

C0. Introduction

C0.1

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

VMware, Inc. ("VMware") pioneered the development and application of virtualization technologies with x86 server-based computing, separating application software from the underlying hardware. Information technology ("IT") driven innovation is disrupting markets and industries. Technologies emerge faster than organizations can absorb, creating increasingly complex environments. To take on this challenge, businesses need a flexible and secure digital foundation. We provide compute, cloud, mobility, networking and security infrastructure software to businesses that provides a flexible digital foundation for the applications that empower businesses to serve their customers globally.

We continue to broaden our product and solution offerings beyond compute virtualization to include offerings that allow organizations to manage IT resources across private clouds and complex multi-cloud, multi-device environments by leveraging synergies across three categories: Software-Defined Data Center ("SDDC"), Hybrid Cloud Computing and End-User Computing ("EUC"). Our portfolio supports and addresses the four key IT priorities of our customers: modernizing data centers, integrating public clouds, empowering digital workspaces and transforming security. We create solutions that enable the digital transformation our customers need as they ready their applications, infrastructure and devices for their future business needs.

We incorporated in Delaware in 1998, were acquired by EMC Corporation ("EMC") in 2004 and conducted our initial public offering of our Class A common stock in August 2007. Effective September 7, 2016, Dell Technologies Inc. ("Dell") acquired EMC. As a result, EMC became a wholly-owned subsidiary of Dell, and VMware became an indirectly-held, majority-owned subsidiary of Dell. We are considered a "controlled company" under the rules of the New York Stock Exchange. As of February 2, 2018, Dell controlled approximately 81.9% of our outstanding common stock, including 31 million shares of our Class A common stock and all of our Class B common stock.

Effective January 1, 2017, our fiscal year changed from a fiscal year ending on December 31 of each calendar year to a fiscal year consisting of a 52- or 53-week period ending on the Friday nearest to January 31 of each year. The period that began on January 1, 2017 and ended on February 3, 2017 is reflected as a transition period (the "Transition Period"). Our first full fiscal year under the revised fiscal calendar began on February 4, 2017 and ended on February 2, 2018. We refer to our fiscal years ended February 1, 2019, February 2, 2018 and December 31, 2016 as "fiscal 2019," "fiscal 2018" and "fiscal 2016," respectively.

Total revenue in fiscal 2018 increased 12% to \$7,922 million. Total revenue is comprised of license revenue of \$3,195 million and services revenue of \$4,727 million. While sales of our VMware vSphere ("vSphere") product have remained strong, the majority of our license sales originate from solutions across our broad portfolio beyond our compute products. Our corporate headquarters are located at 3401 Hillview Avenue, Palo Alto, California, and we have 117 offices worldwide.

For more details, please reference VMware's annual report on Form 10-K for the year ended February 2, 2018:

https://s2.q4cdn.com/112802898/files/doc_financials/2017/VMWare-2017-Form-10K.pdf

C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	February 1 2017	January 31 2018	No	<Not Applicable>
Row 2	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 3	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

Argentina
Armenia
Australia
Brazil
Bulgaria
Canada
Chile
China
Costa Rica
Czechia
Denmark
France
Germany
India
Indonesia
Ireland
Israel
Italy
Japan
Malaysia
Mexico
Netherlands
New Zealand
Pakistan
Poland
Republic of Korea
Saudi Arabia
Singapore
Spain
Sweden
Switzerland
Taiwan (Province of China)
Thailand
Turkey
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States of America
Viet Nam

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 consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C1. Governance

C1.1

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

No

C1.1c

(C1.1c) Why is there no board-level oversight of climate-related issues and what are your plans to change this in the future?

	Primary reason	Board-level oversight of climate-related issues will be introduced within the next two years	Please explain
Row 1	Currently, our highest level of oversight for climate-related issues is our Vice President of Sustainability Strategy who reports to our Chief Technology Officer.	Yes, we plan to do so within the next two years	We are working on developing board-level oversight within the next year.

C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Business unit manager <i>Vice President of Sustainability Strategy</i>	Both assessing and managing climate-related risks and opportunities <i>See C1.2a for details on the role of the Vice President of Sustainability Strategy.</i>	Quarterly
Sustainability committee <i>VMware's Executive Sustainability Advisory Group</i>	Assessing climate-related risks and opportunities <i>See C1.2a for details on the role of the Executive Sustainability Advisory Group.</i>	Not reported to the board
Sustainability committee <i>VMware's Sustainability Technical Council</i>	Assessing climate-related risks and opportunities <i>See C1.2a for details on the role of the Sustainability Technical Council.</i>	Not reported to the board

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.

Our Vice President of Sustainability Strategy oversees the development and implementation of VMware's sustainability strategy across our three sustainability pillars: product, planet and people. This is a full-time role and the VP's daily activities are dedicated to engaging stakeholders across the organization and directing the sustainability team to drive our corporate sustainability initiatives and targets, including but not limited to: 100% renewable energy, carbon neutrality, technology innovation, waste diversion and supply chain.

This VP reports directly to, and meets regularly with, our Executive Vice President and Chief Technology Officer who reports directly to the CEO and is on the Executive staff. The placement of our VP in the Office of the CTO was a strategic move that was made in 2016 to more deeply align the corporate sustainability objectives with the technical strategy of the company. At VMware, our largest impact - by orders of magnitude - is through our products, which is why our most senior role related to climate issues reports directly to our CTO.

Assessment and Monitoring of Climate Issues

VMware has established a tiered governance structure that consists of a Sustainability Technical Council and an Executive Sustainability Advisory Group. The Technical Council includes various representation within the Office of the CTO and Products and Cloud Services Business Unit. This Technical Council meets quarterly with the VP of Sustainability Strategy to provide insights, share ideas and drive cross-company sustainability initiatives. The goal of the Council is to drive sustainability into our engineering processes and to collaborate on assessing the environmental impacts of our products. The Executive Sustainability Advisory Group includes key internal stakeholders whose role it is to review and guide our sustainability strategy, reporting, and corporate sustainability goals.

The Executive Sustainability Advisory Group includes the following stakeholders:

- Chief People Officer (CPO) - The CPO's role is to consider the impact of sustainability on employee experience, culture, and talent acquisition, retention and development.
- Chief Technology Officer (CTO) - The CTO's role is to consider the impact of sustainability on the long-term technical agenda for the company.
- Chief Communications Officer (CCO) - The CCO's role is to guide the communication of our sustainability strategy internally and externally.
- VP, Global Government Relations and Public Policy - This VP's role is to communicate relevant policy information, as well as to share VMware's perspective on sustainability-related issues to the relevant public policy forums.
- VP, Deputy Counsel - This VP's role is to provide guidance in understanding and navigating any legal issues that arise.
- VP, Internal Audit - This VP's role is to advise on assurance and risk as it relates to our sustainability strategy.
- VP, Real Estate and Workplace - This VP's role is to operationalize processes within the real estate organization concerning our corporate sustainability strategy.

C1.3

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

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

Chief Executive Officer (CEO)

Types of incentives

Recognition (non-monetary)

Activity incentivized

Behavior change related indicator

Comment

In 2017, our CEO added sustainability goals to the Executive MBOs. An internal CEO dashboard was created to track progress against our 2020 goals (which include two specific climate-related targets).

Who is entitled to benefit from these incentives?

Business unit manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Vice President of Sustainability Strategy has part of individual performance measurement in annual bonus calculation tied to attainment of targets and plans.

Who is entitled to benefit from these incentives?

Environment/Sustainability manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Part of individual performance measurement is in annual bonus calculation.

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

Part of individual performance measurement is in annual bonus calculation.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Recognition (non-monetary)

Activity incentivized

Behavior change related indicator

Comment

In 2017, all employees were asked to align their individual goals with the company's strategic initiatives (MBOs). The company's strategic initiatives range from reputation to specific business unit targets. In 2018, we've included on the list of executive MBOs to "Be a Force For Good." While qualitative, this is the first time our global employees are formally encouraged to consider sustainability as part of their personal goals.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	1	
Medium-term	2	3	
Long-term	4	6	

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	3 to 6 years	Board or individual/sub-set of the Board or committee appointed by the Board - VMware's Audit Committee All geographic regions in which VMware operates; APJ, EMEA and the Americas We perform an annual risk assessment that is updated quarterly. The assessment is reviewed by our Executive Staff and the Audit Committee of the Board. Additionally, we have various dashboards that track key issues and trends.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

Company Level:

VMware's Audit Committee consists of a subset of Board members and is supported by senior company executives. The Audit Committee reports to the Board quarterly and reviews the Company's top risks. The Audit Committee aligns with the Executive Staff, Internal Audit and key corporate risk owners on the evaluation and management of top corporate risks. Our Vice President of Sustainability Strategy develops and communicates our sustainability strategy & collaborates with our VP of Internal Audit to integrate climate risk into the annual risk assessment process.

Each year, our Internal Audit team reviews the company's major initiatives and then supports the Business Units in determining where to focus their efforts. Our Internal Audit team - responsible for assurance and risk advisory services (maturity assessments, risk profiling and raising awareness) - performs annual compliance risk assessments for both identified & emerging risks.

Our Internal Audit team has developed a multi-dimensional model to evaluate and prioritize risks - climate-related issues are among those that would be considered for review. This model allows us to assess our impacts and vulnerabilities from numerous angles and then, to determine where we should focus. Our impacts include: strategic, customer, legal, and regulatory; and our vulnerabilities include: rate of change, scale, experience, and concern. We assess the level of impact, as well as the level of vulnerability to determine where to focus.

Asset Level:

Risks associated with climate change are assessed & mitigated by the Real Estate & Workplace team in conjunction with the Risk Management & Enterprise Resiliency teams, through the implementation of disaster recovery, crisis management, & business continuity planning. VMware undertakes risk assessments for capital projects, which include energy assessments of alternative locations. As an example, our data center is intentionally located in Wenatchee, Washington due to the fact that we can secure 100% clean power in that location.

At the asset level, our annual budget cycle provides for the assessment of opportunities for energy and water conservation improvements at each of our sites. The budgets are the responsibility of our Regional Directors who manage the sites within their regions (Americas, APJ and EMEA). In 2017, this effort enabled savings of more than 2,479 MT CO₂e. Additionally, in 2017, we developed VMware's Sustainable Design Guidelines in order to support our teams in achieving LEED certification for both existing retrofits/remodels and new construction, enabling future cost and carbon savings for our sites.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Current regulation risks, which may be influenced by climate issues, are included in our enterprise risk management identification and assessment processes. As one example, VMware operates in the EU and is subject to stricter environmental regulations at our offices located in the European Union. As a software organization, we do not consider this to be a substantive risk.
Emerging regulation	Relevant, always included	Emerging regulation risks, which may be influenced by climate issues, are included in our enterprise risk management identification and assessment processes. All of our policy engagement activities are coordinated through our VP of Global Government Relations and Public Policy. As an example of how VMware integrates emerging regulation into our risk assessment process, VMware's VP of Global Government Relations sits on the Executive Committee of The Information Technology Industry Council (ITI). In this capacity, VMware is able to assess emerging regulation risks, as well as to influence ITI's policy positions. An example of emerging regulation is a carbon tax. The likelihood of a carbon tax in the US is reviewed annually and the impact on our operations is assessed. At this point in time, we do not consider this to be a substantive risk.
Technology	Relevant, always included	The risks presented by technology and the rapid developments within the field are considered on many levels - most importantly from a business strategy perspective, as well as a competitive one. The success of our products depends upon the cooperation of hardware and software vendors to ensure interoperability with our products and offer compatible products and services to end users. In addition, we have begun to extend the functionality of various products to work with native public cloud applications, which may require the cooperation of public cloud vendors. We have more than 1,000 technology partners with whom we bring joint offerings to the marketplace and over 4,000 active service provider partners.
Legal	Relevant, always included	Legal risks, which may be influenced by climate issues, are included in our enterprise risk management identification and assessment processes. From time to time, we are involved in various legal, administrative and regulatory proceedings, claims, demands and investigations relating to our business, which may include claims with respect to commercial, product liability, intellectual property, breach of contract, employment, class action, whistleblower and other matters. In the ordinary course of business, we also receive inquiries from and have discussions with government entities regarding the compliance of our contracting and sales practices with laws and regulations.
Market	Relevant, always included	Market risks, which may be influenced by climate issues, are included in our enterprise risk management identification and assessment processes. We face intense competition across all markets for our products and services. We believe that the key factors in our ability to successfully compete include the level of reliability, interoperability and new functionality of our product and service offerings; the ability of our product offerings to support multiple hardware platforms, operating systems, applications frameworks and public cloud platforms; our ability to anticipate customer needs in rapidly evolving markets for IT resources; the pricing of our product and service offerings; the ability to integrate open source technologies that are critical in private and public cloud computing architectures; the ability to attract and retain key employees; and the ability to maintain and expand our ecosystem of technology partners, service providers and sales channel partners. While we believe that we are a technology leader in virtualization and cloud infrastructure solutions and have a strong, favorable image with our customers, many of our current or potential competitors have longer operating histories, greater name recognition, larger customer bases and significantly greater financial, technical, sales, marketing and other resources than we do. Additionally, the adoption of public cloud, micro-services, containers and open source technologies has the potential to erode our profitability.
Reputation	Relevant, always included	Reputational risks, which may be influenced by climate issues, are included in our enterprise risk management identification and assessment processes. For VMware, given that we have led the virtualization of IT with our virtualization products - vSphere, vCloudNFV, Horizon - and that our products are known for energy efficiency, it would negatively impact our business if our reputation was damaged due to a lack of performance around the environment and climate change.
Acute physical	Relevant, always included	Acute physical risks, which may be influenced by climate issues, are included in our enterprise risk management identification and assessment processes. For example, if there were climate-driven weather events; such as, extreme floods in India, where much of our operations and support are conducted (we employ over 4,000 people in Bangalore, India), prevention of employees getting to work would disrupt our ability to operate.
Chronic physical	Relevant, always included	Chronic physical risks, which may be influenced by climate issues, are included in our enterprise risk management identification and assessment processes. For example, climate-driven changes in precipitation extremes; such as, droughts, have the potential to disrupt VMware's internal operations given that two of our largest populations of employees live in drought-prone areas - California in the US and Bangalore, India.
Upstream	Not relevant, explanation provided	
Downstream	Not relevant, explanation provided	

