

# CDP

## Oracle Corporation – CDP Climate Change 2018 Response

### C0. Introduction

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

Oracle Corporation provides products and services that address all aspects of corporate information technology (IT) environments—applications, platform and infrastructure. Our applications, platform and infrastructure offerings are delivered to customers worldwide through a variety of flexible and interoperable IT deployment models, including cloud-based, on-premise, or hybrid, which enable customer choice and flexibility. We market and sell our offerings globally to businesses of many sizes, government agencies, educational institutions and resellers with a worldwide sales force positioned to offer the combinations that best meet customer needs.

#### **Scale:**

- US\$37.7 billion total GAAP revenue in FY2017
- 430,000 customers in 175 countries
- US\$52 billion in R&D since 2004
- Approximately 130 acquisitions for over \$80 billion since 2005
- 25,000 partners worldwide
- More than 138,000 employees
- 16,000 customer support specialists, speaking 29 languages
- 19,000 implementation consultants
- Key industries: financial services, manufacturing, communications, media and entertainment, utilities, tax, public sector, education and research, life sciences, healthcare, travel and transportation, consumer products, aerospace and defense, automotive, professional services, and natural resources

#### **Innovation and Investment:**

- #1 in Worldwide SaaS Enterprise Applications Revenue by Vendor for 1,000+ Business User Customer Segments, 2015
- #17 of 100 Top Global Brands
- More than 17,000 patents worldwide
- 40,000 developers and engineers
- 469 independent user communities in 97 countries representing more than 1 million customers
- 5 million registered members of the Oracle Developer Community

#### **Other:**

- Headquarters: Redwood Shores, California

- Major operations in the United States, India, the United Kingdom, Japan, Germany, Canada, , France, Australia, Brazil, the Netherlands, Romania, and Ireland
- Fiscal year: June 1 to May 31

For more information about Oracle (NYSE:ORCL), visit oracle.com.

**(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
Row 1	January 1 2017	December 31 2017	No

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

United States of America  
 Other, please specify (Rest of the world)

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

USD

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

Yes

**(C1.1a) Identify the position(s) of the individual(s) on the board with responsibility for climate-related issues.**

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	Oracle's co-CEO, Safra Catz, is responsible for climate-related issues relevant to Oracle. Catz is a member of Oracle's Board of Directors, and signatory to Oracle's Environmental Policy, empowering Oracle's executive Environmental Steering Committee, which presents its findings and recommendations to her on an ongoing basis. She is responsible for Oracle's global operations, encompassing key aspects of the business that are relevant to climate change, including Real Estate and Facilities, Procurement, Human Resources, Finance, Legal, and Risk Management.

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Overseeing major capital expenditures, acquisitions and divestitures	Oracle co-CEO Safra Catz is responsible for reviewing and guiding strategy around environmental and climate-related issues. For example, Catz reviewed and approved Oracle’s 2020 sustainability goals and oversees the company’s energy procurement strategy. Oracle’s Environmental Steering Committee (ESC), led by the Chief Sustainability Officer (CSO), reports to Catz regarding strategic developments and progress against goals on an ongoing basis. For example, at Catz’ request, the CSO presented Oracle’s sustainability accomplishments and climate-related strategy to the Finance and Audit Committee of the Board of Directors in 2017.

**(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
Chief Sustainability Officer (CSO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Sustainability committee	Both assessing and managing climate-related risks and opportunities	Quarterly

**(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.**

Oracle’s Chief Sustainability Officer (CSO) oversees the company’s sustainability initiatives and sets the strategic direction for Oracle’s Sustainability Solutions – products that help thousands of Oracle customers to reduce their environmental impact.

The CSO, whose role reports to the Chief Executive Officer, chairs Oracle’s Environmental Steering Committee (ESC), which was launched in 2008. The ESC (Oracle’s equivalent of a “Sustainability committee” as defined by CDP above) establishes the company’s sustainability goals and meets quarterly to define strategy and monitor progress. The ESC is comprised of senior individuals from a wide range of Oracle business units, who, in turn, lead working groups within their respective business units. The CSO and the ESC hold responsibility for climate-related issues within the company in order to foster cross-functional collaboration. Issues addressed range from data center operations to employee engagement.

The ESC is also responsible for identifying strategic business opportunities with regard to climate change. For example, members of the ESC have been working to embed sustainability into Oracle’s fast-growing Cloud business – from operating energy efficient data centers and signing the Corporate Colocation and Cloud Buyers’ Principles for renewable energy (Real Estate and Facilities), to conducting research and training around the circular economy (Product Design and Hardware Development).

The process through which the ESC monitors climate-related issues includes a detailed materiality assessment that is used to benchmark and monitor climate-related issues that are most relevant to our business. Key issues identified in the most recent iteration include emissions in the Oracle Cloud, sustainable product design, responsible supply chain management, and sustainable procurement. Key outcomes and action items from ESC meetings are reported up to the CEO on a quarterly basis, and down to the relevant business units more frequently than quarterly.

The ESC includes the following members:

Chief Sustainability Officer and Group Vice President, Product Strategy  
Vice President, Global Real Estate and Facilities  
Senior Vice President, Worldwide Systems Operations  
General Manager and Senior Vice President Oracle Marketing Cloud  
Vice President, Human Resources, Philanthropy  
Executive Director, Oracle Corporate Citizenship,  
Vice President, Cloud Operations  
Vice President, Corporate Marketing  
Vice President, Global Procurement  
Vice President, Hardware Development  
Vice President, Government Affairs, Corporate Affairs  
Senior Director, Datacenter Automation and Global Desktop  
Director, EMEA Sustainability, Environment and Health and Safety  
Senior Director, Global Sustainability  
Senior Director, Global Real Estate and Facilities

Among the ESC members, two report directly to Oracle co-CEO, Safra Catz, and one reports directly to Oracle co-CEO, Mark Hurd. Four members are in the management chain of Oracle Executive Chairman and CTO Larry Ellison. All members of the ESC are senior managers at Oracle and, as a Committee, are empowered by and answerable to Oracle's co-CEO Safra Catz, who is also a member of Oracle's Board of Directors. This structure enables the ESC to adopt a cross-functional and collaborative approach while assessing and managing climate-related issues.

To supplement the quarterly ESC meetings, more than 40 individuals representing the various business units convene at an annual, in-person meeting at Oracle headquarters to align our efforts and strategize for the upcoming year. Findings and action items from this meeting are reported up to the ESC, assigned to the relevant business units (Real Estate and Facilities, Supply Chain, Corporate Citizenship, etc.) and are noted and tracked in a consolidated document. Each issue is monitored via monthly meetings, where members from each business unit report on their progress and collaborate on outstanding issues. The action items often address business continuity, including climate-related issues such as exposure to physical climate events that could have the potential to disrupt our business.

In addition, Oracle's Risk Management and Resiliency (RMRP) and Environmental Health and Safety (EHS) teams assess the severity and scale of potential natural disasters (e.g. hurricanes, earthquakes, etc.) and accordingly formulate contingency and resiliency plans on an annual basis. The RMRP process includes a planning, documenting, and testing cycle that assesses Oracle's resiliency to respond to physical risks, including climate-related natural disasters.

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

Yes

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

**Who is entitled to benefit from these incentives?**

All employees

**Types of incentives**

Monetary reward

**Activity incentivized**

Emissions reduction project

**Comment**

Oracle's Global Green Events team recognizes employees with a monetary reward for contributing to making Oracle events sustainable and helping mitigate contributors to climate change such as greenhouse gas emissions and energy consumption. For example, Oracle personnel implemented several sustainability measures at Oracle OpenWorld 2017 – including minimizing the amount of waste going to landfill and maximizing the use of compostable and recyclable materials. As a result, 72% of waste generated at the event was diverted from landfill and 100% of onsite emissions were offset by Oracle. In addition, 81% of menu ingredients were sourced from within 250 miles of San Francisco.

**Who is entitled to benefit from these incentives?**

All employees

**Types of incentives**

Recognition (non-monetary)

**Activity incentivized**

Behavior change related indicator

**Comment**

As part of the Sustainability Champions program, Oracle recognizes employees who help attain Oracle's sustainability goals, thereby reducing our environmental footprint. Sustainability Champions are recognized in Oracle's internal sustainability newsletter, and receive a 'Sustainability Champion' badge to include in their employee profiles. Oracle's 2017 Sustainability Champions included employees who advocated for market-based and politically viable climate mitigation solutions in North America, championed waste management programs in Latin America, and promoted alternative commuting programs in Europe.

**Who is entitled to benefit from these incentives?**

All employees

### Types of incentives

Recognition (non-monetary)

### Activity incentivized

Emissions reduction project

### Comment

In 2017, 3,227 Oracle Volunteers completed 153 environmental projects, totaling more than 13,701 donated hours. For example, Oracle Volunteers in Bangalore, India planted close to 300 trees along the shore of Agara Lake, while Oracle Volunteers in Wardensville, West Virginia did regular trail maintenance in the George Washington National Forest. Through the annual Oracle Volunteers Awards, Oracle recognizes and rewards employees who lead outstanding volunteer projects in collaboration with environmental nonprofit organizations globally. Projects are judged on impact, leadership, and innovation. Each winning project leader receives an “Excellence in Project Leadership” badge, an award certificate, and a \$500 donation to the partner nonprofit organization.

### Who is entitled to benefit from these incentives?

Other, please specify (Real Estate and Facilities team members)

### Types of incentives

Recognition (non-monetary)

### Activity incentivized

Emissions reduction project

### Comment

Members of Oracle’s Real Estate and Facilities team are eligible to earn recognition for a variety of achievements, including sustainability performance.

## C2. Risks and opportunities

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

	From (years)	To (years)	Comment
Short-term	0	5	
Medium-term	5	15	
Long-term	15	30	

### (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) 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	>6 years	

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

Climate-related materiality assessments are performed by Oracle's Environmental Steering Committee (ESC), which meets every quarter to address any climate-related risks, opportunities, and issues that have been identified in the previous three months. The evaluation process is ongoing at multiple scales, and the timeframe considered varies depending on the potential severity of risks identified, but covers at least six years. The ESC reports its findings to Oracle co-CEO, Safra Catz, quarterly. In addition, Oracle has several processes in place to identify and assess climate-related risks, both at company and asset level.

**Company level:**

Climate-related risks and opportunities are assessed at a company level by several groups, including Global Real Estate and Facilities (which includes Environment Health and Safety and Energy Management), Corporate Citizenship, Sustainability Strategy, Supply Chain Operations, Public Policy, and Legal, who continuously monitor regulatory developments at international, national, state, and local levels. Potential risks are then documented and analyzed for appropriate responses. For example, Oracle's Risk Management and Resiliency (RMRP) and Environmental Health and Safety (EHS) teams assess the severity and scale of potential natural disasters (e.g. hurricanes, earthquakes, etc.) and formulate contingency plans accordingly on an annual basis. The RMRP process includes a planning, documenting, and testing cycle that assesses Oracle's resiliency in response to physical risks, including climate-enhanced natural disasters. Oracle's RMRP Program Management Office publishes a formal Risk Assessment template that provides for the identification and characterization of environmental and climate-related risks. Due to the distributed nature of Oracle operations, individual business units around the globe are responsible for identifying and planning for relevant environmental and climate-related risks associated with their specific geographies.

The **materiality/priority of each climate-related risk** is analyzed based on the same criteria used to assess other types of risks, including: probability, cost, and risk of non-action. Oracle defines **substantive impact** in terms of issues that are considered material to our stakeholders (including investors, customers, and employees), and may in turn have a material effect on our operating costs, revenue or profitability.

Opportunities for new products, enhancement of existing products, partnerships, and product positioning, including ones that help minimize climate-related risks, are primarily identified within the individual product management teams as part of their product roadmap planning process. This is augmented through the offices of Oracle's Environmental Steering Committee (ESC) and its various working groups. Examples of products that support climate change management include analytics (aka business intelligence), supply chain solutions (e.g. product development, planning, logistics, manufacturing, and product takeback), utilities applications, and disruptive technologies like Internet of Things (IoT), Big Data, and Blockchain.

