working together to accelerate the transition to a sustainable world. It helps make member companies more successful and sustainable by focusing on the maximum positive impact for shareholders, the environment, and societies. Member companies come from all business sectors and all major economies, representing a combined revenue of more than US$8.5 trillion and with 19 million employees. WBCSD’s global network of almost 70 national business councils gives its members unparalleled reach across the globe. WBCSD is uniquely positioned to work with member companies along and across value chains to deliver high-impact business solutions to the most challenging sustainability issues. For more information, see wbcsd.org.

How have you influenced, or are you attempting to influence their position?

We participate in meetings and regularly engage with WBCSD members on climate change and other environmental policies around the world.

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**Trade association**

Breakthrough Energy Coalition

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**
The Breakthrough Energy Coalition is a unique group that includes private investors who are patient and risk tolerant, global corporations that produce or consume energy in vast quantities, and financial institutions with the capital necessary to finance the world’s largest infrastructure projects. Its network extends into every sector of the global economy, allowing the coalition to tap into additional expertise as needed. The Breakthrough Energy Coalition is committed to building new technologies that change the way people live, eat, work, travel, and make things to stop the devastating impacts of climate change. The coalition believes that forging deep partnerships between governments and its members will lead to more investment earlier and more energy solutions for more people faster. For more information, see b-t.energy.

**How have you influenced, or are you attempting to influence their position?**

We engage with other Breakthrough Energy Coalition members to develop climate change solutions and advocate policies that encourage new climate change solutions across sectors in North America and Europe.

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**Trade association**

Information Technology Council (ITI)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association’s position**

ITI believes and advocates that innovative technologies are at the heart of the world’s ability to develop clean, renewable energy sources and to use less energy where we live and work. Whether through the development of next-generation batteries or high-end computers that rely on less power to operate, through new approaches to recycling e-waste or by creating more effective ways to reduce our energy footprint, technology holds the key to energy independence. Smart grids, smart logistics, intelligent transportation systems, telework, and other information communications technology (ICT) can make a huge difference as we seek to broaden access to sustainable energy. ITI is committed to advancing policies that will strengthen energy security and global competitiveness while fostering long-term sustainable economic growth. It believes that ICT innovations will be essential to achieving the sustainability and growth targets that governments have established for themselves, and yet there remain barriers to realizing the full potential of ICT. ITI is determined to help governments identify and remove these barriers. For more information, see www.itic.org/policy/energy.

**How have you influenced, or are you attempting to influence their position?**
We engage with the White House, federal agencies, and Congress to ensure that together we can successfully tap the potential of ICT to contribute to future security, sustainability, and competitiveness. We also work proactively with the US Environmental Protection Agency (EPA) through ITI as an active partner in and advisor to the ENERGY STAR program (the ITI Energy Efficiency Working Group [EEWG] helps coordinate meetings between the computer industry and the US EPA, which runs the ENERGY STAR program for computers).

Trade association
Consumer Technology Association (CTA)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
CTA, formerly the Consumer Electronics Association (CEA), represents the $287 billion US consumer technology industry. More than 2,200 companies are CTA members. CTA benefits include policy advocacy, market research, technical education, industry promotion, standards development, and the fostering of business and strategic relationships. CTA is also engaged in consumer education and collaborative partnerships to help meet the challenge of building a more sustainable economy. CTA's position is that "we all have a stake in finding solutions for climate change and diminishing natural resources. Our global economy is also a global eco-system, and it's never been more important to share the responsibility of preserving our planet." The CTA 2015 Sustainability Report illustrates the industry’s progress in pushing green initiatives. The report also provides transparency on the consumer electronics industry’s sustainability practices. For more information, see www.cta.tech/Government-Affairs/Issues-Pages/Furthering-Industry-Sustainability-and-Green-Initi.aspx.

How have you influenced, or are you attempting to influence their position?
Through CTA, we collaborate with the membership toward finding common ground on the progress of energy efficiency measures.

Trade association
Center for Environmental Health (CEH)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association’s position
CEH conducts research and spearheads policy advocacy promoting the use of healthy, non-toxic materials in the construction and furnishing of commercial buildings. For more information, see Ceh.org.

How have you influenced, or are you attempting to influence their position?
LinkedIn has been engaged with CEH since FY17. In FY19, CEH provided expert guidance on indoor air quality protection and pollution prevention achieved through preference for healthy, non-toxic building materials and interiors products.

Trade association
TechNet

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association’s position
TechNet is committed to advancing public policies and private sector initiatives that make the United States the most innovative nation in the world. TechNet champions policies that foster a climate for innovation, allowing technology companies to create, thrive, and compete. TechNet members work together to identify key policy priorities and execute successful legislative strategies at the federal, state, and local levels. For more information, see Technet.org.

How have you influenced, or are you attempting to influence their position?
We regularly engage with TechNet and its members on policy recommendations focused on advancing the adoption of alternative energy.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?
No
(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Our participation in the political process is transparent and based on our principles. We are pleased that Microsoft gained the second highest rating given by the CPA-Zicklin Index of Corporate Political Accountability and Disclosure for our policies that ensure the accountability and transparency of our public policy engagement. (Full guidelines governing our policy engagement and details of campaign contributions and advocacy spending are available through the corporate social responsibility section of the Microsoft website.)