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

Risks:

At the company level, our Vice President of Sustainability Strategy develops and communicates our sustainability strategy and collaborates with our VP of Internal Audit to integrate climate risk into the annual risk assessment process. Our Internal Audit team performs annual compliance risk assessments at the company level to assess both identified and emerging risks.

VMware executive leadership sponsored the launch of an enterprise resiliency (ER) program in 2015. The program launch was in response to the company's rapid global growth and the increasingly volatile world in which we live. Today we are focused on improving the company's resiliency and preparedness toward potentially business-disrupting events. The ER program brings together the company's business continuity, technology recovery, emergency response, and crisis management programs under a common governance framework. In 2017, we achieved a major milestone by completing Crisis Management Plans for all of our top 9 risks, which were reviewed by the Audit Committee in 2017.

At the asset level, risks associated with climate change are assessed and mitigated by the Real Estate and Workplace team in conjunction with the Risk Management and Enterprise Resiliency teams, through the implementation of disaster recovery, crisis management, and business continuity planning. VMware undertakes risk assessments for capital projects, which include energy assessments of alternative locations. As an example, our data center is intentionally located in Wenatchee, Washington due to the fact that we can secure 100% clean power in that location.

One example of how we manage risk is illustrated by our Physical Security team. As an example, one of the climate-related risks that they consider are extreme weather events, like floods. To this end, in 2017, we deployed a new mass communication tool with better capability to reach more of our employees - specifically, we have better coverage for our home-based employees in the event of a flood (or other disaster). In 2017, all of our Emergency Site Guides were updated. They were standardized and simplified in order to be more efficiently implemented. Additionally, our Crisis Management Team conducted a flood simulation in Bangalore, India.

Opportunities:

Opportunities are identified at the company level through various channels, including: customer feedback, internal innovation programs, and formal sustainability materiality assessments. We engage executives and content experts from across the company to provide insights about the importance of environmental and social issues to VMware's success as a company. We work to identify emerging issues and evaluate gaps in our product strategies for potential opportunities.

Opportunities are identified at the asset level through rigorous facilities management. We review each site for opportunities to reduce energy consumption and implement improvement plans. We've taken the opportunity to achieve LEED-certification for 12 of our sites globally and are in the midst of working toward LEED Platinum certification for two new buildings on our Palo Alto HQ campus. Opportunities like this enable us to provide our employees with healthier environments, as well as to reduce energy costs and enable carbon savings.

C2.3

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

Yes

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

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact driver

Reduced revenue and higher costs from negative impacts on workforce (e.g., health, safety, absenteeism)

Company- specific description

Change in severity of extreme weather events has the potential to disrupt VMware's own internal operations which could result in delays in fulfilling customer orders and deferred revenue. While our owned and leased facilities are not in highly vulnerable locations, recent disasters have certainly demonstrated that impacts can be anywhere and can be far-reaching in their regional impact. In particular, these events can affect: delivery of services to customers; the ability of our employees to access our facilities; and/or disruption in services to VMware operations. For example, if there were extreme floods in India, where much of our operations and support are conducted (we employ over 4,000 people in Bangalore, India), prevention of employees getting to work would disrupt our ability to provide our current levels of service. Our Crisis Management Team has conducted numerous simulations, including a flood simulation exercise for Bangalore, India, which resulted in recommendations to better prepare for this type of event in the future.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium-high

Potential financial impact

1000000000

Explanation of financial impact

The financial implications can range from \$0 to extended disruption in a targeted geography (e.g., in excess of \$1B USD if a data center is destroyed). Given the analysis of our internal risk assessment, we believe the risk of destruction of key facilities is extremely low.

Management method

Our Global Real Estate and Workplace team has an established, sophisticated emergency management process for VMware facilities worldwide. VMware's Security Operations Center monitors external global events that may impact VMware sites and personnel around the world. In the event of an incident impacting VMware, we communicate to our employees via a two-way mass communication tool to advise of the incident, provide direction and ascertain their safety. In 2017, we deployed a new mass communication tool with better capability to reach more of our employees - specifically, we have better coverage for our home-based employees in the event of a flood (or other disaster). Also, all of our Emergency Site Guides were updated in 2017; they were standardized and simplified in order to be more efficiently implemented. In addition, our Enterprise Resiliency (ER) function focuses on risk mitigation strategies for key business interruption type risks including extreme weather events. The ER team's primary objectives are to develop Crisis Management Plans for these top risks, drive organizational awareness, and provide stronger governance across related programs like Business Continuity, Disaster Recovery, Crisis Management and Safety and Security so they all operate in unison toward improving the company's overall resiliency. In 2017, Crisis Management Plans were completed for all of our top risks that were reviewed by the Audit Committee.

Cost of management

1000000

Comment

Our risk management and global emergency response programs are built into the job responsibilities of many different professionals. The estimated costs of management including global property insurance premiums and staff time to implement programs exceed \$1M USD.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Reputation: Stigmatization of sector

Type of financial impact driver

Reputation: Reduced revenue from decreased demand for goods/services

Company- specific description

We have a long-standing positive reputation as a company. If we are not proactive about climate change, nor seen as a company that is a force for good in the world, our reputation is at risk. Energy use within the IT industry is drawing increased attention for its impact on the environment and climate change. Customers, businesses, and institutional investors are increasingly making investment decisions based on how environmentally responsible companies are. VMware has seen a significant increase in the number of customers requesting environmental information over the last year. For VMware, given that we have led the virtualization of IT with our virtualization products - vSphere, vCloudNFV, Horizon - and that our products are known for energy efficiency, it would negatively impact our business if our reputation was damaged due to a lack of performance around the environment and climate change.

Time horizon

Medium-term

Likelihood

Unlikely

Magnitude of impact

Medium

Potential financial impact

80000000

Explanation of financial impact

Our revenue could begin to decrease if our customers no longer see us as relevant. While it is difficult to quantify, if it were a 1% decrease in revenue, that would result in losses of over \$80M USD.

Management method

We have a team dedicated to managing our company-wide GHG emissions and executing on our carbon reduction strategy. As a way to manage this reputational risk, we have 1) set a science-based target to reduce our Scope 1 and 2 emissions 35% by 2030, 2) consolidated our sustainability information on one platform (EcoVadis) for the benefit of our customers (to support them toward their supply chain-related sustainability goals), 3) committed to ongoing reporting to CDP, 4) committed to ongoing sustainability reporting (our annual Global Impact Report), 5) set up a communications strategy to encourage information sharing and transparency of best practices, 6) commissioned three consecutive white papers with IDC to quantify the positive carbon impact of our products for our customers, and 7) released an enhanced version of our carbon calculator to enable our customers to easily assess their environmental impact. Last year we accomplished the following: 1) scored an A- from CDP for our second consecutive year; 2) committed to leading initiatives, including RE100, Renewable Energy Buyers' Principles, and Business Backs Low-Carbon USA; 3) shared stories through 3BL Media (<http://3blmedia.com/Profiles/VMware>) - reaching beyond our traditional customer base, and 4) re-designed and enhanced our sustainability page on our corporate website, including numerous resources, videos and reports (<https://www.vmware.com/company/sustainability.html>).

Cost of management

2000000

Comment

We have three FTEs including a Vice President and two Senior Sustainability Managers in our Real Estate and Workplace organization. We have a cross-functional team that supports the sustainability group on various projects depending on expertise. The management costs for this team are within our annual operating plan.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact driver

Reduced revenue and higher costs from negative impacts on workforce (e.g., health, safety, absenteeism)

Company- specific description

Climate-driven changes in precipitation extremes and droughts have the potential to disrupt VMware's own internal operations which could result in delays in fulfilling customer orders, customer service delays, and ultimately, deferred revenue. Our two largest sites are in drought-prone areas: California in the US and Bangalore, India. We are managing this risk by implementing aggressive water conservation in these water-stressed regions. In 2017, we collected water consumption data for nearly 64 percent of our portfolio, up from 46 percent in 2016. We launched a new enterprise tool for carbon and water data management with our global real estate teams, enhancing water and energy data management capabilities. We see this as key for future impact and are establishing more robust water metering in key facilities globally.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium-low

Potential financial impact

1000000000

Explanation of financial impact

The financial implications can range from \$0 to extended disruption in a targeted geography (e.g., in excess of \$1B USD if a data center is non-operational). Given the analysis of our internal risk assessment, we believe the risk of key facilities being significantly compromised is extremely low.

Management method

In addition, our Enterprise Resiliency (ER) function focuses on risk mitigation strategies for key business interruption type risks including extreme weather events. The ER team's primary objectives are to develop Crisis Management Plans for these top risks, drive organizational awareness, and provide stronger governance across related programs like Business Continuity, Disaster Recovery, Crisis Management and Safety and Security so they all operate in unison toward improving the company's overall resiliency. In 2017, Crisis Management Plans were completed for all of our top risks that were reviewed by the Audit Committee.

Cost of management

1000000

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

Yes

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

your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company- specific description

VMware's On-Premises Cloud Management Platform: Should emissions reporting become mandated, we have the capability to provide both insight into and management of energy usage and emissions through our management and automation services. Our IT software manages virtualized infrastructure resources and private and public cloud infrastructures. Examples of products in the management and automation product portfolio include our vRealize product line 1) vRealize Operations, which provides performance, capacity and configuration management for virtual or physical infrastructure, 2) vRealize Automation, which enables customers to rapidly deploy and provision cloud services, and 3) vRealize Network Insight, which maps the flow of application traffic between clouds and data centers. This suite of products also provides cost transparency of their cloud and virtualized workloads. VMware's Cloud Services: Should emissions reporting become mandated, we have the capability to provide both insight into and management of energy usage and emissions through our cloud management services. Our IT processes manage virtualized infrastructure resources and private and public cloud. Examples of these services are Wavefront, Cost Insight, and Network Insight. Wavefront monitors the performance and resource utilization of applications. Cost Insight shows the cost of running workloads in public and private clouds. Network Insight maps the flow of application traffic between clouds and data centers. For more details, please reference VMware's annual report on Form 10-K for the fiscal year ended February 2, 2018.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Potential financial impact

80000000

Explanation of financial impact

The increased demand would positively impact our revenue. In general, a 1% increase in revenue equates to approximately \$80 million USD.