Other climate-related opportunities, such as those associated with employee engagement (e.g. promoting awareness and behavioral change with newsletters, videos, and social media) and circular economy (e.g. the Design for Environment guidelines developed by Oracle's supply chain and hardware engineering teams) are identified within the respective lines of business and collectively addressed by the ESC.

**Asset level:**

Regulatory and climate-related risks are assessed at an asset level by several groups, including Global Real Estate and Facilities (which includes Environment Health and Safety and Energy Management), Supply Chain Operations, and Legal, who continuously monitor risks that may impact Oracle's facilities, data centers, and workforce. For example, Oracle's Environment, Health and Safety (EHS) team works to ensure that Oracle's owned and leased facilities comply with country, state or local environmental protection laws based upon site operations and on-site equipment (boilers, cooling towers emergency generators, etc.). The Facility Environmental Compliance (FEC) Program serves to aid local EHS and facility teams in complying with relevant facility-based environmental and climate regulations, which may require reoccurring permits, licenses, registrations, plans, monitoring, or other approval from an official government environmental agency. Oracle also has a dedicated Energy Director who is responsible for setting and meeting emissions- and energy-reduction goals, and for managing climate-related risks associated with the company's facilities portfolio (e.g. energy availability, contracts, etc.).

**(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	Oracle is subject to several state, federal, and international laws governing protection of the environment and climate change mitigation, including energy efficiency, end-of-life treatment of our products, and the use of certain chemical substances. For example, the EU Energy Efficiency Directive, the CRC Energy Efficiency Scheme in the UK, the EU Waste Electrical and Electronic Equipment Directive (WEEE Directive), and China's regulation on Management Methods for Controlling Pollution Caused by Electronic Information Products impact Oracle's business in those regions. Oracle's Government Affairs, Real Estate and Facilities, and Reverse Logistics teams closely monitor and manage Oracle's compliance with such regulation.
Emerging regulation	Relevant, sometimes included	Emerging environmental and climate-related regulation may impact several aspects of Oracle's business, including our facility operations, and product design and stewardship. Oracle's Government Affairs team and the Environmental Steering Committee monitor such regulation on an ongoing basis. For example, the Government Affairs team closely monitors potential laws around energy efficiency and the circular economy in the EU.
Technology	Relevant, always included	Technology risks are always included in Oracle's climate-related risk assessments. For example, risks associated with Oracle's cloud services data centers – including energy cost fluctuations – are closely monitored by the Cloud Investment and Planning team.
Legal	Relevant, always included	Legal and compliance risks associated with current or emerging regulation are included in Oracle's climate-related risk assessments. For example, Oracle is subject to several state, federal, and international laws governing protection of the environment and climate change mitigation, including the EU Energy Efficiency Directive, the CRC Energy Efficiency Scheme in the UK, and China's regulation on Management Methods for Controlling Pollution Caused by Electronic Information Products, all of which impact Oracle's business in those regions. The compliance requirements and costs associated with these regulations are substantial, and Oracle has several programs and processes in place to help ensure compliance.
Market	Relevant, always included	Market risks, such as shifts in consumer preferences toward low-carbon products, are always included in Oracle's climate-related risk assessments. The Sustainability Strategy team monitors market trends to inform product strategy. For example, the demand for low-carbon products drove an effort to train Oracle's hardware engineers in circular economy design principles, through "Design for Environment" guidelines.
Reputation	Relevant, always included	Reputational risks are included in Oracle's climate-related risk assessments. For example, Oracle's performance on certain sustainability surveys/indices, including CDP and DJSI, could impact Oracle's reputation, and subsequently Oracle's business.



	Relevance & inclusion	Please explain
Acute physical	Relevant, always included	Acute physical risks are considered as part of Oracle's Risk Management and Resiliency Program. For example, the impacts of acute physical climate events such as hurricanes and floods are assessed.
Chronic physical	Relevant, always included	Chronic physical risks are considered as part of Oracle's climate-related risk assessments – including, for example, the impacts of rising mean temperatures and rising sea level on Oracle's facilities and data centers.
Upstream	Relevant, always included	Upstream risks around Oracle's supply chain are always included in our climate-related risk assessments. For example, as a member of the Responsible Business Alliance, Oracle monitors risk among our direct hardware suppliers through annual scorecards and audits. This helps Oracle better assess and manage potential climate-related risks in our supply chain, including exposure to resource shortages.
Downstream	Relevant, always included	Downstream risks around Oracle's reverse supply chain are always included in our climate-related risk assessments. For example, Oracle's Product Take Back and Recycling team closely monitors new legislation around electronic waste and takes the necessary steps to ensure compliance.

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

Oracle prioritizes the climate-related risks and opportunities identified by evaluating these risks and opportunities based on both quantitative and qualitative criteria that assess the severity of the potential impacts of the risk, as well as the scale of the opportunities. Key areas of risks include supply chain disruption (including but not limited to climate change-related disruption), commodity pricing volatility (including energy), environmental regulation, and resource availability due to unforeseen factors, including climate-related factors. The materiality/priority of each potential risk is analyzed based on criteria including: probability, cost, and risk of non-action. Opportunities associated with new products or product enhancements are evaluated in accordance with Oracle's standard processes for any such investment.

**As an example of how Oracle manages physical risks and opportunities:** as part of Oracle's RMRP process, each business unit associated with life safety emergency response activities is required to conduct annual risk assessment and resiliency planning, using a formal Risk Assessment template. In addition, Oracle's Real Estate and Facilities organization requires certain high-risk locations – including those impacted by climate-related risks such as natural disasters – to develop and maintain an Emergency Response Action Plan (ERAP) for first response life safety operations. To proactively coordinate and manage all emergency response and recovery activities (life safety, asset protection, business continuity, reconstitution, and reputation management), Oracle's Global Physical Security Crisis Management team oversees the designation and training of Global, Regional, and Local Crisis Management teams.

Oracle's Environmental Steering Committee (ESC) meets quarterly to address potential risks around increased stakeholder concern, and members of each business unit convene at an annual, in-person meeting at Oracle headquarters to align our efforts and strategize for the upcoming year. Findings and action items from these meetings are reported to the ESC, assigned to the relevant business units (Real Estate and Facilities, Supply Chain, Corporate Citizenship, etc.) and are noted and tracked in a consolidated document. Each issue is monitored via monthly meetings, where members from each business unit report on their progress and collaborate on outstanding issues. The action items often address business continuity, including climate-related issues such as exposure to physical climate events that could have the potential to disrupt our business.

**As an example of how Oracle manages transition risks** – such as climate-related reputational risks and growing stakeholder concern – Oracle sets and implements robust energy- and emissions-reduction goals, and engages various stakeholder groups, including employees and suppliers, in meeting those goals. Through the Annual Sustainability Champions program, we recognize employees who are advancing environmental sustainability at work and beyond. Oracle’s 2017 Sustainability Champions included employees who advocated for market-based and politically viable climate mitigation solutions in North America, championed waste management programs in Latin America, and promoted alternative commuting programs in Europe. We leverage several additional avenues to meet our goals, including energy efficiency projects and renewable energy procurement and installation, resulting in an estimated 30,000 MT CO<sub>2</sub>e in emissions savings in 2017. In addition, the Oracle Sustainability Strategy and Supply Chain teams track and engage an increasing number of customers requesting data on Oracle’s environmental performance, including climate-change related inquiries. The requests are prioritized based on product lines, risk categories, geography, potential revenue loss, (cost) and risk of non-action.

**(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**

Chronic: Rising mean temperatures

**Type of financial impact driver**

Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants)

**Company- specific description**

An increase in the mean (average) temperature could impact Oracle’s business, especially in areas where we operate our data centers and labs, including in Austin, TX and Salt Lake City, UT. Hotter weather may result in higher energy and water consumption to cool our data centers, which could drive up operational cost. Increased demand for electricity could also result in a grid shutdown, which could negatively impact our business and operations. For example, the cooling system at Oracle’s Austin Data Center is equipped to operate normally for about 5 hours during hot weather. An increase in mean temperatures could necessitate additional water supply, in the absence of which, the cooling system may cease to operate. Global warming could also result in rising sea levels, which could impact Oracle’s facilities in certain coastal areas, including our headquarters in California. Oracle considers such climate-related risks when making long-term, strategic decisions around its real estate portfolio and operations.

**Time horizon**

Long-term

**Likelihood**

Likely

**Magnitude of impact**

Medium

**Potential financial impact**

7440000

**Explanation of financial impact**

According to a U.S. Department of Energy Report titled, "Assessing the Effect of Rising Temperatures" (published January 2017), nationwide spending on commercial electricity is likely to rise by 4-12% by year 2040, based on projected climate-induced temperature rise, using a low GHG emissions pathway. Using this projection, we estimate that Oracle's operational costs would increase by \$3.72M - \$11.16M, and the Potential Financial Impact figure represents an average of that range  $[(3,720,000 + 11,160,000) / 2 = 7,440,000]$ . This calculation is based on Oracle's 2017 global energy spend of \$93 million.

**Management method**

The methods we use to manage this risk include designing, building, and operating some of the most energy-efficient data centers in the industry. We continually evaluate our new and existing data centers to identify opportunities to improve performance. For our new data centers, we select the optimal locations to leverage outside air cooling. In addition, to address the risk of a possible grid shutdown, we have uninterruptible power supply (UPS) systems and generators for all of our key sites and data centers. We employ the best available technology to continuously improve energy efficiency at our data centers, including the use of low-loss electrical energy distribution systems and highly efficient cooling systems. For example, at Oracle's Salt Lake City Data Center, we have installed a separate air handler that provides outside air economization and some evaporative cooling, which enables the original cooling system to operate much more efficiently. In 2017, during the construction of a new facility for Design Tech High School at our headquarters campus (along the Belmont Slough), we raised the levee around the school facility to address the potential of sea level rise.

**Cost of management**

2860143

**Comment**

The cost of management estimation includes the cost of implementing energy efficiency measures across our facilities in 2017, plus the cost of raising the levee around the construction of Design Tech High School at Oracle's headquarters.

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**Identifier**

Risk 2

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

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Please select

**Type of financial impact driver**

Please select

**Company- specific description**

As carbon pricing gains momentum globally, Oracle's operating costs may be impacted in regions where carbon taxes and cap-and-trade schemes are implemented. According to a World Bank report titled "State and Trends of Carbon Pricing 2018" (published May 2018), to date, 51 carbon pricing initiatives have been implemented or are scheduled for implementation globally. This trend has the potential to drive up electricity costs, and in turn, Oracle's operating and compliance costs, particularly in regions where we operate data centers. For example, Oracle's operations in the UK are subject to the Climate Change Levy (CCL), which requires commercial entities to pay a carbon tax if they use fossil fuels to generate electricity.

**Time horizon**

Medium-term

**Likelihood**

About as likely as not

**Magnitude of impact**

Medium-low

**Potential financial impact**

4179230

**Explanation of financial impact**

For example, if a carbon price of \$10 per metric ton were established through carbon regulation (per World Bank estimates, 46% of the emissions covered are priced at less than US\$10/tCO<sub>2</sub>e), Oracle's operational costs could increase by approximately \$4.18M [(2017 Scope 1 + market-based Scope 2 emissions) \* \$10 = 417,923 \* 10 = 4,179,230].

**Management method**

Some methods Oracle uses to manage this risk include continually evaluating and implementing new opportunities for onsite renewable energy projects, as well as the purchase of renewable energy through local utility grids. For example, in 2017 we executed four onsite solar projects at Oracle-owned facilities in India and in the US. We strive to maximize energy efficiency and emission reductions in our data centers and throughout our real estate portfolio. For example, we implemented a number of energy efficiency measures at our facilities in 2017, including Smart Building Control and Monitoring systems, dimmable lighting installations, advanced lighting controls, building HVAC controls, updated firmware, hardware and advanced control schemes, upgraded our mechanical cooling systems with economizers and higher efficiency components and boiler and heating systems, increased monitoring, and undertook retro-commissioning. These measures resulted in an estimated emissions reduction of 5,007 MT CO<sub>2</sub>e. In addition, Oracle works with its colocation data center providers to implement best practices around energy efficiency, as well as influence the procurement of renewable energy to power our data center operations. This helps us better manage and reduce our scope 2 emissions, and hence, our exposure to increased carbon pricing.