Our Director of Sustainability Policy at Microsoft leads the company’s policy efforts on sustainability and energy. Part of our US Government Affairs team, this role coordinates directly with other team members as well as government affairs teams in other geographies to share our sustainability and energy priorities and ensure our advocacy work is consistent with our climate change and sustainability strategy.

The Regulatory and Public Policy Committee of the Microsoft Board of Directors is responsible for providing oversight of the company’s public policy work and addresses potential environmental and social risks. The charter for this committee includes the responsibility to “review and provide guidance to the board and management about the company’s policies and programs that relate to corporate social responsibility, including accessibility, environmental sustainability, ethical business practices, human rights, philanthropy, privacy and cybersecurity, and responsible sourcing.”

We articulate our public policy position on climate change in both (1) our A Cloud for Global Good cloud policy roadmap and (2) a direct statement:

1. A Cloud for Global Good states: “Policies that promote sustainable practices and support renewable and clean energy are necessary to help address our environmental challenges.” Among our recommendations, we call on governments to “facilitate the development of new renewable energy sources by setting targets and providing incentives,” “accelerate clean energy development by allowing direct energy investment by large consumers either on-site or through third parties and by facilitating partnerships between consumers and utilities,” “encourage [efficiency] gains through policies and regulations that encourage migration to the cloud,” “encourage investment in research and development and support public-private partnerships, particularly in new battery technologies that can store clean energy at scale and smart-grid technology that can use real-time information to balance power distribution,” and “increase transparency on pricing and consumption of energy and resource use.”

2. Our Climate Change Policy Statement states: “Climate change is a serious challenge that requires a comprehensive and global response from all sectors of society…. We see an important role for governments to provide the frameworks that spur the transition to a low-carbon economy, including:
   - Direct funding for accelerating research into renewable and sustainable low-carbon energy sources;
   - Market-based mechanisms that are stable and predictable over the long-term which incent the private sector to invest in the transition to sustainable low-carbon and carbon-free energy sources and technologies;
Microsoft’s “Principles and Policies for Guiding Participation in the Public Policy Process” in the United States includes principles on oversight of trade association memberships. Those policies note, "Like all major corporations, Microsoft is a member of trade associations (organized under section 501(c)(6) of the Internal Revenue Code) in the United States to help advance our public policy agenda and related business goals. We review these memberships annually to assess their business value and alignment with Microsoft’s overall public policy agenda. We work with many of these groups on narrowly-tailored technology policy issues relevant to specific business objectives and it is unrealistic to expect any group’s agenda to align with ours in all policy areas. Therefore our engagement with a particular group does not and should not imply our endorsement of all the policy positions those groups have taken. However, we will not support groups that spend an abundance of their time working against our direct business interests and public policy agenda." In a few instances where we have felt clarification is needed about the public policy position taken by an industry association we belong to, we have issued statements that they are not representing Microsoft on that policy.

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).

<table>
<thead>
<tr>
<th>Publication</th>
<th>In mainstream reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Complete</td>
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Attach the document

2019_Annual_Report.doc
Page/Section reference
Page 5

Content elements
Strategy
Risks & opportunities
Emission targets

Comment
Microsoft 2019 Annual Report

Publication
In mainstream reports

Status
Complete

Attach the document
Microsoft-FY19-10k.pdf

Page/Section reference
Pages 27-28

Content elements
Risks & opportunities

Comment
Microsoft FY19 10K
Publication
   In mainstream reports

Status
   Complete

Attach the document

2019_Shareholder_Letter.docx

Page/Section reference
   Pages 5-6

Content elements
   Risks & opportunities
   Emission targets

Comment
   Microsoft 2019 Letter to Shareholders

Page/Section reference
Pages 32-36

Content elements
Strategy
Emission targets
Other metrics

Comment
Microsoft 2019 Corporate Social Responsibility Report

-------------------------------------------
Publication
In voluntary communications

Status

Attach the document

2019-Environmental-Sustainability-Data-Factsheet.pdf

Page/Section reference
All

Content elements
Emissions figures
Other metrics
Comment
Microsoft 2019 Data Factsheet: Environmental Indicators

Publication
In voluntary communications

Status
Complete

Attach the document

Microsoft Green Blog extracts FY19.pdf

Page/Section reference
All

Content elements
Strategy
Other, please specify
Environmental action

Comment
FY19 extracts from the Microsoft Green blog

Publication
In voluntary communications

Status
Complete

Attach the document


Page/Section reference

All

Content elements

Strategy
Emission targets
Other, please specify
  Environmental action

Comment

FY19 extracts from the Microsoft on the Issues blog

Publication

In voluntary communications

Status

Complete

Attach the document

FY19-Devices-Sustainability-at-Microsoft.pdf

Page/Section reference

All
Content elements
- Risks & opportunities
- Other, please specify
- Supplier engagement

Comment
Devices Sustainability at Microsoft: Fiscal Year 2019

Publication
- In voluntary communications

Status
Complete

Attach the document
- Environmental Sustainability – Microsoft CSR website.pdf

Page/Section reference
- All

Content elements
- Strategy
- Emission targets
- Other, please specify
  - Environmental action

Comment
Extracts from the Microsoft Sustainability website
C15. 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.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

| Row 1 | President, Chief Legal Officer | President |