Strategy to realize opportunity

This group of products is managed by our Cloud Management Business Unit, which is part of the larger Software-Defined Data Center (SDDC) group. These products are available on the market and we have annual releases that provide more robust features to support our clients with their requirements. An example of extending our products to enable the enhanced management of energy/GHG emissions would be to incorporate additional metrics to the dashboards of our vRealize Operations products. We are exploring this with our internal teams and will be soliciting customer feedback on requirements. Our SDDC technologies form the foundation of our customers' private cloud environments and provide the capabilities for our customers to extend their private cloud to the public cloud and to help them run, manage, secure and connect all their applications across all clouds and devices.

Cost to realize opportunity

14000000

Comment

If we were to allocate 10% of our Research and Development expenses toward this effort, this would result in a cost of \$14,000,000 based on our FY18 financials.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Increased revenue through demand for lower emissions products and services

Company- specific description

In the event of a natural disaster, including climate-driven extreme weather events, VMware provides fast and reliable IT disaster recovery products and services - within our VMware Site Recovery Manager suite of products - in order to protect against site failures. Our products enable our customers to perform frequent, non-disruptive testing to ensure IT disaster recovery predictability and compliance and achieve fast and reliable recovery using fully-automated workflows and complementary Software-Defined Data Center (SDDC) solutions. See more at: <https://www.vmware.com/products/site-recovery-manager.html>.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Potential financial impact

80000000

Explanation of financial impact

Opportunities to support our customers with their disaster recovery would increase our revenue. In general, a 1% increase in revenue equates to approximately \$80 million USD.

Strategy to realize opportunity

Our group of products and features related to disaster recovery is managed by our Storage and Availability Business Unit, which is a part of the larger Software-Defined Data Center (SDDC) group. In the event of a disaster, we are able to provide additional support resources from other product groups to support any increase in demand for our VMware Site Recovery Manager. An example of this in action is BSN INET in Japan using VMware Site Recovery Manager to join partner data centers in different regions via VMware-based virtual infrastructure and using VMware Site Recovery Manager and vCenter Operations Management Suite to fully automate complex disaster recovery processes. This enabled: fully automating their disaster recovery; clearly documenting the recovery process; highly optimized operational procedures, and; greatly enhanced testing facilities. As a result of VMware's cloud management solutions, the company has substantially improved the efficiency of its operations, and by partnering with other cloud service providers it has created a shared infrastructure that is highly resilient to natural disasters. For more details on this story, see <http://www.vmware.com/files/pdf/customers/VMware-BSN-INET-13Q1-EN-Case-Study.pdf>. You can find related stories at: <https://www.vmware.com/company/customers.html#product=vmware-site-recovery-manager>.

Cost to realize opportunity

14000000

Comment

This product is part of the Storage and Availability Business Unit and is a mature product that requires fewer resources and already has dedicated support, which accounts for approximately 7% of our overall support. Our disaster recovery products are deployed across many of our current customers. As previously stated, in the event of a disaster we are able to provide additional support resources from other product groups to support any increase in demand for VMware Site Recovery Manager. Given the nature of managing disaster recovery, it is difficult to predict demand cycles. If we were to allocate 10% of our Research and Development expenses toward this effort, this would result in a cost of \$14,000,000 based on our FY18 financials.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of new technologies

Type of financial impact driver

Reputational benefits resulting in increased demand for goods/services

Company- specific description

We are in the early planning process for the installation of a microgrid on our 105-acre campus (our Palo Alto HQ). A full-scale Community Microgrid would provide local renewable power to an entire substation grid area, allowing the benefits of renewable generation, energy storage, and emergency back-up power to be realized by an entire community. There is a range of environmental, economic, and resilience benefits to this project. In addition, the project may expand electric vehicle charging infrastructure at VMware, improving the company's Scope 3 carbon emissions related to employee commuting.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium

Potential financial impact

80000000

Explanation of financial impact

It is difficult to quantify; however, if this project increases our revenue by 1%, that equates to approximately \$80 million USD.

Strategy to realize opportunity

We have collaborated with external consultants and formed an internal team to move the microgrid project forward. We are taking a phased approach and will be starting with a pilot with plans to maximize the opportunities across our Palo Alto HQ campus; including battery storage, additional onsite solar and EV charging infrastructure.

Cost to realize opportunity

40000000

Comment

This cost is a very rough estimate based on one of many scenarios that are being reviewed.

Identifier

Opp4

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Increased revenue through demand for lower emissions products and services

Company- specific description

VMware Cloud on AWS allows customers to easily migrate their on-premises workloads to the public cloud. This gives customers the ability to shut down data centers while using centralized cloud infrastructure for performance and optimization. The energy avoidance of turning off a data center is enormous. Also, the infrastructure in VMware Cloud on AWS is leading edge. This means that usually, customers will see a greater virtual machine density than what they were able to obtain in their private data centers. This means less servers are used in VMware Cloud on AWS as compared to their older on-premises data centers, which are less energy efficient.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Potential financial impact

80000000

Explanation of financial impact

The increased demand would positively impact our revenue. In general, a 1% increase in revenue equates to approximately \$80 million USD.

Strategy to realize opportunity

Our next step related to this opportunity would be additional research and development.

Cost to realize opportunity

14000000

Comment

If we were to allocate 10% of our Research and Development expenses toward this effort, this would result in a cost of \$14,000,000 based on our FY18 financials.

Identifier

Opp5

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Increased revenue through demand for lower emissions products and services

Company- specific description

vSAN and NSX Products: As demonstrated by our compute virtualization platform, vSphere, we've supported our customers in avoiding over 540 million MT CO₂e since 2003 (White Paper referenced below). In the same vein, we provide similar offerings for our customers to reduce their storage hardware and network and security hardware footprints by using vSAN and NSX respectively. These products virtualize storage, network and security functions allowing those traditional operations to occur in a software layer; thereby, reducing the need for excess hardware, while providing a more robust set of capabilities. This also allows our customers to consume cloud services in a more efficient manner, which provide additional financial and environmental benefits. VMware's vSAN platform allows customers to migrate their virtual machines and data from large, monolithic, storage arrays to drives populated in a server they are already using for running those machines on vSphere. This gives customers the advantage of then powering off the large storage arrays resulting in the potential for power and cooling cost savings in their private cloud. VMware's NSX platform allows customers to run network and security services for their clouds in software. This reduces the need of physical switch and security hardware in their data centers and facilitates moving workloads to other clouds. The energy benefit of this is two-fold: unneeded hardware is turned off and no longer requires energy for power and cooling; furthermore, workloads can be moved to other clouds that provide better energy efficiency (or, in the future, lower carbon intensity). Please see the IDC White Paper, sponsored by VMware, "Infrastructure Virtualization Leads the Way in Reducing the Carbon Cost of Growth," August 2018. The report can be found at: <https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf>.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

High

Potential financial impact

80000000

Explanation of financial impact

The increased demand would positively impact our revenue. In general, a 1% increase in revenue equates to approximately \$80 million USD.

Strategy to realize opportunity

These products are part of the larger Software-Defined Data Center (SDDC) group. These products are currently in use and we

have annual releases that provide more robust features to support our clients with their requirements. We've quantified the environmental benefits of vSAN and NSX in our 2018 IDC White Paper, which can be found at: <https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf>. Our SDDC technologies form the foundation of our customers' private cloud environments and provide the capabilities for our customers to extend their private cloud to the public cloud and to help them run, manage, secure and connect all their applications across all clouds and devices.

Cost to realize opportunity

14000000

Comment

If we were to allocate 10% of our Research and Development expenses toward this effort, this would result in a cost of \$14,000,000 based on our FY18 financials.

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	Climate change is integrated into our business strategy, now and in the future. VMware provides cloud infrastructure and business mobility solutions that accelerate our customers' digital transformations by enabling enterprises to master a software-defined approach to business and IT. These solutions are based on our desktop, server, and data center virtualization solutions that also help customers reduce their energy costs and consumption. VMware pioneered the development of virtualization technologies and continues its legacy of transforming the way businesses build, deliver and consume IT resources by allowing organizations to manage resources across private clouds and complex multi-cloud, multi-device environments. Our products have played a major role in increasing the efficiency of IT resources and therefore reducing the consumption of energy for our customers. Server virtualization (where multiple server instances are created on one physical server machine) is a key element of cloud computing. Through virtualization solutions, the total energy required to support a given service is reduced – often dramatically – which results in lower carbon emissions. For example, every server virtualized results in an avoidance of approximately 4 tons of CO2 per year. According to a CDP report, cloud computing is a way to transition to a lower carbon business model while increasing the efficiency of business operations. Each year since 2016, we have quantified the impact our products have had on our customers by way of a commissioned study by IDC. The positive carbon impact VMware has had is significant: over 540 million metric tons of CO2e have been avoided by our customers as a result of deploying our virtualization products since 2003. Please see the IDC White Paper, sponsored by VMware, "Infrastructure Virtualization Leads the Way in Reducing the Carbon Cost of Growth," August 2018. The report can be found at: https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf .
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	Given the inherent risks faced by all businesses in today's climate, VMware has joined CDP's Supply Chain initiative. We are requesting that our suppliers submit their climate data to CDP. Our goal is to have 50% of our suppliers (by spend) disclosing to CDP by 2020.
Adaptation and mitigation activities	Impacted for some suppliers, facilities, or product lines	The aspect of climate change mitigation and adaptation, that has influenced – and drives – our strategy is primarily the opportunity to enable energy efficiency through Information Technology. Our internal sustainability strategy that we've been implementing over the last 3 years involves adaptation and mitigation activities in the form of reducing our carbon footprint, mitigating our carbon intensive activities, and addressing our water footprint in water-stressed regions where we operate.
Investment in R&D	Impacted	We have made, and expect to continue to make, significant investments in research and development ("RandD"). We have assembled an experienced group of developers with systems management, public and private cloud, desktop, digital mobility, security, applications, software-as-a-service, networking, storage and open source software expertise. We also have strong ties to leading academic institutions around the world, and we invest in joint research with academia. We prioritize our product development efforts through a combination of engineering-driven innovation and customer- and market-driven feedback. Our RandD culture places a high value on innovation, quality and open collaboration with our partners. We currently participate in numerous standards groups, and VMware employees hold a variety of standards organization leadership positions. Our RandD expenses totaled \$1,755 million, \$1,503 million and \$1,300 million and \$150 million during the fiscal years ended February 2, 2018, December 31, 2016 and December 31, 2015 and the Transition Period, respectively. We continue to invest in our key growth products, including NSX and vSAN, while also investing in areas that we expect to be significant growth drivers in future periods.
Operations	Impacted	The microgrid is just one example of what is possible when it comes to innovating how we operate. Our operations are positively impacted by our innovation and efficiency, and we constantly seek to do more with less.
Other, please specify	Please select	

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	Our revenue would be negatively impacted if our reputation declined. The forecasted revenue or changes in revenue related to our opportunities are not attributable to any "new" features; however, we believe over time, that these product lines will meet or exceed their growth projections due to the more and more visible impacts of climate change and the need to decouple growth from resource consumption.
Operating costs	Impacted for some suppliers, facilities, or product lines	Operating costs would be impacted if we were to install a microgrid by significantly reducing our electricity demand charges. The costs associated with managing the risks – such as, disaster recovery – are already accounted for within our Enterprise Resilience Business Units.
Capital expenditures / capital allocation	Impacted for some suppliers, facilities, or product lines	Each year, we put together an operating budget for future capital expenditures. All of our energy-efficiency and other related real estate projects are budgeted for each year by the Real Estate and Workplace teams.
Acquisitions and divestments	We have not identified any risks or opportunities	
Access to capital	We have not identified any risks or opportunities	
Assets	We have not identified any risks or opportunities	
Liabilities	We have not identified any risks or opportunities	
Other	Please select	

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

Climate change is integrated into our business strategy, now and in the future. VMware provides cloud infrastructure and business mobility solutions that accelerate our customers' digital transformations by enabling enterprises to master a software-defined approach to business and IT. These solutions are based on our desktop, server, and data center virtualization solutions that help

customers reduce their energy costs and consumption. VMware pioneered the development of virtualization technologies and continues its legacy of transforming the way businesses build, deliver and consume IT resources by allowing organizations to manage resources across private clouds and complex multi-cloud, multi-device environments. Our products have played a major role in increasing the efficiency of IT resources and therefore reducing the consumption of energy for our customers. Server virtualization (where multiple server instances are created on one physical server machine) is a key element of cloud computing.