**Cost of management**

2580143

**Comment**

The cost of management includes the cost of implementing energy efficiency measures across our facilities in 2017.

**Identifier**

Risk 3

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

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Please select

**Type of financial impact driver**

Please select

**Company- specific description**

Climate change and more extreme weather events are likely to drive up energy demand and consumption, which in turn could lead to an increase or fluctuation in energy and electricity costs, leading to an increase in Oracle's operational costs. Rising energy and electricity prices have the potential to impact Oracle's cloud business and facility operations. As Oracle's cloud business grows, we are seeing increased energy use, especially at our colocation Cloud data centers. This exposes Oracle to some financial risks – such as volatility of fuel prices – and could affect the cost of data center operations. Fluctuating energy and electricity prices may also impact Oracle's supply chain, including its hardware product assembly, transportation, and logistics operations and distribution centers. This, in turn, could drive up the cost of manufacturing and distributing Oracle products.

**Time horizon**

Medium-term

**Likelihood**

About as likely as not

**Magnitude of impact**

Low

**Potential financial impact**

534800

**Explanation of financial impact**

According to the Energy Information Administration (EIA ), the projected increase in electricity costs for the commercial sector between 2018 and 2019 is 0.07 cents per kWh (10.86 in 2019 vs. 10.79 in 2018). Given Oracle's electricity consumption in 2017 (764M kWh), this would amount to a \$534,800 increase in electricity costs. This calculation assumes that our energy consumption remains the same year over year.

**Management method**

Some methods Oracle uses to manage this risk include purchasing energy in the open market when possible and using advance purchasing and hedging to further minimize risk and diversify our energy portfolio. We strive to maximize energy efficiency in our data centers and throughout our real estate portfolio to reduce exposure to energy price fluctuations. For example, we implemented a number of energy efficiency measures at our facilities in 2017, including Smart Building Control and Monitoring systems, dimmable lighting installations, advanced lighting controls, building HVAC controls, updated firmware, hardware and advanced control schemes, upgraded our mechanical cooling systems with economizers and higher efficiency components and boiler and heating

systems, increased monitoring, and undertook retro-commissioning. These measures resulted in an estimated emissions reduction of 5,007 MT CO<sub>2</sub>e. In addition, Oracle continues to implement and evaluate potential onsite renewable energy projects, as well as renewable energy provided through local utility grids, as part of our effort to increase renewable energy use across our global operations. For example, in 2017 we executed four onsite solar projects at Oracle-owned facilities in India and in the U.S. Oracle also works with its colocation data center providers to implement best practices around energy efficiency, as well as influence the procurement of renewable sources to power our data center operations.

**Cost of management**

2580143

**Comment**

The cost of management includes the cost of implementing energy efficiency measures across our facilities in 2017.

**Identifier**

Risk 4

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

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Please select

**Type of financial impact driver**

Please select

**Company- specific description**

Environmental and climate-related laws and regulations could impact Oracle's business by increasing Oracle's operational and compliance-related costs. For example, environmental legislation such as the EU Directive on Restriction of Hazardous Substances (RoHS), the EU Waste Electrical and Electronic Equipment Directive (WEEE Directive) and China's regulation on Management Methods for Controlling Pollution Caused by Electronic Information Products, may increase our cost of doing business internationally and impact our hardware revenues from the EU, China and other countries with similar environmental legislation. Regulations around electronic waste management impact how Oracle manages its reverse supply chain and Product Take Back and Recycling programs. The number of government entities globally that require reporting and declarations around electronic waste continues to increase year over year (currently at 60). Since there are no reporting standards across governments, this drives complexity and administrative overhead. Oracle is also impacted by several other climate-related regulations, including the EU Energy Efficiency Directive, and the Energy Savings Opportunity Scheme (ESOS). For example, Article 8 of the EU Energy Efficiency Directive 2012/27/EU requires multinational companies like Oracle to comply with energy efficiency legislation specific to every member state in which they operate. The requirements include energy audits that must be completed every four years. Compliance with such regulations could drive up Oracle's operational costs, and noncompliance could result in penalties or fines.

**Time horizon**

Current

**Likelihood**

Likely

**Magnitude of impact**

Medium-low

**Potential financial impact**

29000

**Explanation of financial impact**

The estimated financial implications of the risk before taking action include cost of noncompliance with various global schemes addressing electronic waste management, which, although unlikely, could range from \$8K to \$50k depending on the region and severity of the issue. The figure in the potential financial impact column represents an average of the \$8k - \$50k range, and was calculated as follows:  $[(8,000 + 50,000) / 2] = \$29,000$ .

**Management method**

One of the methods we use to manage this risk is implementing robust take back and recycling programs to help ensure compliance with related laws and regulations. As a strong proponent of the circular economy, Oracle has various offerings for our customers and suppliers to return excess used products or materials. In FY17, Oracle's Reverse Supply Chain Organization collected more than 3 million lbs of product. Of the total material collected, 99.5% was either recycled or reused. Oracle conducts audits to help ensure that our recyclers and their downstream processors have proper Health and Safety controls in place and are compliant with local law. By expanding the number of sites in our recycling network and increasing the percentage of material reused vs. recycled, we reduce shipping miles and conserve raw materials, both of which enable us to reduce our GHG emissions. In order to meet local compliance obligations, Oracle has also joined compliance schemes and product stewardship programs in several countries and jurisdictions. With regards to other climate-related legislation such as ESOS and CCA, we aim to minimize our costs by proactively identifying opportunities to enhance energy efficiency across our facilities. For these reasons, we believe Oracle is well positioned to meet potential future environmental regulations.

**Cost of management**

200000

**Comment**

The cost of management includes the cost of complying with various environmental schemes globally.

---

**Identifier**

Risk 5

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

Customer

**Risk type**

Transition risk

**Primary climate-related risk driver**

Please select

**Type of financial impact driver**

Please select

**Company- specific description**

Growing awareness around the negative impacts of climate change is likely to drive a shift in consumer behavior, with an increased emphasis on sustainable and resilient business practices. As a result, an increasing number of customers are taking sustainability into account when making purchasing decisions. Oracle receives 200-300 environmental or climate-related inquiries annually from key customers representing \$1B - \$1.5B in revenue. If Oracle fails to meet customer expectations around sustainability, our business could be adversely impacted.

**Time horizon**

Medium-term

**Likelihood**

About as likely as not

**Magnitude of impact**

Medium

**Potential financial impact**

62500000

**Explanation of financial impact**

If we assume that Oracle were at risk of losing 5% of the business represented by customers requesting data on Oracle's environmental performance, then the potential financial impact (before taking action) could range from \$50M - \$75M. The figure reported in the potential financial impact field represents an average of that range  $[(\$50M + \$75M)/2 = \$62,500,000]$ .

**Management method**

The methods that Oracle is using to manage this risk include investing in strong sustainability practices and reporting efforts. In addition to sharing data with investors and customers through initiatives such as CDP and EcoVadis, Oracle responds to dozens of individual customer requests each year. Oracle has established aggressive sustainability goals around energy consumption, emissions reduction, renewable energy, water and waste. For example, our 2020 goals include 33% renewable energy use and 20% reduction in absolute emissions (base year 2015). As part of our efforts to meet these goals, we continually implement and evaluate potential onsite renewable energy projects, as well as renewable energy provided through local utility grids. For example, in 2017 we executed four onsite solar projects at Oracle-owned facilities in India and in the U.S.

**Cost of management**

30000

**Comment**

The cost of management includes the cost of responding to environmental inquiries from customers and investors, through initiatives such as CDP and EcoVadis.

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

Yes

---

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

Identifier



Opp1

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

Direct operations

**Opportunity type**

Resource efficiency

**Primary climate-related opportunity driver**

Move to more efficient buildings

**Type of financial impact driver**

Reduced operating costs (e.g., through efficiency gains and cost reductions)

**Company- specific description**

Oracle's facilities portfolio includes more than 10 million square feet of owned real estate and 16 million square feet of leased space. We continuously invest in technologies and solutions to reduce our environmental footprint at our facilities and data centers around the world. By adopting more efficient building standards, Oracle is able to not only minimize its environmental footprint, but also realize significant efficiency gains and cost reductions. As of 2017, Oracle owned 26 facilities that received ENERGY STAR ratings from the US Environmental Protection Agency, 26 facilities that were recognized by the Building Owners and Managers Association (BOMA) 360 Performance Program, and 4 LEED-certified facilities. We continue to pursue opportunities for improved efficiency and performance.

**Time horizon**

Current

**Likelihood**

Very likely

**Magnitude of impact**

Medium

**Potential financial impact**

846000

**Explanation of financial impact**

The financial impact of this opportunity includes cost savings resulting from energy efficiency measures implemented at our facilities worldwide. The potential financial impact figure represents the sum of actual and projected cost savings from a variety of energy efficiency measures implemented globally in 2017, including: • Energy efficiency: building services (\$727,000) • Energy efficiency: Processes, including data center initiatives (\$119,000)

**Strategy to realize opportunity**

Oracle's strategy to realize this opportunity includes maximizing energy efficiency and emission reductions in our data centers and throughout our real estate portfolio. For example, we implemented a number of energy efficiency measures at our facilities in 2017, including dimmable lighting installations, advanced lighting controls, building HVAC controls, Smart Building Control and Monitoring systems, updated firmware, hardware and advanced control schemes, upgraded our mechanical cooling systems with economizers and higher efficiency components and boiler and heating systems, increased monitoring, and undertook retro-commissioning. These measures resulted in an estimated emissions reduction of 5,007 MT CO<sub>2</sub>e. Oracle has a goal to achieve a 20% reduction in our energy consumption per dollar of revenue by 2020, and to increase our renewable energy use to 33% (base year 2015). The energy

efficiency initiatives mentioned above are helping us make progress toward these goals. In addition to implementing energy efficiency projects at our facilities around the world, Oracle benchmarks its sustainability performance using standards such as Energy STAR, LEED, and BOMA. As of 2017, Oracle owned 26 facilities that received ENERGY STAR ratings from the US Environmental Protection Agency, 26 facilities that were recognized by the Building Owners and Managers Association (BOMA) 360 Performance Program, and 4 LEED-certified facilities.

**Cost to realize opportunity**

3900000

**Comment**

The cost to realize this opportunity represents the current investment associated with energy efficiency initiatives across our facilities, including data centers.

---

**Identifier**

Opp2

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

Direct operations

**Opportunity type**

Resource efficiency

**Primary climate-related opportunity driver**

Reduced water usage and consumption

**Type of financial impact driver**

Reduced operating costs (e.g., through efficiency gains and cost reductions)

**Company- specific description**

Oracle leverages a wide range of water-saving strategies across our facilities globally, as a result of which we have achieved a consistent year-over-year reduction in our total water use. This helps Oracle achieve cost reductions and operational efficiencies. For example, since we launched our water reduction goal in 2015, we have saved an estimated 159 million liters of potable water globally.

**Time horizon**

Current

**Likelihood**

Very likely

**Magnitude of impact**

Medium-low

**Potential financial impact**

492900

**Explanation of financial impact**

The financial impact of this opportunity includes cost savings resulting from efficient water management practices. The potential financial impact was calculated by multiplying the projected water savings (159M liters) from 2015 (base year) to 2017 by a global average cost of \$0.0031 per liter of water (0.0031\* 159M = 492,900)

### Strategy to realize opportunity

Oracle's strategy to realize this opportunity includes implementing water-saving initiatives and processes at our facilities around the globe. Oracle has a goal to achieve a 25 percent reduction in potable water use per square foot by 2020 (baseline 2015). For example, over the past 8 years, we've been irrigating the landscape at our headquarter campus with reclaimed water, saving approximately 26 million gallons of potable water per year. Additionally, in 2017 we replaced all restroom faucets with low-flow, automated faucets, low-flow urinals, and dual-flush toilets, at our headquarters in Redwood Shores, CA. Oracle also conducts rainwater harvesting at our facilities in several countries, including India, Brazil, and Japan. These efforts help ensure that Oracle is well positioned to realize this opportunity.