Through virtualization solutions, the total energy required to support a given service is reduced – often dramatically – which results in lower carbon emissions. For example, every server virtualized results in an avoidance of approximately 4 tons of CO₂ per year. According to a CDP report, cloud computing is a way to transition to a lower carbon business model while increasing the efficiency of business operations. Each year (since 2016), we quantify the impact our products have had on our customers by way of a commissioned study by IDC. The positive carbon impact VMware has had is significant: over 540 million metric tons of CO₂e have been avoided by our customers as a result of deploying our virtualization products since 2003. Please see the IDC White Paper, sponsored by VMware, "Infrastructure Virtualization Leads the Way in Reducing the Carbon Cost of Growth," August 2018. The report can be found at: <https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf>.

In 2017, we made a substantial business decision to reach our 2020 goal of carbon neutrality two years early, in 2018. This decision required re-prioritizing our work, cross-functional collaboration and re-allocation of funds to make this happen. We are aiming to not only announce the achievement of this goal in 2018 but also to be formally certified as a CarbonNeutral company. We believe that certification is critical to demonstrate leadership, differentiate from competitors and engage stakeholders. CarbonNeutral certification enables us to demonstrate the quality of our carbon neutral action by following a robust, credible, third-party framework that is internationally accepted and scientifically informed. We are proud to take voluntary action in the international drive to limit global warming to below 2°C.

The aspect of climate change mitigation and adaptation, that has influenced – and drives – our strategy is primarily the opportunity to enable energy efficiency through software. Our climate change strategy is informed by our customers, operations and employees. Our short and long-term initiatives are defined below within the framework of our customers, operations and employees.

Customers:

VMware's focus on enabling our customers' digital transformations, allowing for maximizing performance and resilience, driving down costs, reducing inefficiencies and minimizing energy use is an important element in addressing climate change challenges. As noted above, we've quantified the environmental impact of our products by way of our commissioned white paper with IDC. In 2017 alone, our customers avoided over 84 million metric tons through the use of our virtualization products. Our short-term strategy is to address servers and desktops that are not virtualized yet, which are still consuming 70-80% of their rated power even when idle.

Having pioneered x86 virtualization in the IT sector, VMware has an enormous strategic advantage over our competitors. As a result, today we are deeply embedded in our customers' IT infrastructures and are therefore positioned to build upon that strategic advantage to further our reach from the desktop to the data center. Our long-term strategy – that has been influenced by various climate change factors described above – is to include sustainability features in every product release and will include a focus on quantifying costs and emissions avoided for customers.

Operations:

The need to reduce GHG emissions and mitigate climate change is an integral part of our operational goals and explicitly linked to an emissions reduction target. Our short and long-term strategies are influenced by climate change risks and opportunities and informed by:

- analysis of the impacts of our business (scopes 1,2 and 3),
- materiality assessment process (engaging internal and external stakeholders), and
- evaluating climate-related information and benchmarking against peers

With our commitment to achieve carbon neutrality by 2020, we've taken an incremental approach that includes ramping up to 100% over the next 3 years. We believe this is more sustainable for the business and enables us to work toward integrating an internal carbon fee into the organization's operating expenses. Our short and long-term strategies are also informed by VMware's proactive sustainability practices in the past. Historically, we have implemented numerous energy initiatives – from LEED-certified buildings to purchasing 100% clean energy for our HQ campus in Palo Alto, California and our data center in Wenatchee, Washington.

Employees:

Central to our long-term strategy is to shift the behaviours and aspirations of our employees through both incentives and engagement. One of our competitive advantages is the ability to recruit and retain top talent, many of whom increasingly care about the broader impact of our products and the way we engage on global social and environmental issues, like climate change. We offer a multitude of environmentally responsible practices and amenities in the workplace, including our commitment to provide compensation to employees using public transit to get to/from work. We provide free EV charging infrastructure to move than 400 registered users on our Palo Alto HQ campus. We also provide opportunities to benefit from programs for discounted residential solar power to zero-emission vehicles. We are exploring programs that will enable employees to opt-in to offset carbon in their personal lives.

C3.1d

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

Climate-related scenarios	Details
2DS	VMware has completed a quantitative and qualitative climate-related scenario analysis for the purposes of understanding and evaluating the implications of setting a science-based target to reduce our emissions. The SBT methods considered include CDP criteria, which utilizes the RCP 2.6 scenario, as well as SBTi criteria utilizing 2DS scenario. These were selected based on their applicability and use for evaluating a science-based target. The analysis included taking into account, as well as decoupling our company’s business and emissions growth trajectories including facilities, data centers and labs, and employees and applied forecasted trends using a vetted set of KPI’s from the business to project our GHG emissions inventory and determine a business-as-usual (BAU) scenario. Assumptions around our future growth rates, sales, employee headcount and square footage of real estate were used. Our analysis included both medium- and long-term time horizons as prescribed by SBTi and CDP (5-15 years and 15+, 15+ years, respectively), as we wanted to use this goal setting exercise to meet or exceed the SBTi criteria. The SBT assessment applies to our company as a whole, per our operating boundary for scope 1 and 2 emissions, and relies on assumptions and inputs from specific business groups including facilities, data center labs, real estate and finance. Results of the analysis indicate that VMware would need to achieve reductions ranging from 25% or 55% for the medium- and long-term timeframes, respectively. Results of this analysis were used to inform our objectives and corporate strategy by providing us with reference points to determine feasibility and plans of action to reduce our emissions. The analysis demonstrated that energy efficiency measures alone would not be sufficient to achieve such an ambitious goal, whereas our planned and in progress commitment to achieve RE100 has now become a central initiative that will enable us to achieve our target. Specifically, the analysis has influenced our strategy in the form of raising the importance of a progressive renewable energy procurement strategy, and will influence our future decisions to consider moving beyond solely purchasing renewable energy credits to achieve our RE100 commitment. We used, and will continue to use, the analysis to provide specific details around the types of projects, both renewable energy focused and for energy efficiency, that we expect to implement for achieving our target.
RCP 2.6	VMware has completed a quantitative and qualitative climate-related scenario analysis for the purposes of understanding and evaluating the implications of setting a science-based target to reduce our emissions. The SBT methods considered include CDP criteria, which utilizes the RCP 2.6 scenario, as well as SBTi criteria utilizing 2DS scenario. These were selected based on their applicability and use for evaluating a science-based target. The analysis included taking into account, as well as decoupling our company’s business and emissions growth trajectories including facilities, data centers and labs, and employees and applied forecasted trends using a vetted set of KPI’s from the business to project our GHG emissions inventory and determine a business-as-usual (BAU) scenario. Assumptions around our future growth rates, sales, employee headcount and square footage of real estate were used. Our analysis included both medium- and long-term time horizons as prescribed by SBTi and CDP (5-15 years and 15+, 15+ years, respectively), as we wanted to use this goal setting exercise to meet or exceed the SBTi criteria. The SBT assessment applies to our company as a whole, per our operating boundary for scope 1 and 2 emissions, and relies on assumptions and inputs from specific business groups including facilities, data center labs, real estate and finance. Results of the analysis indicate that VMware would need to achieve reductions ranging from 25% or 55% for the medium- and long-term timeframes, respectively. Results of this analysis were used to inform our objectives and corporate strategy by providing us with reference points to determine feasibility and plans of action to reduce our emissions. The analysis demonstrated that energy efficiency measures alone would not be sufficient to achieve such an ambitious goal, whereas our planned and in progress commitment to achieve RE100 has now become a central initiative that will enable us to achieve our target. Specifically, the analysis has influenced our strategy in the form of raising the importance of a progressive renewable energy procurement strategy, and will influence our future decisions to consider moving beyond solely purchasing renewable energy credits to achieve our RE100 commitment. We used, and will continue to use, the analysis to provide specific details around the types of projects, both renewable energy focused and for energy efficiency, that we expect to implement for achieving our target.

C4. Targets and performance

C4.1

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

Both absolute and intensity targets

C4.1a

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

Target reference number

Abs 1

Scope

Scope 1 +2 (market-based)

% emissions in Scope

100

% reduction from base year

35

Base year

2016

Start year

2017

Base year emissions covered by target (metric tons CO2e)

31200

Target year

2030

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

% achieved (emissions)

15

Target status

New

Please explain

The percentage achieved is a result of the reduction in our Scope 1 and 2 emissions since 2016.

C4.1b

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

Target reference number

Int 1

Scope

Scope 2 (market-based)

% emissions in Scope

100

% reduction from baseline year

10

Metric

Metric tons CO2e per unit revenue

Base year

2015

Start year

2016

Normalized baseline year emissions covered by target (metric tons CO2e)

4.58

Target year

2020

Is this a science-based target?

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

% achieved (emissions)

34

Target status

Underway

Please explain

We set our first formal target in 2015, which is to reduce our carbon emissions intensity 10% for our Scope 2 market-based emissions by 2020. Our normalized base year emissions covered by target were calculated by dividing our market-based MT CO2e by our FY15 revenue in millions (30,106 MT CO2e/\$6,571). It is important to note that many efficiencies are factored into our 2015 base year. Since our founding in 1998, the company has made many proactive sustainability decisions beyond the transformational products that have enabled energy efficiencies across the IT Sector for over a decade. Each year we have continued this investment, whether it's procuring a data center in Wenatchee, Washington that is 100% clean-powered by the local utility to achieving LEED certification for various sites around the world. In 2017, we're proud to report that our absolute emissions decreased while our revenue increased by 12%. In 2017, we achieved an intensity metric of 3.02 MT CO2e per revenue in millions. This is a 34% decrease from our base year, surpassing our 10% reduction goal. In 2015, this intensity metric was 4.58 MT CO2e. To continue meeting this intensity target over the next year, VMware will continue to aggressively pursue energy efficiency in our facilities, operations and data center. Note: the intensity figure above (4.58) is calculated with our revenue in millions. We have continued this format for consistency since this is how this metric has been reported in previous years.

% change anticipated in absolute Scope 1+2 emissions

16

% change anticipated in absolute Scope 3 emissions

0

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1a/b.

Target

Renewable energy consumption

KPI – Metric numerator

KPI – Metric denominator (intensity targets only)

Base year

2015

Start year

2016

Target year

2020

KPI in baseline year

KPI in target year

% achieved in reporting year

77

Target Status

Underway

Please explain

We increased our global consumption of renewable energy from 72% in 2016 to 77% in 2017. We have a detailed plan to support us in achieving our goal of 100% renewable energy by 2020. Please see VMware's Global Impact Report for more information on our corporate sustainability goals.

Part of emissions target

Is this target part of an overarching initiative?

RE100

Target

Waste

KPI – Metric numerator

KPI – Metric denominator (intensity targets only)

Base year

2015

Start year

2016

Target year

2020

KPI in baseline year

KPI in target year

% achieved in reporting year

91

Target Status

Underway

Please explain

Our waste diversion rate decreased from 95% to 91% because we increased our coverage to 50% of our sites globally. The 95% diversion rate was applicable to our Palo Alto location, which makes up 33% of our global real estate portfolio. We anticipated this given our unusually high diversion rate in Palo Alto and are aiming to increase the diversion rate at our remaining sites by implementing best practices from Palo Alto. Please see VMware's Global Impact Report for more information on our corporate sustainability goals.

Part of emissions target

Is this target part of an overarching initiative?

Other, please specify (VMware's 2020 Vision & Goals)

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 projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	1	
To be implemented*	0	0
Implementation commenced*	0	0
Implemented*	11	2479
Not to be implemented	0	0

C4.3b

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

Activity type

Energy efficiency: Building services

Description of activity

Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

189.03

Scope

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

54751

Investment required (unit currency – as specified in CC0.4)

436330

Payback period

4 - 10 years

Estimated lifetime of the initiative

11-15 years

Comment

Lighting retrofit

Activity type

Energy efficiency: Building services

Description of activity

Building controls

Estimated annual CO2e savings (metric tonnes CO2e)

1088.13

Scope

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

601000

Investment required (unit currency – as specified in CC0.4)

503290

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Submetering and installation of enterprise energy management systems.

Activity type

Energy efficiency: Building services

Description of activity

HVAC

Estimated annual CO2e savings (metric tonnes CO2e)

1202

Scope

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

25000

Investment required (unit currency – as specified in CC0.4)

250000

Payback period

4 - 10 years

Estimated lifetime of the initiative

21-30 years

Comment

C4.3c

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

Method	Comment
Dedicated budget for energy efficiency	VMware has a dedicated budget for operational energy efficiency across our global facilities portfolio. In addition, we are in the process of developing a separate capital budget to fund projects globally in an effort to expedite those with deep energy savings by 2020.
Compliance with regulatory requirements/standards	Certain projects may be necessary to meet or exceed regulatory or customer compliance requirements. In such cases, compliance would be the driver and objective.
Partnering with governments on technology development	VMware supports a pilot project with a software startup, Measurabl, and the City of Palo Alto, which will enable and streamline municipal-level sustainability reporting to CDP as well as small businesses sustainability disclosure.
Internal incentives/recognition programs	In 2017, VMware sponsored SunShares for the third consecutive year, enabling our employees to reduce their carbon emissions at home. SunShares is a solar bulk purchase program that is available for all of our California employees. This program contributed 1.1 Megawatt of new solar capacity through central and northern California. For our U.S. employees outside of California, we have several partnerships with solar providers that provide corporate discounts. We are working with Human Resources to expand these types of services globally. We look forward to deepening our engagement with employees around living sustainably over the next year.
Employee engagement	We have a unique professional development opportunity for our employees called a "Take 3." This enables an employee to work in a different group for three months as a respite from their normal work and as a way to broaden their understanding of how the organization works. Our sustainability team actively recruits employees for Take 3 opportunities and we've had great success in leveraging these (new) relationships to support us in more effectively communicating with various business units, and increasing engagement in our sustainability strategy overall. We also engage our employees on a regular basis through various communication channels, including our enterprise collaboration platform, Socialcast. It is here where employees can have active dialogues about the issues they care about including sustainability. We've seen an increase in participation since last year and regularly develop and share content to drive engagement.

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.

Level of aggregation

Group of products

Description of product/Group of products

Since its inception, VMware has avoided over 540 million tons of carbon from the air – or over one trillion automobile miles – through virtualization, as measured through its work with the International Data Corporation (IDC). Over time, VMware has expanded its focus from computing to storage and networking through its vSAN technology, increasing its ability to reduce CO2 emissions. VMware was the first company to articulate a vision for the Software-Defined Data Center (SDDC), where increasingly, infrastructure is virtualized, enabling management of the data center to be entirely automated by software, from one, unified platform. Traditional data centers are loose collections of technology silos where each application type has its own vertical stack consisting of a CPU and operating system, storage pool, networking and security, and management systems. Over time, costs to maintain the data center infrastructure have been increasing because the data center environment has become divergent, leading to higher complexity. The increased complexity of the data center demands constantly increasing resources to manage and maintain the IT infrastructure. The SDDC is designed to transform the data center into an on-demand service that addresses application requirements by abstracting, pooling and automating the services that are required from the underlying hardware. SDDC promises to dramatically simplify data center operations and lower costs. Additionally, through the consolidation benefits of SDDC we optimize/maximize the usage of compute, network and storage equipment, thereby reducing waste in spare and under-utilized equipment – directly avoiding GHG emissions. Our SDDC architecture consists of four main product categories: 1) Compute, 2) Storage and Availability, 3) Network and Security, and 4) Management and Automation.

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

70

Comment

For every server virtualized, we estimate that 4 tons of CO₂e per year are avoided. In 2018, VMware commissioned its third study with IDC to quantify the impact of our products. The IDC white paper shows that VMware's virtualization products have avoided over 540 million MT CO₂e for our customers over the last 15 years. This study demonstrates VMware's positive carbon impact and has enabled us to engage more deeply with our customers around their environmental goals. This research provides a baseline for further efforts to quantify the impact of our other software products. The IDC White Paper referenced above is entitled "Infrastructure Virtualization Leads the Way in Reducing the Carbon Cost of Growth," dated August 2018 and can be found at: <https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf>.

Level of aggregation

Group of products

Description of product/Group of products

Our End-User Computing (EUC) portfolio enables IT organizations to efficiently deliver more secure access to applications, data and devices for their end users. Our solutions provide end users a digital workspace, within which they can deliver any application to any device in an increasingly mobile-cloud era, while supporting corporate IT with appropriate management and security to networks, preventing data loss, and enabling a high-quality of service on premises or in the cloud. Our solutions are designed to optimize simplicity and choice to end users, while providing security and control to corporate IT. EUC's product portfolio consists of our AirWatch unified endpoint management solutions, our Horizon application and desktop virtualization solutions, and a set of common services such as VMware Identity Manager. We have combined these solutions into a single offering, Workspace ONE, which brings together application and access management, unified endpoint management, and virtual application delivery. This solution provides customers with a complete digital workspace which leverages our software-defined data center solutions so that customers can extend the value of virtualization from their data center to their devices.

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

30

Comment

Our Horizon desktop products power end user desktops directly from the data center, and for every server virtualized in the data center, we estimate 4 tons of CO₂ per year are avoided. When considering the entire lifecycle, cradle-to-grave, thin clients offer numerous environmental benefits. These include energy efficiency, a longer life-span, improved reliability, less packaging, and fewer raw materials. Please see the IDC White Paper, sponsored by VMware, "Infrastructure Virtualization Leads the Way in Reducing the Carbon Cost of Growth," August 2018. The report can be found at: <https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf>.

C5. Emissions methodology

C5.1

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

Scope 1

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

4878

Comment

Scope 2 (location-based)

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

71230

Comment

Scope 2 (market-based)

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

30106

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

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

C6. Emissions data

C6.1

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

Row 1

Gross global Scope 1 emissions (metric tons CO2e)

3996

End-year of reporting period

<Not Applicable>

Comment

Our gross global Scope 1 emissions are 3,996 MT CO2e; however, as of July 1, 2017, the City of Palo Alto provides VMware's Palo Alto campus with carbon neutral natural gas. This results in a net Scope 1 emissions of 2,555 MT CO2e.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

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

Row 1

Scope 2, location-based

59466

Scope 2, market-based (if applicable)

23911

End-year of reporting period

<Not Applicable>

Comment

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 Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, not yet calculated

Metric tonnes CO2e

Emissions calculation methodology

VMware uses Environmentally Extended Economic Input Output (EEIO) lifecycle analysis (LCA) emissions factors to quantify the emissions associated with its annual supplier and procurement purchasing activity. Annualized spend data is mapped to corresponding scope 3 categories, supplier categories, and industry sectors and is then multiplied by cradle-to-gate LCA emission factors for the sector to provide an estimated carbon emissions associated with the extraction, production and transport of purchased goods and services acquired or purchased by VMware in the reported year. Supplier spend activity that was already included in Scope 1 or 2 (such as electricity purchases from leased buildings) and other Scope 3 categories (such as upstream leased assets) that could be further defined to a GHG Protocol scope 3 category were removed from the Purchased Goods and Services category to prevent double counting. This may represent an under- or over- reporting of emissions in certain supplier categories and specific suppliers based on available spend data due to the nature of cost and accrual accounting. We anticipate improving the methodology and availability data in the future which will impact our year-on-year reporting and trends over time.

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

0

Explanation

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

40547

Emissions calculation methodology

VMware uses Environmentally Extended Economic Input Output (EEIO) lifecycle analysis (LCA) emissions factors to quantify the emissions associated with its annual supplier and procurement purchasing activity. Annualized spend data is mapped to corresponding scope 3 categories, supplier categories, and industry sectors and is then multiplied by cradle-to-gate LCA emission factors for the sector to provide an estimated carbon emissions associated with the extraction, production and transport of capital goods acquired or purchased by VMware in the reported year. We have elected to use this methodology over using a single generic emissions factor (EF) for 'all' capital goods as reported, to enable better visibility into specific capital good categories by spend and carbon impact. Supplier spend activity that was already included in Scope 1 or 2 (such as electricity consumption from owned IT hardware) and other Scope 3 categories (such as upstream leased assets) that could be further defined to a GHG Protocol scope 3 category were removed from the Capital Goods category to prevent double counting. This may represent an under- or over- reporting of emissions in certain supplier categories and specific suppliers based on available spend data due to the nature of cost and accrual accounting. We anticipate improving the methodology and availability data in the future which will impact our year-on-year reporting and trends over time.

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

0

Explanation

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

Evaluation status

Relevant, calculated

Metric tonnes CO2e

0.73

Emissions calculation methodology

Transmission and Distribution losses are calculated using emissions factors from The World Bank "World Development Indicators: Electric power transmission and distribution losses (% of output)" last updated 2016, as well as US Energy Information Administration EIA US Transmission and Distribution losses. Emissions associated with losses were calculated by multiplying the energy use by type by emission factors from eGRID or International Energy Agency (IEA) "CO2 Emissions from Fuel Combustion," 2016 Edition, Section II. All GWPs are from the IPCC Fourth Assessment Report (GWP for CH4 = 25, GWP for N2O = 298), consistent with reporting under the United Nations Framework Convention on Climate Change (UNFCCC).

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

0

Explanation

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

3500

Emissions calculation methodology

VMware uses Environmentally Extended Economic Input Output (EEIO) lifecycle analysis (LCA) emissions factors to quantify the emissions associated with its annual supplier & procurement purchasing activity. Annualized spend data is mapped to corresponding scope 3 categories, supplier categories, and industry sectors and is then multiplied by cradle-to-gate LCA emission factors for the sector to provide an estimated carbon emissions associated with the extraction, production and transport of capital goods acquired or purchased by VMware in the reported year. This may represent an under- or over- reporting of emissions in certain supplier categories and specific suppliers based on available spend data due to the nature of cost and accrual accounting. We anticipate improving the methodology and availability data in the future which will impact our year-on-year reporting and trends over time.

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

0

Explanation

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

91

Emissions calculation methodology

VMware uses the EPA's WARM methodology which assigns values to each material that gets, landfilled, recycled and composted, along with GHG Protocol's guidance on waste generated in operations to calculate the emissions associated with waste generated in our global operations.

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

33

Explanation

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

46840

Emissions calculation methodology

Business travel is calculated using the distance method to determine the distance traveled by plane for each flight with an additional emissions cost per segment added to account for takeoff. Flight travel data is provided by VMware's travel vendor Amex.

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

98

Explanation

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

46352

Emissions calculation methodology

We estimated Scope 3 employee commute emissions using internal data. Our sample's calculations included full-time, commuting only employees from top 15 global locations (top 5 from each geographic region). We then performed surveys to reflect estimated geographical differences in distance traveled, commuter mode and number of working days. Estimate sample calculation includes vehicle and passenger miles and represents about 60% of global commuters. For the remaining 40% of commuting employees emissions calculations, we used vehicle miles and US average commute distance and working days. And for final calculations, we utilized the 2017 EPA SGEC tool.

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

100

Explanation

Upstream leased assets

Evaluation status

Relevant, calculated

Metric tonnes CO2e

13493

Emissions calculation methodology

VMware uses Environmentally Extended Economic Input Output (EEIO) lifecycle analysis (LCA) emissions factors to quantify the emissions associated with its annual supplier and procurement purchasing activity. Annualized spend data is mapped to corresponding scope 3 categories, supplier categories, and industry sectors and is then multiplied by cradle-to-gate LCA emission factors for the sector to provide an estimated carbon emissions associated with the extraction, production and transport of upstream leased assets acquired or purchased by VMware in the reported year. Supplier spend activity that was already included in Scope 1 or 2 (such as electricity consumption from colocation data centers) that could be further defined to a GHG Protocol scope 3 category were removed from the Upstream Leased Assets category to prevent double counting. This may represent an under- or over- reporting of emissions in certain supplier categories and specific suppliers based on available spend data due to the nature of cost and accrual accounting. We anticipate improving the methodology and availability data in the future which will impact our year-on-year reporting and trends over time.