### Cost to realize opportunity

477000

### Comment

The cost to realize this opportunity includes the cost of implementing water-saving initiatives at our headquarter campus in 2017.

---

### Identifier

Opp3

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

Supply Chain

### Opportunity type

Resource efficiency

### Primary climate-related opportunity driver

Other

### Type of financial impact driver

Other, please specify (Recovered value: Reverse Supply Chain)

*increased revenues from recovered value of end-of-life products and components*

### Company- specific description

As a responsible producer of hardware products, Oracle offers various take back programs that allow our customers and suppliers to return excess used products or materials. This presents an opportunity for Oracle to not only minimize e-waste by harvesting parts, but also to realize value from recycled materials by working with third party recyclers. In FY17, Oracle collected more than 3 million lbs of material, of which 99.5% was recycled or reused. As our customers increasingly move from on-premise servers to the Oracle Cloud, we will have greater control over the deployment and end-of-life treatment of our assets. As a result, we anticipate the percent of systems we take back versus systems we ship into the market to grow from ~16% today, to more than 50% over the next several years. This will enable us to further maximize the recovered value from old or decommissioned IT equipment. Additionally, through these efforts, Oracle is able to minimize the GHG emissions associated with landfill and the sourcing of raw materials.

### Time horizon

Current

### Likelihood

Very likely

### Magnitude of impact

Medium

**Potential financial impact**

17500000

**Explanation of financial impact**

The financial value recovered through our Take Back program and Reverse Supply Chain amounts to \$15M-\$20M annually, and this figure is growing. This value is derived from a combination of the following: • Remanufactured systems and data center rack solutions • Spare parts and options which extend the support life of products for our customers • Resale of used components The Potential financial impact figure represents an average of the \$15M - \$20M range  $[(15M + 20M) / 2 = 17,500,000]$ .

**Strategy to realize opportunity**

Through our Reverse Supply Chain program, we process more than 3 million lbs of material annually. Oracle's strategy to realize this opportunity includes three key elements: • Increasing volume of material collected • Encouraging reuse ahead of wasteful new purchases and premature recycling • Expanding the channels through which we recover value Oracle's Take Back programs are an example of the Circular Economy in practice. In addition to minimizing waste sent to landfill, this process enables Oracle to drive resource productivity and capture additional value from the materials used to build our products. For example, in FY17 we took back 16 percent of systems compared with the amount we shipped into the market. In addition, much of the recovered financial value from these programs flows back to the entity that returned the product (both external customers and internal Cloud business unit), which encourages customers to reinvest in new Oracle products and services. Our Reverse Supply Chain is distributed across the three regions; Americas, Europe and Asia. Processing Take Back material locally acts as investment in those regions, and reduces transportation miles and the associated carbon emissions.

**Cost to realize opportunity**

200000

**Comment**

The cost to realize this opportunity includes the cost of complying with various environmental schemes globally.

---

**Identifier**

Opp4

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

Direct operations

**Opportunity type**

Resource efficiency

**Primary climate-related opportunity driver**

Other

**Type of financial impact driver**

Benefits to workforce management and planning (e.g., improved health and safety, employee satisfaction resulting in lower costs)

*Improved ability to attract and retain top talent*

**Company- specific description**

Oracle's increasing emphasis on environmental sustainability, both internally and externally, has the potential to strengthen our brand value and reputation. As sustainability and corporate responsibility become increasingly important to job seekers and

employees, we believe that Oracle's reputation as a good corporate citizen is helping us attract and retain top talent, while helping drive employee engagement within our workforce. We anticipate that this opportunity will continue to grow in the coming years, as we invest in strong sustainability practices to drive brand value and reputation.

**Time horizon**

Short-term

**Likelihood**

Very likely

**Magnitude of impact**

High

**Potential financial impact**

1970000000

**Explanation of financial impact**

Potential financial implications of this opportunity include improved profitability and costs savings associated with higher employee engagement, as well as improved retention and recruitment . According to a Gallup report titled "State of the American Workforce " (published 2017), highly engaged business units are likely to realize 17% higher productivity and 21% higher profitability than disengaged business units. Hence, by continuing to invest in strong sustainability practices and employee engagement initiatives, Oracle could increase its profitability by up to 21%. Accordingly, we estimate the financial impact of this opportunity to amount to approximately \$1.97B (by calculating 21% of Oracle's average profitability/net income over the past three years – i.e. \$9.39B), and the calculation is as follows:  $12\% \text{ of } 9.39\text{B} = \$1.97\text{B}$ .

**Strategy to realize opportunity**

One method Oracle is using to realize this opportunity is communicating our sustainability efforts and accomplishments, both internally and externally. For example, Oracle's Corporate Citizenship Report highlights our sustainability efforts and achievements in the areas of facilities, supply chain, products, and employee engagement. Each year, through the Oracle Giving and Oracle Volunteering programs, we support hundreds of environmental nonprofit organizations globally. Additionally, Oracle continued promoting the 'Sustainability Champions' program in 2017, through which we recognize employees who are advancing environmental sustainability, at work and beyond. Oracle's 2017 Sustainability Champions included employees who advocated for market-based and politically viable climate mitigation solutions in North America, championed waste management programs in Latin America, and promoted alternative commuting programs in Europe. In conjunction with the Oracle Volunteering Focus on Environment initiative and Earth Week, Oracle hosts Green Fairs at several office locations globally. The purpose of these fairs is to engage and educate employees around Oracle's sustainability and climate-related initiatives, while also encouraging them to adopt sustainable practices at work and beyond. More than 1,300 Oracle employees attended the 2017 Green Fairs in and around Oracle's headquarters.

**Cost to realize opportunity**

500000

**Comment**

The cost to realize this opportunity includes the costs associated with managing Oracle's sustainability and CSR communications.

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**C2.5**

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

	Impact	Description
Products and services	Impacted	Oracle has several products and services that are impacted by climate change. Oracle's sustainability-related solutions – which enable our customers to advance their own sustainability initiatives – present an opportunity for increased revenue as the demand for low-carbon technology grows. In terms of risks, the growth in Oracle's Cloud business means increased energy use at our Cloud data centers. To manage this risk, Oracle signed on to the Corporate Colocation and Cloud Buyers' Principles to guide the energy procurement strategy for Oracle Cloud data center co-location providers. For example, the principles aim to drive opportunities for colo-customer collaboration on efficiency and renewable energy enhancements. We estimate that the magnitude of impact on our products and services is moderate.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	Climate-related risks and opportunities impact several aspects of Oracle's supply chain, particularly our direct hardware suppliers. For this reason, Oracle incorporates climate-related risks into its supply chain planning and operations. One mechanism through which we manage this risk is membership in the Responsible Business Alliance. We also introduced a Sustainable Procurement Program for our indirect supply chain to help further the responsible behavior of those suppliers, including on climate change mitigation efforts. We estimate that the magnitude of impact on our supply chain is moderate-high.
Adaptation and mitigation activities	Impacted for some suppliers, facilities, or product lines	As part of Oracle's Risk Management and Resiliency Program, we carry out adaptation and mitigation activities around environmental, health and safety planning. This includes assessing and planning for the potential impacts of climate change, including natural disasters (hurricanes, flooding, earthquakes, etc.), and how they might affect Oracle's products, employees, facilities, and reputation. We estimate that the magnitude of impact on our adaptation and mitigation activities is low.
Investment in R&D	Impacted for some suppliers, facilities, or product lines	Climate-related opportunities impact Oracle cloud services, as well as certain hardware product lines. Oracle invests in sustainable product design guidelines and processes (Design for Environment) engaging our hardware engineers in circular economy design principles. We also invest in the development of products and solutions that help our customers advance their own sustainability initiatives. We estimate that the impact of climate-related opportunities on our investment and research and development is low.
Operations	Impacted	Climate-related risks and opportunities impact many aspects of our operations, including facility management, energy efficiency, the use of renewable energy, water and waste reduction, employee health and safety, and transportation and distribution. Oracle has set ambitious sustainability goals addressing emissions reduction, energy efficiency, renewable energy use, water use, and waste reduction. These goals drive strategic decision-making related to Oracle's operations globally, and enable us to conduct our business sustainably. In addition, Oracle's Risk Management and Resiliency Program has a business continuity plan in place to address the potential impact of climate-related natural disasters on our employees. We estimate the impact of climate-related risks and opportunities on our operations is high.
Other, please specify	Please select	

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

	Relevance	Description
Revenues	Impacted for some suppliers, facilities, or product lines	The identified risks and opportunities factor into our revenues through enhancing the sale of Oracle's sustainability related solutions (e.g. business intelligence and reporting tools, utilities applications, supply chain applications, IoT, engineered systems) as well as Oracle's cloud service offerings which also have numerous environmental and climate-related benefits for our customers. We estimate the impact on our revenues to be moderate.
Operating costs	Impacted	The identified risks and opportunities impact multiple aspects of Oracle's operating costs, including utility costs, energy contracts, and other expenses related to facility management and logistics. We estimate the impact of climate-related factors on our operating costs to be moderate.
Capital expenditures / capital allocation	Not yet impacted	The identified risks and opportunities may impact certain aspects of Oracle's capital expenditures, including properties where our data centers and labs are housed. We estimate the impact on our capital expenditures/allocation to be minimal.

	Relevance	Description
Acquisitions and divestments	Impacted	Some aspects of our acquisition strategy are impacted by climate-related opportunities. For example, Oracle acquired Opower, whose Energy Efficiency programs have been implemented at more than 100 electric and gas utilities around the globe to date, motivating customers to save more than 17 TWh of energy through multichannel, personalized communications. We estimate the impact on our acquisitions and divestments to be minimal.
Access to capital	Impacted	We believe that Oracle's access to capital has been modestly impacted by climate-related risks and opportunities. Occasionally, Oracle investors request that we disclose information about our climate mitigations efforts via the CDP Climate Change Program. This indicates that investors do not want to be exposed to unacceptable levels of risk, whether operational or reputational. Operating in a socially responsible manner – including in terms of climate change mitigation – combined with delivering superior shareholder value, maximizes Oracle's ability to access capital. We estimate the impact on access to capital to be minimal.
Assets	Not yet impacted	Rising efficiency standards may require additional investment for some of the hardware assets in Oracle's facilities, including our data centers. We expect that any additional investments would be offset by cost savings. We estimate the impact on our assets to be minimal.
Liabilities	Impacted	Managing risks related to climate change helps Oracle minimize our liabilities, including business disruption exposure and liability insurance. For example, by working with our direct suppliers in collaboration with the Responsible Business Alliance to raise climate change awareness we aim to reduce our exposure to potential supply chain disruptions. We estimate the impact on our liabilities to be minimal.
Other	Please select	

### C3. Business Strategy

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

Yes

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

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

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

**i. Oracle's business objectives and strategy have been influenced by climate change** in that we've incorporated an environmental policy that defines our commitment to sustainable business practices. The process by which Oracle integrates climate change issues into business strategy is through the Environmental Steering Committee (ESC). The ESC – whose members represent various business units – oversees the company's sustainability initiatives and meets quarterly to set goals and monitor progress. Findings and outcomes from these meetings are formulated into business strategy in collaboration with the appropriate business units – e.g. Real Estate and Facilities, Product Strategy, Procurement. Additionally, employees have access to various channels to provide input on climate-related issues.

**ii. Several aspects of Oracle's business strategy are tied to our emissions and energy reduction targets**, including business operations and product strategy. For example, in 2017 we executed four onsite solar projects as a result of our ongoing assessments of economically viable renewable energy deployment opportunities for Oracle-owned facilities. Oracle also signed onto the Corporate Renewable Energy Buyers' Principles, which seek to simplify access to renewable electricity, and help companies

meet their emissions reduction goals. These strategic business decisions are driven by our commitment to reducing our environmental footprint and are tied to Oracle's 2020 emissions reduction targets.