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

0

Explanation

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

VMware is part of the IT Service industry and does not produce a significant amount of physical products to transport or distribute.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

VMware is part of the IT Service industry and does not produce a significant amount of physical products for sale for customer use.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

VMware is part of the IT Service industry and does not produce a significant amount of physical products for sale for customer use, nor do the products VMware sells produce a significant amount of direct emissions from their use phase.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

VMware is part of the IT Service industry and does not produce a significant amount of physical products for sale.

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

Explanation

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

VMware does not have significant leased spaces.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

VMware does not have any franchises.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

VMware does not have any significant investments to report.

Other (upstream)

Evaluation status

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Other (downstream)

Evaluation status

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered 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

0.0000035

Metric numerator (Gross global combined Scope 1 and 2 emissions)

27907

Metric denominator

unit total revenue

Metric denominator: Unit total

7922000000

Scope 2 figure used

Market-based

% change from previous year

11

Direction of change

Decreased

Reason for change

The 11% decrease in our emissions intensity from last year is due to a number of emissions reduction activities, including energy-efficiency projects that were implemented across our global portfolio. We're proud of the fact that we reduced our Scope 1 and 2 emissions intensity by 11% in the past year. Additionally, we were able to experience 12% financial growth while reducing our Scope 2 location-based emissions by 13%—proof that business fundamentals and environmental responsibility can go hand in hand.

Intensity figure

2.69

Metric numerator (Gross global combined Scope 1 and 2 emissions)

59466

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

22099

Scope 2 figure used

Location-based

% change from previous year

22

Direction of change

Decreased

Reason for change

The 22% decrease in our emissions intensity from last year is due to a number of emissions reduction activities, including energy-efficiency projects that were implemented across our global portfolio.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?

Yes

C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	2774	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	6	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	1	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	1215	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	3628
Ireland	3
Bulgaria	2
United Kingdom of Great Britain and Northern Ireland	26
India	337

C7.3

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

By activity

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Natural Gas	2383
Diesel	390
Fleet	9
Refrigerants	1215

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Singapore	248.13	248.04	581.43	0
United States of America	30528	0	98146	98146
Malaysia	58.37	59.22	89.68	0
Thailand	35.48	35.48	68.82	0
Costa Rica	154.29	154.29	3672.24	0
Armenia	68.61	68.61	622.56	0
Saudi Arabia	69.48	69.48	91.48	0
Netherlands	65.59	0	174.11	174.11
Viet Nam	3.23	3.23	8.36	0
Sweden	4.65	0	107.35	107.35
South Korea	55.26	55.26	107.8	0
Pakistan	5.57	5.57	12.11	0
Ireland	1751	0	3668	3668
China	3109	3109	4174	0
Poland	45.46	0	70.76	70.76
Brazil	9.23	9.23	139.09	0
Chile	8.43	8.43	22.49	0
Bulgaria	1940	0	4166	4166
France	27.93	0	303.34	303.34
Argentina	17.94	17.94	50.17	0
Japan	789.16	789.16	1893	0
United Kingdom of Great Britain and Northern Ireland	745.17	0	1650	1650
United Arab Emirates	124.81	124.81	197.03	0
Switzerland	2.93	0	69.43	69.43
Spain	9.05	0	30.06	30.06
India	17691	17691	18551	0
New Zealand	5.29	5.29	31.37	0
Canada	5.54	5.54	21.37	0
Czechia	6.15	0	11.9	11.9
Turkey	36.45	36.45	75.6	0
Taiwan (Province of China)	24.81	24.81	48.41	0
Denmark	12.66	0	41.52	41.52
Mexico	41.13	41.13	89.96	0
Italy	74.65	0	192.08	192.08
Israel	756.53	756.53	1085	0
Australia	592.5	592.5	692.87	0
Germany	337.15	0	779.16	779.16
Austria	5.37	0	32.45	32.45

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.

Activity	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Electricity	59466	23911

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	3843	Decreased	12	In 2017, we increased our overall consumption of renewable energy for our portfolio 5% - from 72% to 77% globally. The change in emissions is the reduction in our Scope 2 market-based emissions from 2016 to 2017. The Emissions value is the delta between our Scope 2 totals for 2016 and 2017, divided by 2016 Scopes 1 and 2. Scope 2 references are to our market-based figures.
Other emissions reduction activities	2479	Decreased	8	The numerous and varied proactive emissions reductions activities VMware implemented at owned and leased facilities worldwide in 2017 resulted in significant energy savings and corresponding emissions avoidance of more than 2,479 MT CO2e. The emissions value was derived by dividing the change in emissions by our 2016 Scope 1 and 2 market-based emissions.
Divestment		<Not Applicable>		VMware divested vCloudAir in 2017; however, this did not impact our carbon emissions.
Acquisitions		<Not Applicable>		VMware acquired Wavefront and Aptelligent in 2017; however, these did not impact our carbon emissions.
Mergers		<Not Applicable>		There were no mergers that impacted our emissions.
Change in output		<Not Applicable>		
Change in methodology		<Not Applicable>		In 2017, we purchased energy instruments to progress toward 100% renewable energy.
Change in boundary		<Not Applicable>		There were no changes in boundary that impacted our emissions.
Change in physical operating conditions		<Not Applicable>		There were no changes in physical operating conditions that impacted our emissions.
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	14569	14569
Consumption of purchased or acquired electricity	<Not Applicable>	83398	59387	142785
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	83398	73956	157354

C8.2b

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

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

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

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

13036

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1533

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Diesel

Emission factor

10.36

Unit

kg CO2e per gallon

Emission factor source

2017 Climate Registry Default Emission Factors

Comment

Natural Gas

Emission factor

0.182

Unit

metric tons CO2e per MWh

Emission factor source

2017 Climate Registry Default Emission Factors

Comment

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor

Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company

Low-carbon technology type

Solar PV

MWh consumed associated with low-carbon electricity, heat, steam or cooling

919

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

We have onsite solar panels at our Palo Alto campus.

Basis for applying a low-carbon emission factor

Contract with suppliers or utilities (e.g. green tariff), not supported by energy attribute certificates

Low-carbon technology type

Solar PV

Wind

Hydropower

MWh consumed associated with low-carbon electricity, heat, steam or cooling

82479

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

Our local utility providers in Palo Alto, California and Wenatchee, Washington, the City of Palo Alto Utilities and Douglas County PUD respectively, provide 100% clean electric power to our facilities in those locations. This is the total consumption for those two locations.

Basis for applying a low-carbon emission factor

Energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Solar PV

Wind

MWh consumed associated with low-carbon electricity, heat, steam or cooling

27069

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

VMware purchased 30,000 MWh of 2017 United States Green-e Energy certified Renewable Energy Certificates (RECs), 2,797 MWh REGO and 9,620 MWh EKOenergy Guarantees of Origin EACs in Europe. These energy instruments covered the entirety of the United States and European portfolio electricity consumption that was not already using renewable energy. 15,445.84 MWh of the RECs were unapplied. VMware invested in the energy instruments in alignment with our long-term strategy to support growth of the US and European renewable energy infrastructure.

C9. Additional metrics

C9.1

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

Description

Waste

Metric value

Metric numerator

Metric denominator (intensity metric only)

% change from previous year

4

Direction of change

Decreased

Please explain

Our waste diversion rate decreased from 95% to 91% because we increased our coverage to 50% of our sites globally. The 95% diversion rate was applicable to our Palo Alto location, which makes up 33% of our global real estate portfolio. We anticipated this given our unusually high diversion rate in Palo Alto and are aiming to increase the diversion rate at our remaining sites by implementing best practices from Palo Alto. Please see VMware's Global Impact Report for more information on our corporate sustainability goals.

Description

Other, please specify (Carbon Impact of Products)

Metric value

540000000

Metric numerator

Metric denominator (intensity metric only)

% change from previous year

30

Direction of change

Increased

Please explain

In 2018, for the third consecutive year, we commissioned IDC to complete a white paper including detailed calculations and a study on the impacts of VMware's virtualization products since 2003. The outcome of this research concluded that our customers have avoided over 540 million MT CO₂e as a result of our products. We look forward to continuing this positive carbon impact through the deployment of other VMware solutions. Please see the IDC White Paper, sponsored by VMware, "Infrastructure Virtualization Leads the Way in Reducing the Carbon Cost of Growth," August 2018. The report can be found at: <https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf>.

C10. Verification

C10.1

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

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

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

Scope

Scope 1

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

VMware FY18 PwC Report and Management Assertion - Final.pdf

Page/ section reference

Page 2

Relevant standard

Attestation standards established by AICPA (AT105)

Proportion of reported emissions verified (%)

100

Scope

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

VMware FY18 PwC Report and Management Assertion - Final.pdf

Page/ section reference

Page 3

Relevant standard

Attestation standards established by AICPA (AT105)

Proportion of reported emissions verified (%)

100

Scope

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

VMware FY18 PwC Report and Management Assertion - Final.pdf

Page/ section reference

Page 3

Relevant standard

Attestation standards established by AICPA (AT105)

Proportion of reported emissions verified (%)

100

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

Scope 3- at least one applicable category

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

VMware FY18 PwC Report and Management Assertion - Final.pdf

Page/section reference

Page 4

Relevant standard

Attestation standards established by AICPA (AT105)

C10.2**(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?**

Yes

C10.2a**(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?**

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Other, please specify (Energy consumption)	Attestation standards established by AICPA (AT105)	In addition to having the carbon emissions assured by PwC, they assured the total energy consumed for Scopes 1 and 2. Details can be found in the attached letter, "VMware FY18 PwC Report and Management Assertion - Final." VMware FY18 PwC Report and Management Assertion - Final.pdf
C9. Additional metrics	Other, please specify (Product carbon impact)	Commissioned study by IDC	VMware sponsored a white paper in 2018 with IDC to quantify the estimated carbon avoided through the use of our products. Please see the IDC White Paper, sponsored by VMware, "Infrastructure Virtualization Leads the Way in Reducing the Carbon Cost of Growth," August 2018. The report can be found at: https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf . IDC White Paper 2018.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, and we do not anticipate being regulated in the next three years

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.

Credit origination or credit purchase

Credit purchase

Project type

Energy distribution

Project identification

India: Harapanahalli Wind Power Project Located in the Davangere District of Karnataka, India, this wind power project delivers approximately 81,000 MWh of zero emissions renewable electricity to India's national grid each year. This plays a key role in achieving the country's 2022 green power targets, while enhancing the local economy and livelihood of residents through the creation of jobs. The project is validated and verified to the Verified Carbon Standard (VCS), and is registered with the Clean Development Mechanism (CDM). VMware has purchased 75 metric tonnes CO₂e from the Harapanahalli Wind Power Project to support LEED certification of the Beijing location. The Harapanahalli Wind Power Project in Karnataka State, India delivers zero-emissions renewable electricity to the India power grid. The project is in a rural area and the wind farm contributes to the local economy and livelihood of residents through the creation of jobs for both full time operational roles as well as temporary positions required for planning and construction. The project improves overall local air quality as it does not incur the environmental pollution or solid waste problems associates with fossil fuel power plants. Additionally consumption of large quantities of water required for generation of electricity in the current mix of power plants is avoided. Wind power contributes increased energy security and economic well-being as dependence on imported fossil fuels and the associated price variations is reduced. This project supports the following Sustainable Development Goals (SDGs): SDG 6 Clean Water and Sanitation SDG 7 Affordable and Clean Energy SDG 8 Decent Work and Economic Growth SDG 9 Industry Innovation and Infrastructure SDG 13 Climate Action

Verified to which standard

VCS (Verified Carbon Standard)

Number of credits (metric tonnes CO₂e)

75

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

75

Credits cancelled

Yes

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit purchase

Project type

Energy efficiency: households

Project identification

India: Improved Cookstoves Household air pollution is a serious public health concern in India and is attributable to around 5% of India's national burden of disease risk (higher for women and children)¹. This Gold Standard project is enabling households to significantly reduce health risks and fuel costs through the distribution of more efficient biomass cookstoves. Additionally, the manufacturing, sales and distribution of the stoves has increased employment and the sale of the efficient cookstove is subsidised to help households who are unable to afford the upfront costs. VMware has purchased 28 metric tonnes CO₂e from the India Improved Cookstove project to support CarbonNeutral® data center certification of the Wenatchee Data Center in Washington State, USA. India uses the greatest amount of fuel wood of any country in the world. This project enables households to significantly reduce health risks and fuel costs through the distribution of more efficient biomass cookstoves. Additionally, the manufacturing, sales and distribution of the stoves has increased employment, with subsidies available to help households who are unable to afford the upfront costs. This project supports the following Sustainable Development Goals (SDGs): SDG 1 No Poverty SDG 3 Good Health and Well-being SDG 5 Gender Equality SDG 7 Affordable and Clean Energy SDG 8 Decent Work and Economic Growth SDG 13 Climate Action SDG 15 Life on Land

Verified to which standard

Gold Standard

Number of credits (metric tonnes CO₂e)

28

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

28

Credits cancelled

Yes

Purpose, e.g. compliance

Voluntary Offsetting

C11.3

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

No, but we anticipate doing so in the next two years

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers

C12.1a

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

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

6

% total procurement spend (direct and indirect)

26

% Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

This is our first year working with the CDP Supply Chain platform and we have developed a plan to achieve our procurement goal by 2020. Our goal is to secure CDP responses from the suppliers who make up at least 50% of our annual spend. We have identified the subset of suppliers who make up 26% of our spend to request disclosure of in 2018.

Impact of engagement, including measures of success

This is the first year that we are utilizing the CDP Supply Chain platform to gather this data from our suppliers so we have yet to measure the impact.

Comment

C12.1b

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

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

Size of engagement

100

% Scope 3 emissions as reported in C6.5

100

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

VMware's products have supported our 500+ customers in reducing their carbon footprints for the last 15 years. Since 2003, VMware's products have avoided over 540 million MT CO₂e for our customers. This year, we sponsored our 3rd consecutive report from IDC that quantifies the cumulative positive carbon impact of our products for our customers. VMware's infrastructure virtualization solution — which encompasses compute (server), storage, networking, and management capabilities — forms the underpinning of modern data center infrastructure. It enables firms to gain data center-wide and IT-wide efficiencies as well as establish metrics to track and ultimately curb carbon emissions resulting from IT infrastructure growth. Please see the IDC White Paper, sponsored by VMware, "Infrastructure Virtualization Leads the Way in Reducing the Carbon Cost of Growth," August 2018. The report can be found at: <https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf>.

Impact of engagement, including measures of success

Type of engagement

Education/information sharing

Details of engagement

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

Size of engagement

28

% Scope 3 emissions as reported in C6.5

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

We have many opportunities to engage with our customers and actively seek their input and requirements. We specifically engage in annual or bi-annual Customer Advisory Councils across each region of our business and feedback is incorporated into our product roadmaps, where applicable. We have experienced a significant increase in engagement with our customers regarding our environmental and corporate social responsibility (CSR) performance over the last year. We currently have 28 clients on the EcoVadis platform. In early 2018, we improved our EcoVadis assessment score from a Silver to a Gold level. This effort is to support our customers in providing them with a holistic view of our sustainability efforts through transparency and third-party review, and to empower us with an efficient response process. We prioritize responding to our customer's annual questionnaires, as well as ad-hoc queries - and involve all of the necessary internal stakeholders to deliver the accurate information - aiming to be as responsive as possible on these issues and concerns. We have a global team that includes members from our field support, sustainability and compliance groups that is responsible for responding to customer environmental, social and CSR questions.

Impact of engagement, including measures of success

As a measure of success, we have received positive confirmation from our customers upon review of our data and to date, they have all been satisfied with our responses. As another example of engagement, in the past, VMware has been an active pioneer in working with utility companies to offer incentive programs supporting virtualization projects in data centers. VMware worked with utilities across North America including Pacific Gas and Electric, Southern California Edison, SDGandE, BC Hydro and Austin Energy to provide customer incentives based on the amount of energy savings achieved through data center consolidation. Additionally, we have a customer advocacy team that engages regularly through a Net Promoter Score (NPS) survey.

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
- Other

C12.3a

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

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	Given that VMware's headquarters are located in Palo Alto we are actively engaged with the City of Palo Alto as a committee member of its Sustainability Climate Action Plan. This committee includes other corporate participants, as well as local residents, and it provides insights and guidance on the City's plan to reduce its carbon emissions by way of encouraging electrification, facilitating mass transit and providing 100% green power. The committee meets regularly throughout the year and VMware is represented by its Sustainability Manager. (VMware's headquarters are in Palo Alto and it has forged strong relationships with the City, Stanford University and its Stanford Research Park neighbors.)	Palo Alto's Climate Action Plan informs many of the initiatives that are implemented by the City for its residents and businesses. It also informs how the City runs its operations and has driven numerous sustainability practices internally, including procurement of goods and services. The goal is to embed the plan as much as possible within the City's processes, in order to create efficiencies and achieve its climate goals.
Other, please specify (Energy Infrastructure)	Support	Focus of Legislation: Securing State Energy Infrastructure VMware supports and actively participates in policy academies with the National Governors Association (NGA) Center for Best Practices Resource Center on Cyber Security.	The NGA works with Governors across the country to assist states in developing responsible policies and state legislation to enhance the cybersecurity of state energy systems and infrastructure. The NGA recognizes that a cyber-attack on the systems that run water treatment facilities, and electrical and nuclear power plants, can have significant negative environmental consequences.
Energy efficiency	Support	VMware has supported H.R. 306, Efficient Government Technology Act, and continues to work with Congresswoman, Rep. Anna Eshoo and her staff to advocate for its passage in the House and Senate.	Background: Our Palo Alto Congresswoman, Rep. Anna Eshoo (D-CA), introduced H.R. 306, Efficient Government Technology Act, which requires the Department of Energy to update its 2007 baseline for energy efficiency at data centers, with an eye to making new data centers operate with less expenditure of power -- and by extension fewer costs. The legislation also tasks agencies with collaborating with DOE, the Office of Management and Budget (OMB) and the Environmental Protection Agency to come up with ways of measuring and verifying energy saving methods to make data centers operate with less energy. OMB would have to report on agency progress. Additionally, OMB would establish a program to certify tech workers in the evaluation and management of energy usage for the purpose of tracking data center efficiency. Stats: The federal government could realize \$5 billion in energy savings over seven years with more efficient use of data centers, according to a 2013 report from the Center for Climate and Energy Solutions. The Department of Energy estimates that implementation of best practices alone could reduce the government's data center energy bill by 20 to 40 percent. With investments in the latest technologies, experts estimate that most data centers could slash their energy use by 80 to 90 percent. Bill Status: On March 14, 2016, the House of Representatives passed the Energy Efficient Government Technology Act, designed to make federal data centers use energy more efficiently. The Senate will now need to act before the bill becomes law. The legislation is included as a subsection of the Senate Energy Bill (Energy Policy Modernization Act), currently being considered in the Senate.
Other, please specify (IT Modernization)	Support	Other = IT Modernization: VMware supported through its trade association memberships the MGT Act which was adopted into law in December 2017.	The Modernizing Government Technology (MGT) Act of 2016 is working to reform the way the Federal Government funds and modernizes IT solutions and keeps pace with innovations, such as virtualization, and cloud computing that can positively impact the environment.

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.

Trade association

IT Alliance for Public Sector

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

IT Alliance for Public Sector (ITAPS) is an organization formed to engage with policymakers across the country with an aim to educate government leaders on the importance of the growing technology industry and to promote a technology-led innovation ecosystem. Additionally, the organization advocates for modernization of the Federal IT infrastructure and national standards for the Internet of Things (IoT) adoption.

How have you, or are you attempting to, influence the position?

VMware participates in the executive policy committees that set the policy strategy for the year at both the Federal and State levels with our VP of Public Sector on the Board at the Federal level and our VP of State and Local on the Board at the State level. ITAPS' priorities include supporting and advancing policies for clean energy technologies and R&D as well as responsible stewardship for natural resources and the environment. VMware supports policy efforts to promote the adoption of internet-enabled devices and the Internet of Things (IoT). IoT adoption has the potential to greatly impact climate change. According to ITAPS, by connecting on an individual level our home appliances and thermostats, and scaling that across multiple communities, the IoT can cut nine gigatons of carbon emissions by 2020 (a 19% reduction in our emissions).

Trade association

The Information Technology Industry Council

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Information Technology Industry Council (ITI) and its members seek to continuously improve the energy efficiency landscape in the US and globally to leverage energy-efficient technologies. ITI works on behalf of its member companies to advocate for policies that advance both intelligent efficiency and product efficiency.

How have you, or are you attempting to, influence the position?

VMware's VP of Global Government Relations sits on the Executive Committee of ITI and influences ITI's policy positions. ITI and its member companies understand that we have a major stake in the fight against climate change. VMware supports the three strategic commitments ITI has made in this regard. ITI also supports government policies that emphasize an innovation agenda for mitigating and adapting our changing climate. On energy efficiency, ITI unites the tech sector and the NGO community to advance policies that drive sustainable economic growth through technology-enabled energy and product efficiency innovation. ITI works proactively with the Environmental Protection Agency as an active partner in and advisor to the ENERGY STAR program, their activities in Europe in coordination with Digital Europe, their work in China in coordination with USITO and their policy efforts elsewhere in Asia, Latin America, Africa, and the Middle East. It also participates actively in energy efficiency efforts within the G-20, the Asia Pacific Economic Cooperation (APEC) forum, the United Nations, and other international venues.

Trade association

TechNet

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

TechNet supports policies that are technology-neutral and that foster and promote a climate for innovation in clean energy supply and demand. TechNet's state clean energy priorities include advocacy and support around the following policy areas: • Demand Response (DR) • Distributed Energy Resources (DER) • Energy Efficiency Standards • Resilient Energy Supply • Clean Energy Standards, Renewable Portfolio Standards, and Renewable Fuel Standards • Grid Modernization • Retail Energy Competition and Self-Supply • Grid and Customer Data Access and Transparency • Electrification of Transportation • Clean Energy Supply • Microgrids • Demand Charges

How have you, or are you attempting to, influence the position?

VMware's Director of State and Local Government Affairs participates in regional discussions and decisions about which state legislation TechNet should support. This includes contemplation of policies that support a robust, technology-neutral energy agenda that will spur the development and the deployment of clean energy resources; the implementation of policies that support customer choice for clean energy technologies; policies and programs that recognize the importance of resiliency in the face of security threats, natural disasters, and the need for uninterrupted energy supplies; and understanding that clean energy and resilient energy are not mutually exclusive, TechNet will seek to advance the focus on the intersection of sustainable energy and resilient energy.

Trade association

The United States Information Technology Office (USITO)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The United States Information Technology Office (USITO) is an independent, non-profit, membership-based trade association, representing the US information communication technologies (ICT) industry in China.

How have you, or are you attempting to, influence the position?

VMware's VP of VMware Labs, Greater China was invited by the USITO to speak at the Consumer Electronics Show (CES) Asia on challenging national, regional and customer requirements for environmental issues as well as how sustainability concerns and the emergence of better technologies is converging to change the industry.

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

VMware is an active member of the Silicon Valley Leadership Group (SVLG) and participates on various committees, including their Energy committee whose mission is to advocate for reliable, high-quality, environmentally-responsible, and competitively-priced energy and power through policies and programs that promote an open and transparent market-based system. The SVLG meetings occur throughout the year and are attended by various representatives of VMware, depending on the committee.

VMware is an active member of the Stanford Research Park Advisory Council. We are integrally involved in the Park and the City of Palo Alto's transportation initiative and our Senior Director of Real Estate & Workplace serves on the Council. Stanford Research Park employers and tenants collaborate to solve transportation issues that affect them, as well as the residents of our neighboring communities. Transportation is a key issue for the City of Palo Alto when it comes to meeting its Climate Action Plan goals.

VMware is a member of Digital Europe and its Digital Sustainability Policy Group (DSPG) which aims to be the trusted and preferred partner for environmental policy makers, reaching out for constructive discussion with other stakeholders. It advocates the integration of environmental considerations at the stage of product design with the aim of reducing all relevant potential environmental impacts over its entire life cycle. DSPG aims to demonstrate leadership in this area helping to support other industries through advancement in electronics, software applications, and services.

The digital technology industry is committed to meeting the challenge of a material and energy-efficient Europe. Our industry helps citizens and commerce to move to a more sustainable society and efficient use and reuse of the materials in our products. The industry promotes the use of recyclable and recycled materials and will design products and services to be renewable, recoverable, or recyclable without compromising their ability to meet our customer's demands. It therefore contributes to a sustainable and competitive economy.