**iii. In 2017, the most substantial business decisions influenced by climate change included:**

- Oracle signed on to the Corporate Colocation and Cloud Buyers' Principles to guide the energy procurement strategy for Oracle Cloud data center co-location providers. This decision represents an effort to mitigate the direct impacts of climate change, by enhancing energy efficiency and promoting clean energy alternatives. Aspects of climate change influencing this decision include the global need to reduce GHG emissions.
- In an effort to drive R&D around minimizing waste and carbon emissions, members of Oracle's different hardware product lines maintain Design for Environment (DfE) guidelines to apply principles of the circular economy (i.e. a system that is restorative or regenerative by design and intention) to Oracle's product lines, including the Oracle Cloud. Key principles include energy efficiency and maximizing our ability to reuse and recycle the materials in our hardware.
- Oracle's Risk Management and Resiliency (RMRP) and Environmental Health and Safety (EHS) teams assess the severity and scale of potential climate-related natural disasters (e.g. hurricanes, flooding, etc.) and accordingly formulate business continuity and resiliency plans on an annual basis. The RMRP process includes a planning, documenting, and testing cycle that assesses Oracle's resiliency to respond to physical risks, including climate-related natural disasters. Aspects of climate change influencing this decision include the increasing likelihood of weather-related natural disasters.
- Through the Sustainability Innovation Awards - at Oracle OpenWorld, 2017 - we recognized customers who use Oracle products to support their sustainability initiatives. This business decision was influenced by the need for a global paradigm shift in business practices with a greater emphasis on sustainability and the use of green technologies.
- Oracle uses several programs to benchmark the environmental performance of its owned buildings. As of 2017, Oracle owned 29 facilities that received ENERGY STAR ratings from the US Environmental Protection Agency, 26 facilities that were recognized by the Building Owners and Managers Association (BOMA) 360 Performance Program, and 5 LEED-certified facilities. This business decision was influenced by the global need to reduce greenhouse gas emissions, and is directly linked with Oracle's Scope 1 and 2 emissions reduction targets.

**iv) Aspects of climate change that have influenced strategy include:** Potential resource availability challenges, the need to reduce energy and water consumption and waste generation, extreme weather events (e.g., floods and storms), potential regulatory changes, and opportunities to develop sustainability-related business solutions for our customers. To this end, we closely monitor our energy and natural resource consumption, and end-of-life disposal of our hardware products.

**v) The most important components of Oracle's short-term strategy that have been influenced by climate change include:** reducing emissions and energy consumption, and equipment selection and management for maximum efficiency. Our short-term strategy includes a commitment to sustainability through several avenues such as:

- Sharing knowledge and best practices, and managing the consumption of energy, water, and other resources in our day-to-day operations;
- Incorporating environmental considerations into leasing, purchasing and procurement processes; an example of this is our



subscription to the Responsible Business Alliance policies.

**vi) The most important components of Oracle's long-term strategy that have been influenced by climate change**

**include:** Emphasizing environmental sustainability in our business operations, and developing sustainability solutions that help our customers manage their own environmental challenges. Internally, we have set aggressive, long-term emissions- and energy-reduction goals (base year 2015), including science-based targets for our Scope 1 and 2 emissions. Our goals include:

- Achieve a 65% reduction in absolute emissions by 2050
- Achieve a 33% target for renewable energy use at Oracle facilities globally by 2020
- Achieve a 20% reduction in energy per revenue by 2020

**vii) How this is gaining us strategic advantage over our competitors:**

Oracle is optimally positioned to deliver practical, concrete solutions that help our customers with their sustainability initiatives. Oracle gains strategic advantage over its competitors by offering a comprehensive and fully integrated stack of cloud applications, platform services, and engineered systems. For example, Oracle's Utilities solutions are enabling massive efficiencies, primarily through Oracle Opower Energy Efficiency programs. Since its launch in 2008, Opower solutions have been implemented at more than 100 electric and gas utilities around the globe, motivating customers to save more than 17 TWh of energy through multi-channel, personalized communications. These energy savings could cool 8.5 million homes, light over 17 million homes or power 1.2 million homes for a year. Oracle is also optimally positioned to manage a highly energy efficient cloud by owning and designing a complete and integrated IT stack.

In recognition of our efforts, Oracle received the Acterra Business Environmental Award in the Acterra Award for Sustainability category for a large company in FY18.

**(C3.1g) Why does your organization not use climate-related scenario analysis to inform your business strategy?**

While Oracle considers several impacts of climate change as part of our existing Risk Management and Resiliency Planning (RMRP) process (e.g. climate-enhanced natural disasters), we have not yet conducted a formal climate-related scenario analysis. Oracle's management of climate-related risks is integrated into company-wide processes via the Environmental Steering Committee, whose members represent a wide range of business units (e.g. Real Estate and Facilities, Supply Chain, Product Strategy, Legal, and Corporate Citizenship). For example, Oracle manages the risk of climate-related resource shortages by setting aggressive sustainability goals, including a renewable energy target and science-based Scope 1 and Scope 2 emissions reduction targets. That said, we plan to consider incorporating climate-related scenario analysis into our annual, corporate-wide RMRP process in the next two years.

**C4. Targets and performance**

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

Absolute target

**(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**

20

**Base year**

2015

**Start year**

2016

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

459516

**Target year**

2020

**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)**

45.26

**Target status**

Underway

**Please explain**

Oracle self-assessed this target to be a mid-term science-based target.

---

**Target reference number**

Abs 2

**Scope**

Scope 1 +2 (market-based)

**% emissions in Scope**

100

**% reduction from base year**

65

**Base year**

2015

**Start year**

2016

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

459516

**Target year**

2050

**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)**

13.93

**Target status**

Underway

**Please explain**

Oracle self-assessed this target to be a long-term science-based target. Oracle would achieve a 2.95% average reduction year-over-year in our absolute scope 1 and 2 emissions.

---

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

**Target**

Renewable energy consumption

**KPI – Metric numerator**

Electricity consumption (MWh)

**KPI – Metric denominator (intensity targets only)**

**Base year**

2015

**Start year**

2016

**Target year**

2020

**KPI in baseline year**

754246

**KPI in target year**

**% achieved in reporting year**

**Target Status**

Underway

**Please explain**

Oracle has a goal to achieve 33 percent renewable energy use by 2020 (base year 2015) at its facilities globally. Progress against this goal is measured based on total electricity consumption at facilities where we have data. Currently, this goal does not include Oracle's colocation data centers.

**Part of emissions target**

Abs1 and Abs2

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

Please select

---

**Target**

Energy usage

**KPI – Metric numerator**

Energy use (kWh)

**KPI – Metric denominator (intensity targets only)**

unit revenue (US\$1000)

**Base year**

2015

**Start year**

2016

**Target year**

2020

**KPI in baseline year**

23.1

**KPI in target year**

18.5

**% achieved in reporting year**

**Target Status**

Underway

**Please explain**

Oracle has a goal to achieve a 20 percent reduction in energy use (kWh) per unit revenue (\$1000) by 2020, against a 2015 baseline.

**Part of emissions target**

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

Please select

---

**Target**

Waste

**KPI – Metric numerator**

Liters

**KPI – Metric denominator (intensity targets only)**

square footage

**Base year**

2015

**Start year**

2016

**Target year**

2020

**KPI in baseline year**

1.01

**KPI in target year**

0.76

**% achieved in reporting year****Target Status**

Underway

**Please explain**

Oracle has a goal to achieve a 25 percent reduction in waste sent to landfill per square foot of owned facilities by 2020, against a 2015 baseline.

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

Please select

**Target**

Other, please specify (Water consumption)

**KPI – Metric numerator**

Liters of potable water

**KPI – Metric denominator (intensity targets only)**

square footage

**Base year**

2015

**Start year**

2016

**Target year**

2020

**KPI in baseline year**

101.2

**KPI in target year**

75.91

**% achieved in reporting year****Target Status**

Underway

**Please explain**

Oracle has a goal to achieve a 25 percent reduction in potable water consumption per square foot of owned facilities by 2020, against a 2015 baseline.

**Part of emissions target**

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

Please select

**(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) 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	19	0
To be implemented*	3	996
Implementation commenced*	4	387
Implemented*	62	29984
Not to be implemented	3	0

**(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**

Building controls

*The footprint of our global facilities portfolio increased 694,449 square feet from the base year of 2015. As part of our efforts to maximize energy efficiency and emissions reduction, we installed dimmable lighting, advanced lighting controls, building HVAC controls, Smart Building Control and Monitoring systems, updated firmware, hardware and advanced control schemes, upgraded our mechanical cooling systems with economizers and higher efficiency components and boiler and heating systems, increased monitoring, and undertook retro-commissioning.*

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

3372

**Scope**

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

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

592091

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

2044734

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

6-10 years

**Comment****Activity type**

Energy efficiency: Processes

**Description of activity**

Please select

*In an effort to reduce our data center emissions, we implemented a number of voluntary measures, including ongoing lab energy optimization initiatives, enhanced IT and cooling power monitoring and tracking, PUE tracking, airflow management, heat containment, hot aisle/cold aisle barriers, efficient airflow, efficient cooling production, airside economizer, evaporative humidification, and evaporative cooling.*

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

1635

**Scope**

Scope 2 (location-based)

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

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

118971

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

535409

**Payback period**

4 - 10 years

**Estimated lifetime of the initiative**

6-10 years

**Comment****Activity type**

Low-carbon energy purchase

**Description of activity**

Other, please specify (Renewable energy, including RECs)

*In 2017, we purchased low carbon energy at several facilities, including 6,133 MWh of renewable energy credits (RECs) in the U.S. and 59,173 MWh in zero carbon electricity globally.*

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

24439

**Scope**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

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

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

5000

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

<1 year

**Comment**

**Activity type**

Low-carbon energy installation

**Description of activity**

Please select

*In December 2017, Oracle completed installations of new 400 kW solar Photovoltaic (PV) arrays at both its Austin Data Center and Utah Compute Facility. We also commenced onsite solar installations at several other facilities around the world, including Pleasanton, CA, and Pune, India.*

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

538

**Scope**

Scope 1

**Voluntary/Mandatory**

Voluntary

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

94591

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

1396663

**Payback period**



4 - 10 years

### Estimated lifetime of the initiative

>30 years

### Comment

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

Method	Comment
Employee engagement	As we manage our facilities, it is our standard protocol to engage employees in more sustainable practices. The employee engagement program is managed by the Corporate Citizenship, Sustainability, and Real Estate and Facilities teams. The objective of the program is to energize employees and solicit their help in reaching Oracle's sustainability goals. We also publish information regarding emissions reduction, energy efficiency, water and waste reduction, on our internal sustainability employee engagement website and in other employee communications including newsletters, social media, and videos.
Employee engagement	Our Real Estate and Facilities team and the Oracle Volunteering program collaborate on an annual Earth Week initiative the week of April 22. Employees worldwide partner with environmental nonprofit organizations and NGOs to take action for a healthy planet. On Earth Day each year, all non-emergency lights and all Oracle signs (internal and external) at Oracle offices are turned off during the local lunch hour. This reduces Oracle's carbon footprint on Earth Day and reminds us of the importance of reducing the amount of energy we use every day. In addition, Oracle hosts Annual Green Fairs at several office locations globally. The purpose of these fairs is to engage and educate employees around Oracle's sustainability and climate-related initiatives, while also encouraging them to adopt sustainable practices at work and beyond. More than 1,300 Oracle employees attended the 2017 Green Fairs in and around Oracle's headquarters.
Internal incentives/recognition programs	Oracle runs the 'Sustainability Champions' program, which recognizes employees who are advancing environmental sustainability, both at work and at home. Sustainability Champions are recognized in Oracle's internal sustainability newsletter, and receive a "Sustainability Champion" badge to include in their employee profiles. Oracle's 2017 Sustainability Champions included employees who advocated for market-based and politically viable climate mitigation solutions in North America, championed waste management programs in Latin America, and promoted alternative commuting programs in Europe.
Financial optimization calculations	Oracle's approach is to create environmentally as well as financially sustainable solutions. We use several different criteria for financial calculations depending on the type of project (owned or leased facility, expected life of efficiency measure, expected term of use/occupancy, etc.). We use criteria such as simple payback, internal rate of return, life cycle costing, etc.
Compliance with regulatory requirements/standards	Oracle strives to comply with local, regional and national regulations and standards applicable to each of our facilities and products. We endeavor to meet or exceed all such regulatory standards and requirements.
Dedicated budget for energy efficiency	Our Real Estate and Facilities team, which includes data center design and operations, has dedicated headcount and resources for energy efficiency. Our teams work to design more energy efficient data centers and facilities, and monitor equipment to track and optimize its energy performance. Oracle's approach is to make energy efficiency and sustainability an integral part of our operations. We continually explore new technologies and solutions and carry out many energy efficiency projects, including leveraging external incentives where available, as long as they meet our internal ROI criteria.
Dedicated budget for other emissions reduction activities	Oracle is committed to reducing its environmental impact where practical and economically feasible. Our Real Estate and Facilities organization has a dedicated budget for several emissions reduction activities, including purchase of renewable energy, commuter travel, and employee ride sharing programs. In 2017, we continued our work to reduce travel by leveraging Oracle products and updating our travel-related business practices. We ask employees to travel only when necessary and employ Oracle Web Conferencing and video conferencing technologies across our enterprise to ensure that virtual meetings are highly effective. In addition, we have installed electric vehicle charging stations at several of our facilities, and offer alternative transportation and commuter benefits to our employees across North America. In recognition of these efforts, Oracle was named a Best Workplace for Commuters in California for meeting the National Standard of Excellence.
Dedicated budget for low-carbon product R&D	Oracle develops products that support more than 430,000 customers in 175 countries to employ our industry-leading technology to address their environmental initiatives in conjunction with other business objectives.

**(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) 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**

Many of Oracle's solutions enable our customers to be more environmentally sustainable and to reduce their greenhouse gas emissions. These solutions are broadly categorized under 'Risk and Performance Management' (including environmental data collection, analytics, and reporting); 'Business Operations' (including transportation management, smart grid technologies, and product lifecycle management); and 'IT Infrastructure' (including energy efficient engineered systems, Internet of Things (IoT), Big Data, Blockchain, and cloud computing).

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

Avoided emissions

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

Other, please specify (Reported on a customer-by-customer basis)

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

**Comment**

Inherently, the benefits of many of these solutions are not just limited to environmental performance improvements, but also include cost reduction and continuous business improvement potential. It is not within Oracle's policy to provide revenue breakdowns at the product level beyond what is available in our 10-K filings. In terms of R&D, Oracle is rigorously focused on working with its customers to meet their business needs in the ongoing development of our solutions. Given Oracle's commitment to developing practices and products that help protect the environment, this includes addressing product enhancement requests from customers related to their sustainability efforts. Oracle's strategy is to embed sustainability related features in products so customers can leverage their existing IT investments and business processes wherever possible. In many cases customers are also able to configure Oracle's solutions to address their sustainability needs in conjunction with other business objectives. In FY17, Oracle spent \$6.2 billion on research and development of products and services, including those related to sustainability and climate change mitigation.

**C5. Emissions methodology**

**(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)**

14953

**Comment**

In an effort to enhance the completeness of our data, we expanded our reporting boundary to include emissions from small sources (Scope 1) and from our colocation data centers (scope 2) in our 2017 inventory. To allow for meaningful comparison, we recalculated our previous years' emissions (2016 and base year 2015) to include these additional sources. The numbers reported here reflect these changes.

**Scope 2 (location-based)**

**Base year start**

January 1 2015

**Base year end**

December 31 2015

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

505575

**Comment**

In an effort to enhance the completeness of our data, we expanded our reporting boundary to include emissions from small sources (Scope 1) and from our colocation data centers (scope 2) in our 2017 inventory. To allow for meaningful comparison, we recalculated our previous years' emissions (2016 and base year 2015) to include these additional sources. The numbers reported here reflect these changes.

**Scope 2 (market-based)**

**Base year start**

January 1 2015

**Base year end**

December 31 2015

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

444563

**Comment**

In an effort to enhance the completeness of our data, we expanded our reporting boundary to include emissions from small sources (Scope 1) and from our colocation data centers (scope 2) in our 2017 inventory. To allow for meaningful comparison, we recalculated our previous years' emissions (2016 and base year 2015) to include these additional sources. The numbers reported here reflect these changes.

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

Row 1

**Gross global Scope 1 emissions (metric tons CO2e)**

14763

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

Row 1

**Scope 2, location-based**

We are reporting a Scope 2, location-based figure

**Scope 2, market-based**

We are reporting a Scope 2, market-based figure

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

Row 1

**Scope 2, location-based**

513072

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

403160

**(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) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.**

**Purchased goods and services**

**Evaluation status**

Relevant, calculated

**Metric tonnes CO2e**

77507

**Emissions calculation methodology**

This figure represents the estimated emissions associated with two key categories of purchased goods: furniture and computers.

The emissions were calculated by multiplying the spend data for both categories of goods by the corresponding conversion factors as outlined in the DEFRA 2012 Conversion Factor Repository, Annex 13.

**Capital goods**

**Evaluation status**

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

588157

**Emissions calculation methodology**

Oracle used the value of Property, Plant, and Equipment (PP&E) as indicated in our balance sheet to determine our capital expenditures for fiscal year 2017. The upstream impact of these investments was calculated using the conversion factors for each category (machinery and equipment, furniture, land, etc.) as outlined in the DEFRA 2012 Factor Repository.

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

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

24190

**Emissions calculation methodology**

According to the Energy Information Administration (EIA), approximately 6 percent of total electricity input in the US is lost to transmission and distribution. Based on this assumption, we calculated 6 percent of our total Scope 2 emissions to estimate the Scope 3 emissions around fuel- and energy-related activities. The Scope 2 emissions figure was calculated using the following standards: EPA eGRID 2012 for U.S. Electricity; EPA GHG Emission Factors Hub for U.S. Natural Gas; National Greenhouse Accounts Factors for Australia Electricity and Natural Gas; DEFRA Greenhouse Gas Conversion Factor Repository (2016) for Electricity and Natural Gas in all other countries.

**Upstream transportation and distribution****Evaluation status**

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

33270

**Emissions calculation methodology**

These are emissions from third party service providers who move products or product components to various manufacturing locations and to our customers globally. The emissions are estimated using an equation from the World Resources Institute (WRI) Greenhouse Gas Protocol: Distance Traveled x Total Weight x WRI GHG Protocol emissions cofactor per transport mode. To calculate this, our vendor has developed an internal tool which uses the following information: 1) Actual customer shipment records for the period, listing origin and destination points, weight per shipment and primary shipment mode; 2) A proprietary distance table based largely on the Publication 151 – Distance Between Ports. National Imagery and Mapping Agency, 2001. Distances are calculated based on common vessel routings for ocean and using the “Great Circle Distance” method for air and ocean; 3) GHG Protocol emissions cofactors per primary mode of transport.

**Explanation**

Our transportation and distribution vendor provides us with one figure, which includes both upstream and downstream emissions. We estimate that the scale of our upstream and downstream operations is roughly equal. Therefore, we are reporting 50% of the total emissions figure (66,540 MT CO<sub>2</sub>) in each category.

### **Waste generated in operations**

#### **Evaluation status**

Relevant, calculated

#### **Metric tonnes CO<sub>2</sub>e**

769

#### **Emissions calculation methodology**

This data represents emissions produced in landfills from waste generated in the total area under our operational control at Oracle-owned buildings globally. The volume of waste was converted to lbs using an average density of 450 lbs per yd<sup>3</sup>. The emissions calculation was based on the EPA Waste Reduction Model (WARM) version 14 (updated March 2016) using the 0.35 National Average Emission Factor for Landfilling.

### **Business travel**

#### **Evaluation status**

Relevant, calculated

#### **Metric tonnes CO<sub>2</sub>e**

184168

#### **Emissions calculation methodology**

This data is acquired from Oracle's air travel reporting tool, as well as our car rental vendors. For air travel, Oracle uses an internal system that is part of the Oracle Business Intelligence Enterprise Edition (OBIEE) tool, leveraging the DEFRA Greenhouse Gas Conversion Factor Repository (2017).

### **Employee commuting**

#### **Evaluation status**

Relevant, calculated

#### **Metric tonnes CO<sub>2</sub>e**

82.95

#### **Emissions calculation methodology**

This number was calculated using annual mileage data from Oracle's employee shuttle service providers. The emissions were estimated using the following emission factors: CO<sub>2</sub>: 0.107 (kg CO<sub>2</sub>/passenger-mile), CH<sub>4</sub>: 0.0006 (g CH<sub>4</sub>/passenger-mile), N<sub>2</sub>O: 0.0005 (g N<sub>2</sub>O/passenger-mile), as referenced in the EPA Climate Leaders Greenhouse Gas Inventory Protocol Core Module Guidance for Bus Business Travel. These emission factors are based on the assumption that the bus travel is conducted in buses mainly fueled by diesel, and were derived from statistical information on passenger-mile in Table VM-1 of the Federal Highway Administration's Highway Statistics 2005, along with emissions data from Table 2-17 from the U.S. Greenhouse Gas Emissions and Sinks: 1990–2005.

**Explanation**

The figure represents emissions data from our employee shuttle providers for our offices in Redwood Shores and Santa Clara, CA. This figure does not include emissions from individual employee commuting. With more than 138,000 employees globally, located in over 80 countries, flex working schedules and telecommuting, we are unable to provide a calculation for individual employees.

**Upstream leased assets****Evaluation status**

Not relevant, explanation provided

**Metric tonnes CO<sub>2</sub>e****Explanation**

Oracle leases a number of facilities and equipment such as copiers. All emissions related to these upstream leased assets are within our Scope 1 and 2 GHG inventory.

**Downstream transportation and distribution****Evaluation status**

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

33270

**Emissions calculation methodology**

These are emissions from third party service providers who move products or product components to various manufacturing locations and to our customers globally. The emissions are estimated using an equation from the World Resources Institute (WRI) Greenhouse Gas Protocol: Distance Traveled x Total Weight x WRI GHG Protocol emissions cofactor per transport mode. To calculate this, our vendor has developed an internal tool which uses the following information: 1) Actual customer shipment records for the period, listing origin and destination points, weight per shipment and primary shipment mode; 2) A proprietary distance table based largely on the Publication 151 – Distance Between Ports. National Imagery and Mapping Agency, 2001. Distances are calculated based on common vessel routings for ocean and using the “Great Circle Distance” method for air and ocean; 3) GHG Protocol emissions cofactors per primary mode of transport.

**Explanation**

Our transportation and distribution vendor provides us with one figure, which includes both upstream and downstream emissions. We estimate that the scale of our upstream and downstream operations is roughly equal. Therefore, we are reporting 50% of the total emissions figure (66,540MT CO<sub>2</sub>) in each category.

**Processing of sold products****Evaluation status**

Not relevant, explanation provided

**Explanation**

Subsequent to manufacturing, Oracle products are not processed further.

### **Use of sold products**

#### **Evaluation status**

Relevant, calculated

#### **Metric tonnes CO2e**

40576

#### **Emissions calculation methodology**

This calculation represents emissions from a single line of Oracle servers. In calculating this figure, we used the US Average Domestic Electricity Emission Factor of 0.676 MT of CO2 per MWh (in accordance with the US Energy Information Administration, Domestic Electricity Emission Factors, 1999-2002). In addition, we assumed a customer load factor of 50% across the population of servers and an average Power-Utilization-Effectiveness (PUE) of 1.5 for our customers' data centers.

### **End of life treatment of sold products**

#### **Evaluation status**

Not relevant, explanation provided

#### **Explanation**

Upon evaluating the estimated emissions associated with the disposal and treatment of Oracle-branded products, we determined that this source is not relevant and the emissions are not material to our Scope 3 emissions footprint. We offer product take-back to all of our customers to help ensure products are recycled or disposed of responsibly and in compliance with the law. Products that cannot be remanufactured by Oracle for reuse are sent to our contracted recyclers, who responsibly recycle, or resell the remaining material - sending less than 0.5% to landfill. In FY17, Oracle took back more than 3 million lbs of product, of which 99.5% was recycled or reused. Oracle conducts audits to help ensure that our recyclers and their downstream processors have proper Health & Safety controls in place and are compliant with local law. By expanding the number of sites in our recycling network and increasing the percentage of material reused vs. recycled, we reduce shipping miles and conserve raw materials, both of which have an environmental benefit. We assist our customers in their end-of-life planning and in many cases offer de-install, data destruction, transportation and recycling services at no charge. More information of Oracle's Take Back and Recycling programs can be found at: <http://www.oracle.com/us/products/servers-storage/take-back-and-recycling/index.html>

### **Downstream leased assets**

#### **Evaluation status**

Relevant, calculated

#### **Metric tonnes CO2e**

9716.17

#### **Emissions calculation methodology**

This figure was calculated by multiplying the total square feet of subleased space by 15.9 kWh of electricity consumption per square feet (taken from the EIA CBECS survey) and the eGRID subregion US average emission factor of 1,136.53 lbs/MWH.

### **Franchises**

#### **Evaluation status**



Not relevant, explanation provided

**Explanation**

Oracle does not have any franchises.

**Investments**

**Evaluation status**

Not relevant, explanation provided

**Explanation**

Oracle is not a financial institution. Our "investments" are primarily debt investments without known use of proceeds.

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

No

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

**Intensity figure**

0.0000107421

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

417923

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

38905000000

**Scope 2 figure used**

Market-based

**% change from previous year**

12.52

**Direction of change**

Decreased

**Reason for change**

Emission reduction activities such as increased operational efficiency.

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**Intensity figure**

2.996809029

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

417923

**Metric denominator**

full time equivalent (FTE) employee

**Metric denominator: Unit total**

139456

**Scope 2 figure used**

Market-based

**% change from previous year**

9.6

**Direction of change**

Decreased

**Reason for change**

Emission reduction activities such as increased operational efficiency, and employee engagement.

## C7. Emissions breakdowns

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

Yes

**(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	14736	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	19	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	8	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	0	IPCC Fourth Assessment Report (AR4 - 100 year)
PFCs	0	IPCC Fourth Assessment Report (AR4 - 100 year)

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

Country/Region	Scope 1 emissions (metric tons CO2e)
North America	10282
Asia Pacific (or JAPA)	2284
Latin America (LATAM)	187
Europe, Middle East and Africa (EMEA)	2010

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

By activity

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

Activity	Scope 1 emissions (metric tons CO2e)
Data center activities: The figure cited here represents fuel use for backup electricity at our standalone data centers in Austin, Texas and Salt Lake City, Utah.	294
Various business activities, including but not limited to manufacture of hardware and business services (office based activities)	14469

**(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)
North America	318953	272525	790413	49232
Asia Pacific (or JAPA)	108029	107557	145391	32
Latin America (LATAM)	3262	3262	13141	0
Europe, Middle East and Africa (EMEA)	82828	19816	209484	155002

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

By activity

**(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)
Data center activities: The figure cited here applies to our two largest data centers, Austin Data Center and Utah Compute Facility, as well as emissions from our 10 smaller data centers located in California, Colorado, and Utah in the U.S., and Reading and Linlithgow in the U.K. Additional business activities are managed within the smaller facilities and, as such, emissions data for these locations is included in the noted figure.	82050	68874
Various business activities, including but not limited to manufacture of hardware and business services (office based activities)	246370	211380
Emissions from colocation data center facilities associated with Oracle Cloud services	184652	122906

**(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) 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	39475	Decreased	8.6	This calculation represents the emissions savings resulting from increased renewable energy consumption from 2016 to 2017 (88,584 MTCO2e in 2017 vs. 49,109 MTCO2e in 2016 = 39,475 MTCO2e increase in savings). In addition to increasing our renewable energy procurement through utilities/suppliers, we completed installations of new 400 kW solar Photovoltaic (PV) arrays at both our Austin Data Center and Utah Compute Facility. We also commenced onsite solar installations at several other facilities around the world, including Pleasanton, CA, and Pune, India. The emissions value percentage was calculated by dividing the estimated savings by the previous year's scope 1 and scope 2 emissions (457,224 MTCO2e). Therefore, we arrived at 8.6% through $(39,475/457,224)*100$ . Note: we expanded our reporting boundary to include emissions from small sources (Scope 1) and from our colocation data centers (scope 2) in our 2017 GHG inventory. To allow for meaningful comparison, we recalculated our previous years' emissions (2016 and base year 2015) to include these additional sources. The 2016 numbers reported in this section reflect these changes.
Other emissions reduction activities	5007	Decreased	1.09	In 2017, an estimated 5,007 MTCO2e were reduced by our emissions reduction initiatives globally, and our total scope 1 and scope 2 emissions in the previous year amounted to 457,224 MTCO2e. Therefore, we arrived at 1.09% through $(5,007/457,224)*100= 1.09$ To achieve this, we implemented several emissions reduction initiatives, including employee engagement; leveraging automated systems to control heating, cooling, ventilation, lighting, and other energy-consuming equipment; LED lighting installation; lighting and HVAC system and control upgrades; domestic hot water upgrades; modified boiler systems to reduce operating times; submeter installation to monitor individual labs and large equipment.
Divestment				
Acquisitions				
Mergers				
Change in output	63697	Increased	13.93	In 2017, our total emissions at Oracle's colocation data center facilities increased as a result of the growth in our cloud business (total colocation emissions amounted to 120,955 MTCO2e in 2016 vs. 184,652 MTCO2e in 2017). The emissions value percent was calculated by dividing the increase in cloud emissions (63,697 MTCO2e) by the previous years' scope 1 and 2 emissions (457,224 MTCO2e). Therefore, we arrived at 13.93% through $(63,697/457,224)*100$ .
Change in methodology				
Change in boundary				
Change in physical operating conditions				
Unidentified				
Other	58707.56	Decreased	12.84	We further reduced our emissions through improved operational efficiencies, including a significant reduction in electricity use at several Oracle facilities and data centers. In addition, we undertook a number of lab consolidation projects that resulted in

Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
			energy and emissions savings. The emissions value percent was calculated by dividing the estimated emissions reduction (58,707 MTCO2e) by the previous years' scope 1 and 2 emissions (457,224 MTCO2e). Therefore, we arrived at 12.84% through $(58,707/457,224)*100$ .

**(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) 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) 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	Yes
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	Yes
Generation of electricity, heat, steam, or cooling	Yes

**(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	65880	65880
Consumption of purchased or acquired electricity		204266	949993	1154259
Consumption of purchased or acquired heat		0	1162	1162
Consumption of purchased or acquired steam		0	100	100

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of purchased or acquired cooling		0	2908	2908
Consumption of self-generated non-fuel renewable energy		0	0	0
Total energy consumption		204266	1020043	1224309

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

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

**(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**

60989

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

8598

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

52391

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

<Field Hidden>

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

<Field Hidden>

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

<Field Hidden>

**Fuels (excluding feedstocks)**

Diesel

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

2826

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

2826

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

0

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

<Field Hidden>

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

<Field Hidden>

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

<Field Hidden>

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**Fuels (excluding feedstocks)**

Other, please specify (Estimate of fuel use for owned vehicles)

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

2065

**MWh fuel consumed for the self-generation of electricity****MWh fuel consumed for self-generation of heat****MWh fuel consumed for self-generation of steam****MWh fuel consumed for self-generation of cooling****MWh fuel consumed for self- cogeneration or self-trigeneration**

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

0.25322

**Unit**

metric tons CO<sub>2</sub>e per MWh

**Emission factor source**

US EPA Emission Factors for Greenhouse Gas Inventories, 9 March 2018

**Natural Gas**

**Emission factor**

0.18123

**Unit**

metric tons CO2e per MWh

**Emission factor source**

US EPA Emission Factors for Greenhouse Gas Inventories, 9 March 2018

**Other****Emission factor**

0.1975

**Unit**

metric tons CO2e per MWh

**Emission factor source**

DEFRA Conversion Factors 2017 and US EPA Emission Factors for Greenhouse Gas Inventories, 9 March 2018

**Comment**

This emission factor was derived from the DEFRA Conversion Factors 2017 repository (passenger vehicles category) -- 0.29357 kgCO2e per miles for Average vehicle (assuming an average mileage of 10,000 per vehicle). The fuel consumption was estimated using EPA's EF Hub, Heat content for motor gasoline (.125 MMBtu/gal).

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	2826	2826	0	0
Heat	60989	60989	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

**(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**

Energy attribute certificates, Renewable Energy Certificates (RECs)

**Low-carbon technology type**

Wind

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

6133



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

0

**Comment**

In 2017, we purchased low carbon energy at several facilities, including 5,400 MWh of renewable energy credits (RECs) at Oracle's Austin Data Center.

**Basis for applying a low-carbon emission factor**

Contract with suppliers or utilities ( e.g. green tariff), supported by energy attribute certificates

**Low-carbon technology type**

Other low-carbon technology, please specify (Type varies by supplier and region)

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

59173

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

0

**Comment**

This represents the zero carbon electricity purchased through suppliers at several locations around the world.

**Basis for applying a low-carbon emission factor**

Other, please specify (Renewable use at colocation datacenters)

**Low-carbon technology type**

Other low-carbon technology, please specify (Type varies by supplier and region)

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

138960

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

0

**Comment**

This represents the zero carbon electricity purchased at Oracle's colocation data center facilities globally.

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

Waste

**Metric value**

0.76

**Metric numerator**

Liters

**Metric denominator (intensity metric only)**

square footage (owned buildings)

**% change from previous year**

6.2

**Direction of change**

Decreased

**Please explain**

Oracle has a goal to achieve a 25 percent reduction in waste sent to landfill per square foot of owned facilities by 2020, against a 2015 baseline.

---

**Description**

Energy use

**Metric value**

21.45

**Metric numerator**

kWh

**Metric denominator (intensity metric only)**

Unit of revenue (\$1000)

**% change from previous year**

9.18

**Direction of change**

Decreased

**Please explain**

Oracle has a goal to achieve a 20 percent reduction in energy use (kWh) per unit revenue (\$1000) by 2020, against a 2015 baseline.

---

**Description**

Other, please specify (Water use)

**Metric value**

91.19

**Metric numerator**

Liters of potable water

**Metric denominator (intensity metric only)**

square footage (owned buildings)

**% change from previous year**

4

**Direction of change**

Decreased

**Please explain**

Oracle has a goal to achieve a 25 percent reduction in potable water consumption per square foot of owned facilities by 2020, against a 2015 baseline.

## C10. Verification

**(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) 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

[Oracle 2017 GHG Inventory Assurance Review Letter\\_Final.pdf](#)

#### Page/ section reference

1-2

#### Relevant standard

ISO14064-3

#### 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**

[Oracle 2017 GHG Inventory Assurance Review Letter\\_Final.pdf](#)

**Page/ section reference**

1-2

**Relevant standard**

ISO14064-3

**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**

[Oracle 2017 GHG Inventory Assurance Review Letter\\_Final.pdf](#)

**Page/ section reference**

1-2

**Relevant standard**

ISO14064-3

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

100

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**(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**

[Oracle 2017 GHG Inventory Assurance Review Letter\\_Final.pdf](#)

**Page/section reference**

1-2

**Relevant standard**

ISO14064-3

**(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) 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 (Total energy consumption (MWh))	ISO 14064-3	In addition to our emissions data, we verified our total energy consumption (MWh) for 2017, as reported in C8.2a. <a href="#">Oracle 2017 GHG Inventory Assurance Review Letter_Final.pdf</a>

**C11. Carbon pricing**

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

No

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

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

**C12. Engagement**

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

Yes, our suppliers

Yes, our customers

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

**Type of engagement**

Information collection (understanding supplier behavior)

**Details of engagement**

Collect climate change and carbon information at least annually from suppliers

**% of suppliers by number**

2.7

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

72

**% Scope 3 emissions as reported in C6.5**

18.5

**Rationale for the coverage of your engagement**

This engagement initiative covers Oracle's key, strategic suppliers who support a majority of our business travel needs, including airlines, car rental providers, and hotels. These suppliers represent 72% of our travel-related spend, and their climate-related initiatives help us manage our own scope 3 footprint around business travel emissions. Oracle engages these suppliers at quarterly business planning meetings, where environmental and climate-related performance are addressed, among other strategic topics.

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

The impact of this engagement initiative includes improved energy efficiency and emissions reductions, impacting Oracle's Scope 3 emissions footprint. Measures of success: Oracle's Scope 3 emissions resulting from business travel reduced by 16% from 2016 to 2017.

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**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**

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

85

**% Scope 3 emissions as reported in C6.5**

**Rationale for the coverage of your engagement**

This engagement initiative covers Oracle's strategic direct hardware suppliers, representing a significant portion of Oracle's spend. As a member of the Responsible Business Alliance (RBA), we have established a formal process for engaging with our suppliers on a variety of issues related to climate change, including energy consumption and GHG emissions, water use, and hazardous substances. In 2017, we engaged with our strategic suppliers to report data on their carbon, water and waste footprints via the RBA platform, aiming to achieve a supplier response rate of 85% based on hardware spend. Oracle leverages quarterly scorecards for our strategic suppliers, and provides training to new supplier managers around quarterly SER deliverable requests and why they are important. In addition, Oracle is an active member of the RBA Environmental Sustainability working group, and contributed to revising language in the code, addressing energy and water issues in the supply chain. Oracle also evaluated the RBA environmental maturity model to determine how it may be applied to our own strategic manufacturing suppliers, in addition to being leveraged by other RBA members. These efforts help us to not only educate our supply chain on various climate related issues and strategies, but also to help us manage our own environmental impact, and that of our products.

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

The impact of engagement includes greater transparency into Oracle's supply chain, and the associated risks and areas for improvement. In 2017, we exceeded our goal of engaging Oracle's hardware suppliers representing 85% of our total spend, ultimately receiving responses from 94%.

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**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****% total procurement spend (direct and indirect)****% Scope 3 emissions as reported in C6.5****Rationale for the coverage of your engagement**

Oracle's Internal Category Procurement Managers identify key suppliers, particularly those that have strong sustainability records.

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

As part of Oracle's Sustainable Procurement program, we are requesting quantitative and qualitative reporting from our key indirect suppliers to better understand supplier behavior and to identify potential areas for improvement. These metrics are compiled into supplier success stories that are shared with Oracle employee company-wide.

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

Collaboration & innovation

**Details of engagement**

Run a campaign to encourage innovation to reduce climate change impacts

**Size of engagement**

0.12

**% Scope 3 emissions as reported in C6.5**

3.35

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

As a strong proponent of the circular economy, Oracle provides several Take Back programs for our hardware customers. In the absence of such programs, Oracle's hardware products could result in significant electronic waste at the end of their useful life. Hence, the rationale for offering these programs to our hardware customers is to help mitigate any environmental impacts or security risks that may be caused by improper disposal of old or decommissioned IT equipment. Customers who use our Take Back programs have access to free on-site services, including disk erasure, as concerns around data security continue to grow. Each year, approximately 40,000 spare parts are harvested, tested and provided to Oracle Service to support customers and extend the useful life of product. Customers who upgrade after 4-5 years of use help support other customers who choose to run product for 8-12 years, thus conserving natural resources. With the growth of Oracle's Cloud business, we anticipate the percent of systems we take back versus systems we ship into the market to grow from ~16% today, to more than 50% over the next several years. Our

Reverse Supply Chain is distributed across the 3 regions; Americas, Europe and Asia. Processing Take Back material locally acts as investment in those regions, and reduces transportation miles, as well as associated carbon emissions.

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

Success is measured by the volume of material collected through Oracle's Take Back programs, and the percentage diverted from landfill. In FY17, Oracle took back more than 3 million lbs of product, of which 93.3% was recycled, 6.2% reused, and only 0.5% sent to landfill.

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**Type of engagement**

Education/information sharing

**Details of engagement**

Please select

**Size of engagement**

**% Scope 3 emissions as reported in C6.5**

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

Oracle released a 'digibook' titled The Sustainable Supply Chain, with the goal of enabling our customers to drive sustainability within their own organizations. The digibook includes key sustainability initiatives companies are enabling today, how businesses across different industries are managing more sustainable operations, and Oracle's modern suite of solutions that help companies meet their sustainability goals. The publication was shared with supply chain managers and professionals from several companies. The rationale for selecting this group was to provide valuable guidance and thought leadership to both existing and prospective customers.

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

The Sustainable Supply Chain digibook has been shared with more than 7,400 users, including Oracle customers, and has reached additional users through online and in-person engagement, including blogs, customer campaigns, etc.

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**Type of engagement**

Education/information sharing

**Details of engagement**

Please select

**Size of engagement**

**% Scope 3 emissions as reported in C6.5**

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

Oracle OpenWorld is Oracle's annual customer conference, engaging more than 60,000 attendees. The event is designed and implemented with sustainability in mind, and has set aggressive sustainability goals around emissions offset, water and waste reduction. During the event, Oracle customers are engaged in several sustainability sessions and have the opportunity to learn about Oracle's climate change performance and strategy. For example in 2017, the background information slides shown during keynotes included messaging that highlighted Oracle's commitment to sustainability and climate change mitigation. Slides highlighted the amount of waste diverted from landfill at previous OpenWorld conferences, leftover meals donated to help those in need, and the amount of carbon offset by Oracle and attendees. In addition, Oracle hosts a Sustainability Innovation Awards event



at OpenWorld each year, where we recognize customers who are using Oracle products and services to meet their own sustainability goals. 2017 marked the tenth anniversary of these awards.

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

The impact of this engagement included progress toward Oracle's event sustainability goals. For example, Oracle and its venue partners offset 542 metric tons of carbon in 2017, which represents 100% of onsite carbon emissions at the event. An additional 2,884 Metric tons of carbon were voluntarily offset by event participants. Through the Sustainability Innovation Awards, we recognized several Oracle customers using our products to advance their own sustainability initiatives. The 2017 winners included An Post, Henkel, and Shawnee State University.

**Type of engagement**

Education/information sharing

**Details of engagement**

Please select

**Size of engagement**

**% Scope 3 emissions as reported in C6.5**

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

Oracle hosts several forums for building awareness and sharing best practices with our customers on an ongoing basis, through videos, customer case studies, and news. Oracle has a dedicated Sustainability YouTube channel and a Sustainability Matters blog, which are accessible to existing and potential customers around the world.

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

The impact of engagement includes a growing audience of existing and potential customers through these online platforms. The Oracle Sustainability Solutions YouTube channel has more than 745 subscribers, and the customer success stories have collectively garnered more than 20,000 views till date.

**Type of engagement**

Collaboration & innovation

**Details of engagement**

Run a campaign to encourage innovation to reduce climate change impacts

**Size of engagement**

**% Scope 3 emissions as reported in C6.5**

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

Paul Hawken, an American environmentalist and activist, was invited as a keynote speaker at a key Oracle event – Oracle Modern Supply Chain Experience. The event hosts 3,000 supply chain professionals, including Oracle's customers, partners and employees each year. During his speech, Hawken not only shared his concerns around climate change, but also his ideas around potential solutions and technologies that can help reverse global warming.

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

Success is measured by the number of individuals reached. The 2017 Oracle Modern Supply Chain Experience was attended by 3,000 supply chain professionals, including Oracle customers, partners, and employees.

**(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?**

Trade associations

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

Yes

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

**Trade association**

Information Technology Industry Council (ITI)

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

Consistent

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

ITI's Environmental Leadership Council leads industry engagement in product materials selection and design; green procurement standards and policies; product stewardship and e-recycling initiatives; and supply chain transparency and sustainability challenges.

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

Oracle serves on the Board of Directors of the Information Technology Industry Council (ITI) and works with ITI to promote improved energy efficiency and reduced energy use within states and the United States federal government. These actions align with ITI's position on climate change, and are considered among ITI's key focus areas.

**Trade association**

Advanced Energy Economy (AEE)

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

Consistent

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

AEE is the primary association representing the advanced energy industry. They promote the environmental and economic benefits of a range of advanced energy solutions, including energy efficiency and tools to incorporate renewable energy into the electric grid.

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

Oracle serves on the Board of Directors of AEE and shapes all of AEE's policy positions on issues that impact the market size for our products, particularly the energy efficiency solutions we provide to utilities. We also help implement those policy positions by supporting advocacy efforts.

**Trade association**

DigitalEurope

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

Consistent

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

DigitalEurope's Digital Sustainability Policy Group (DSPG) 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. The aim is to demonstrate leadership in this area, helping to support other industries through advancement in electronics, software applications and services.

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

Oracle's work with DigitalEurope's Digital Sustainability Policy Group encompasses the following focus areas: Chemicals, Ecodesign, Waste, Resource efficiency. Each focus area addresses a number of topical issues including substance restrictions, eWaste, material and energy efficiency, GHG measuring, and ecolabels.

**Trade association**

American Chamber of Commerce to the EU

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

Consistent

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

AmCham EU strives to promote a coherent, science-based and balanced approach to sustainable growth. It supports better regulation and facilitation of the transatlantic dialogue on environmental issues. The committee identifies, monitors, evaluates and makes policy recommendations on European environmental policies including: • Chemical legislation (REACH) • RoHS and Waste Electrical and Electronic Equipment (WEEE) Directive implementation • Circular economy • Resource efficiency and waste • Conflict minerals • Air quality

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

Oracle engages in committee work at AmCham EU, particularly in the environment committee and the transport, energy and climate committee. Both committees cover current issues like resource efficiency, waste and circular economy, RoHS implementation and review, as well as conflict minerals. A senior Oracle executive currently holds the position of Chairman of the Board for the organization.

**(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?**

The processes that Oracle has in place to ensure that all of our direct and indirect activities that influence policy are consistent with our overall climate strategy are:

Oracle's Environmental Steering Committee (ESC) – which includes representatives from several business units, including the Public Policy and Government Affairs teams, and which is led by Oracle's Chief Sustainability Officer (CSO) – ensures a common approach that is consistent with Oracle's overall strategy on climate change. The ESC meets quarterly, with sub-committees and working groups meeting more frequently.

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

In mainstream reports

**Status**

Complete

**Attach the document**

[Oracle Corporation Form 10-K FY18.pdf](#)

**Content elements**

Risks & opportunities

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**Publication**

In voluntary sustainability report

**Status**

Underway – previous year attached

**Attach the document**

[Energy and Emissions section Oracle Corporate Citizenship Report 2017.png](#)

[CSO Message Oracle Corporate Citizenship Report 2017.PNG](#)

[Data Centers section Oracle Corporate Citizenship Report 2017.PNG](#)

[Facilities section Oracle Corporate Citizenship Report 2017.PNG](#)

[Sustainability section Oracle Corporate Citizenship Report 2017.PNG](#)

[Supply Chain section Oracle Corporate Citizenship Report 2017.PNG](#)

[Water and Waste section Oracle Coporate Citizenship Report 2017.png](#)

**Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

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**Publication**

In voluntary communications

**Status**

Complete

**Attach the document**

[Oracle Sustainability Matters Blog post.png](#)

[Social media Oracle Sustainability Goals.png](#)

**Content elements**

Emission targets

Other metrics

## C14. Signoff

(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	Chief Sustainability Officer and Group Vice President, Product Strategy	Chief Sustainability Officer (CSO)