C12.3f

(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?

VMware has established a tiered governance structure that consists of a Sustainability Technical Council and an Executive Sustainability Advisory Group.

The Technical Council includes various representation within the Office of the CTO and Products and Cloud Services Business Unit. This Technical Council meets quarterly with the VP of Sustainability Strategy to provide insights, share ideas and drive cross-company sustainability initiatives. The goal of the Council is to drive sustainability into our engineering processes and to collaborate on assessing the environmental impacts of our products. The Executive Sustainability Advisory Group includes key internal stakeholders whose role it is to review and guide our sustainability strategy, reporting, and corporate sustainability goals.

The Executive Sustainability Advisory Group includes the following stakeholders:

- Chief People Officer
- Chief Technology Officer
- Chief Communications Officer
- VP, Global Government Relations and Public Policy
- VP, Deputy Counsel
- VP, Internal Audit
- VP, Real Estate and Workplace

With regard to policy, all of our policy engagement activities are coordinated through our VP of Global Government Relations and Public Policy who is on the Executive Sustainability Advisory Group. Given that our core business drives energy efficiency, these groups are not at odds when it comes to supporting appropriate climate or energy-related legislation.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In voluntary communications

Status

Complete

Attach the document

VMW 2017 Global Impact Report-8.15.18-Final Draft.pdf

Content elements

Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

C14. 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.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	CFO	Chief Financial Officer (CFO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

VMware is dedicated to improving and reporting on our environmental performance. We focus on optimizing operations, including our supply chain and our industry, to become more sustainable; and collaborating wherever possible to build a healthier social and business climate. As an information technology (IT) company, a key opportunity is to assist our customers to manage emissions and energy use within their own IT infrastructures through the leading technology and services we offer. We believe IT can be leveraged to support new, more efficient ways of living and working that will lead to a sustainable future.

In 2018, for our 3rd consecutive year, we quantified the positive impact of our products for our customers. We're pleased to report that we've supported our customers in avoiding over 540 million metric tons of CO2 over the last 15 years through the deployment of our virtualization products. Please see the **IDC White Paper** at:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-infrastructure-virtualization-leads-the-way-in-reducing-the-carbon-cost-of-growth.pdf>.

Additionally, we encourage you to view our **2017 Global Impact Report** at:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/company/vmware-global-impact-report2017.pdf>.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	7922000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	US	9285634021

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

Alliance Data Systems

Scope of emissions

Scope 1

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

On-site fuel combustion

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Alliance Data Systems, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: -Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -Business travel -Employee commuting -Upstream leased assets

Requesting member

Alliance Data Systems

Scope of emissions

Scope 2

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Alliance Data Systems, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: -Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -Business travel -Employee commuting -Upstream leased assets

Requesting member

Alliance Data Systems

Scope of emissions

Scope 3

Emissions in metric tonnes of CO2e**Uncertainty (±%)****Major sources of emissions****Verified**

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Alliance Data Systems, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: -Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -Business travel -Employee commuting -Upstream leased assets

Requesting member

Amdocs Ltd

Scope of emissions

Scope 1

Emissions in metric tonnes of CO2e**Uncertainty (±%)****Major sources of emissions****Verified**

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Amdocs Ltd, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Amdocs Ltd

Scope of emissions

Scope 2

Emissions in metric tonnes of CO2e**Uncertainty (±%)****Major sources of emissions****Verified**

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Amdocs Ltd, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -

Requesting member

Amdocs Ltd

Scope of emissions

Scope 3

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Amdocs Ltd, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Cisco Systems, Inc.

Scope of emissions

Scope 1

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Cisco Systems, Inc., VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: -Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -Business travel -Employee commuting -Upstream leased assets

Requesting member

Cisco Systems, Inc.

Scope of emissions

Scope 2

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Cisco Systems, Inc., VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: -Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -Business travel -Employee commuting -Upstream leased assets

Requesting member

Cisco Systems, Inc.

Scope of emissions

Scope 3

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Cisco Systems, Inc., VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: -Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -Business travel -Employee commuting -Upstream leased assets

Requesting member

Fujitsu Ltd.

Scope of emissions

Scope 1

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Fujitsu Ltd., VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Fujitsu Ltd.

Scope of emissions

Scope 2

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Fujitsu Ltd., VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Fujitsu Ltd.

Scope of emissions

Scope 3

Emissions in metric tonnes of CO2e**Uncertainty (±%)****Major sources of emissions****Verified**

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Fujitsu Ltd., VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Hewlett Packard Enterprise Company

Scope of emissions

Scope 1

Emissions in metric tonnes of CO2e**Uncertainty (±%)****Major sources of emissions****Verified**

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Hewlett Packard Enterprise Company, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: -Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -Business travel -Employee commuting -Upstream leased assets

Requesting member

Hewlett Packard Enterprise Company

Scope of emissions

Scope 2

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Hewlett Packard Enterprise Company, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: -Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -Business travel -Employee commuting -Upstream leased assets

Requesting member

Hewlett Packard Enterprise Company

Scope of emissions

Scope 3

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Hewlett Packard Enterprise Company, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: -Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations -Business travel -Employee commuting -Upstream leased assets

Requesting member

Nokia Group

Scope of emissions

Scope 1

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Nokia Group, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Nokia Group

Scope of emissions

Scope 2

Emissions in metric tonnes of CO2e**Uncertainty (±%)****Major sources of emissions****Verified**

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Nokia Group, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Nokia Group

Scope of emissions

Scope 3

Emissions in metric tonnes of CO2e**Uncertainty (±%)****Major sources of emissions****Verified**

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Nokia Group, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Vodafone Group

Scope of emissions

Scope 1

Emissions in metric tonnes of CO2e**Uncertainty (±%)****Major sources of emissions****Verified**

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Vodafone Group, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Vodafone Group

Scope of emissions

Scope 2

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Vodafone Group, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

Requesting member

Vodafone Group

Scope of emissions

Scope 3

Emissions in metric tonnes of CO2e

Uncertainty (±%)

Major sources of emissions

Verified

No

Allocation method

Allocation based on the market value of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

For identifying GHG sources and estimating allocated emissions associated with Vodafone Group, VMware would include all direct and relevant indirect GHG sources for which we have quantified emissions in our CDP Climate Change 2018 response, including: - Capital goods -Fuel-and-energy-related activities -Upstream transportation and distribution -Waste generated in operations - Business travel -Employee commuting -Upstream leased assets

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	VMware provides highly configurable products making nearly every customer unique. A specific evaluation of each product configuration would have to be undertaken to get an accurate view of the emissions per customer. This strategy is not scalable for VMware's expansive global customer base. In addition, VMware has a large product portfolio and multiple lines of business.
Customer base is too large and diverse to accurately track emissions to the customer level	We have challenges and concerns around the accuracy of allocating customer data by revenue. Using this approach, due to the depth and complexity of our products, we recognize that the portion attributable to a customer's business depends significantly on the particular products and services that they purchased, as well as the manner and location of engagement with VMware personnel for pre- and post-sales activities. A more granular and more consistent means of assessing emissions from each supplier for each component and each transport phase would be required as well as granular tracking of every customer interaction before we could calculate a more precise contribution for each customer. As all of these are cost- and effort-prohibitive, we believe the first order estimate based on revenue is the best option at this time.
Doing so would require we disclose business sensitive/proprietary information	VMware believes in protecting customers' confidential information. Given that our GHG emissions are public, and we would be using a revenue allocation model, access by unauthorized persons to a customer's allocation would also provide data on the customer spend with VMware, which we consider to be confidential information. We are willing to share the estimated allocated emissions directly with a given customer, but not to do so through a third-party without substantial assurances and confidence in the security infrastructure.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

We plan to collaborate more closely with our customers who are interested in this information. We will continue to refine our methodology so that it more accurately reflects our impact. Continuing the work we started last year, this year we included additional Scope 3 categories and plan to expand these efforts going forward. We intend to use the revenue allocation method for assigning emissions to our customers upon request.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

Requesting member

Alliance Data Systems

Group type of project

Other, please specify (to be jointly determined)

Type of project

Other, please specify (to be jointly determined)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

Other, please specify (to be jointly determined)

Estimated lifetime CO2e savings**Estimated payback**

Other, please specify (to be jointly determined)

Details of proposal

VMware is interested in discussing potential opportunities for collaboration with Alliance Data Systems and to better understand how our products and processes can help them to achieve their goals. We also encourage feedback on our products and initiatives. Please contact Sustainability@vmware.com to initiate collaborative development of GHG emissions reducing projects.

Requesting member

Amdocs Ltd

Group type of project

Other, please specify (to be jointly determined)

Type of project

Other, please specify (to be jointly determined)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

Other, please specify (to be jointly determined)

Estimated lifetime CO2e savings**Estimated payback**

Other, please specify (to be jointly determined)

Details of proposal

VMware is interested in discussing potential opportunities for collaboration with Amdocs Ltd. and to better understand how our products and processes can help them to achieve their goals. We also encourage feedback on our products and initiatives. Please contact Sustainability@vmware.com to initiate collaborative development of GHG emissions-reducing projects.

Requesting member

Cisco Systems, Inc.

Group type of project

Other, please specify (to be jointly determined)

Type of project

Other, please specify (to be jointly determined)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

Other, please specify (to be jointly determined)

Estimated lifetime CO2e savings**Estimated payback**

Other, please specify (to be jointly determined)

Details of proposal

VMware is interested in discussing potential opportunities for collaboration with Cisco Systems, Inc. and to better understand how our products and processes can help them to achieve their goals. We also encourage feedback on our products and initiatives. Please contact Sustainability@vmware.com to initiate collaborative development of GHG emissions-reducing projects.

Requesting member

Fujitsu Ltd.

Group type of project

Other, please specify (to be jointly determined)

Type of project

Other, please specify (to be jointly determined)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

Other, please specify (to be jointly determined)

Estimated lifetime CO2e savings**Estimated payback**

Other, please specify (to be jointly determined)

Details of proposal

VMware is interested in discussing potential opportunities for collaboration with Fujitsu Ltd. and to better understand how our products and processes can help them to achieve their goals. We also encourage feedback on our products and initiatives. Please contact Sustainability@vmware.com to initiate collaborative development of GHG emissions-reducing projects.

Requesting member

Hewlett Packard Enterprise Company

Group type of project

Other, please specify (to be jointly determined)

Type of project

Other, please specify (to be jointly determined)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

Other, please specify (to be jointly determined)

Estimated lifetime CO2e savings**Estimated payback**

Other, please specify (to be jointly determined)

Details of proposal

VMware is interested in discussing potential opportunities for collaboration with Hewlett Packard Enterprise Company and to better understand how our products and processes can help them to achieve their goals. We also encourage feedback on our products and initiatives. Please contact Sustainability@vmware.com to initiate collaborative development of GHG emissions-reducing projects.

Requesting member

Nokia Group

Group type of project

Other, please specify (to be jointly determined)

Type of project

Other, please specify (to be jointly determined)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

Other, please specify (to be jointly determined)

Estimated lifetime CO2e savings**Estimated payback**

Other, please specify (to be jointly determined)

Details of proposal

VMware is interested in discussing potential opportunities for collaboration with Nokia Group and to better understand how our products and processes can help them to achieve their goals. We also encourage feedback on our products and initiatives. Please contact Sustainability@vmware.com to initiate collaborative development of GHG emissions-reducing projects.

Requesting member

Vodafone Group

Group type of project

Other, please specify (to be jointly determined)

Type of project

Other, please specify (to be jointly determined)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

Other, please specify (to be jointly determined)

Estimated lifetime CO2e savings**Estimated payback**

Other, please specify (to be jointly determined)

Details of proposal

VMware is interested in discussing potential opportunities for collaboration with Vodafone Group and to better understand how our products and processes can help them to achieve their goals. We also encourage feedback on our products and initiatives. Please contact Sustainability@vmware.com to initiate collaborative development of GHG emissions-reducing projects.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC3.1

(SC3.1) Do you want to enroll in the 2018-2019 CDP Action Exchange initiative?

No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2017-2018 Action Exchange initiative?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services, if so, what functionality will you be using?

No, I am not providing data

SC4.2d

(SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?

No

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Public	Investors Customers	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms