



Supply Chain 2017 Information Request Cavium

Module: Introduction

Page: Introduction Supply Chain

Climate change

Please tick the box below to complete the introduction questions for Climate Change

true

CC0.1 Introduction

Please give a general description and introduction to your organization.

Cavium (NASDAQ: CAVM) is a provider of highly integrated semiconductor processors that enable intelligent networking, communications, storage and data center.

CC0.2 Reporting Year

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day/month/year (in full i.e. 2001).

Enter Periods that will be disclosed

Fri 01 Jan 2016 - Sat 31 Dec 2016

CC0.3 Country list configuration

Please select the countries for which you will be supplying data.

Select country
United States of America
Singapore
Taiwan
China
India
Japan
Ireland

CC0.4 Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD(\$)

CC0.5 Please select if you wish to complete a shorter information request.

Water

Please tick the box below to complete the introduction questions for Water

false

Further Information

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

The individual with the highest responsibility regarding climate change is Vince Pangrazio who is the Executive Vice President General Counsel. He reports to the CEO and is a member of Cavium's Executive management team, which is appointed by the Board. He partners closely with the Board, CEO, CFO, and the Executive management team to form business and legal strategies for our organization. He is responsible for defining and implementing compliance requirements and workflows, general risk management, and establishing policies and processes to mitigate potential risk. As part of this, he oversees the Associate Director of Quality Assurance who is in charge of conducting the Business Continuity Analysis, the results of which are used to make decisions about mitigating climate change related risks and supporting Climate Change related opportunities. Additionally the Executive VP General Counsel is part of the Corporate Social Environmental Responsibility (CSER) steering committee. The team develops the corporate strategy for social initiatives throughout Cavium. And is comprised of the Executive VP General counsel, Associate Director Quality Assurance, and Associate General Counsel.

CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

No

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Annually	Board or individual/sub-set of the Board or committee appointed by the Board	Global	> 6 years	Our risk/opportunities management is primarily conducted as part of our Business Continuity Process.

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

How risks/opportunities are assessed at a company level: In company level, we implement Enterprise-wide Risk Management process. Our executive management is responsible for Cavium's enterprise-wide risk management processes, which include identification, and on-going monitoring of various risks, including those associated with long term strategy and business operations, regulatory and legal compliance, information technology and security and financial reporting. Our executive management and business process owners are responsible for assessing and developing mitigation plans to address risks appropriately. Key risks are discussed with Cavium's Board of Directors at regularly scheduled meetings.

How risks/opportunities are assessed at an asset level: Cavium's Business Continuity Process (BCP) is the process we employ to assess the effects of a myriad of risks/opportunities, including climate-change risks (physical, regulatory, and marketplace), on the delivery of finished products from contract manufacturers to Cavium and our customers. Business Continuity Process supports Operations area to address unforeseen natural and manmade disasters including those caused by climate change. Cavium does not own any manufacturing facilities or distribution facilities. Asset level risks to our facilities are assessed through the BCP and generally deemed to be minimal. Our BCP includes frequent risk assessment in each facility, and The only risks we found relevant such that they can cause potential interruptions to business management and sales are physical climate driven events such as flooding, power outages, telecommunications disruption, etc.

CC2.1c

How do you prioritize the risks and opportunities identified?

How we prioritize the risks and opportunities: Through our Business Continuity Process, climate change risks and opportunities are identified and prioritized by significance based on the potential financial implications, the impact on customer satisfaction and if it will affect corporate reputation.

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

i) The influence of climate change on the overall business strategy is limited to the results of Cavium's Business Continuity Process (BCP). Each supplier is surveyed annually on their business continuity strategy in case of climate change disaster including their mitigation plan; Cavium strategically distributes supplier loading to ensure that our business continues in case a factory shuts down due to climate change disasters; Cavium ensures that multiple suppliers with same capability, equipment and technology are qualified to be an alternate site in case of disasters. Cavium also performs an annual exercise by doing a mock disaster if factories are shut down due to a disaster caused by climate change. In 2016, we simulated the Malaysia assembly site was shut down due to natural disaster, where we activated the BCP team and put together action plan to bring up the alternate site in Kaoshiung, Taiwan successfully within the target timeframe. The results of BCP exercises are reported by the Associate Director Quality Assurance Manager, to the VP of Operations and General Counsel which is reported to the Board of Directors annually.

Due to climate change, Asian typhoons have become much stronger causing disaster in its path. We use data from news sources, disaster alert tool and CISCO Supplier Risk Tool to monitor and predict natural disasters. We developed a process to reach out to the affected factory site using these tools and define the response to indicate factory impact. Each factory has a designated contact / staff whose responsibility is to implement the natural disaster prevention/mitigation plan as soon as disaster warnings are received, and involves coordinating and communicating with Cavium's customer procurement contacts to notify customers of the current situation and impact to Cavium's delivery. For example, If the factory is shut down then, one of the actions is the transfer of production to an alternate site, which assures business continuity.

ii) The need for adaptation in the event of natural disasters is one aspect of climate change that has influenced the BCP and development of manufacturing alternate sites. Cavium's Business Continuity Process requires a manufacturing alternate site to the primary supplier site as a backup in case of disaster caused by climate change, natural and manmade events for every manufacturing process. Cavium's customers' influence the strategy for climate change-related actions including identifying potential impact and risks from physical climate change to logistics of getting Cavium's products through the manufacturing supply chain to delivery of finished products.

iii) Cavium's short-term business strategy has been influenced by different climate change aspects through changes in operations and changes in how sustainability is communicated. Outbound logistics is a value chain component, and is affected by physical climate change risks such as flooding, etc. Mitigating the impacts of product delivery interruption requires changes in operational procedure such as having facilities in variety of regions including China, India, Singapore, Japan, U.S.A, etc. so Cavium has back-up facilities to supply and deliver products. Cavium adheres to the Corporate Social and Environmental Responsibility Policy, and is taking a step further by disclosing information, which includes reporting carbon inventories and climate change management to CDP and EICC (Electronics Industry Citizens Coalition) annually since 2012; and developing a corporate Sustainable Management System that includes collecting data and information from all of our corporate activities, our supply chain, and identifying potential emission reduction targets, and social responsibility.

iv) Cavium's long-term business strategy has been influenced by climate change to be more focused on: continuously improving energy efficiency during manufacturing OCTEON and Thunder to reduce emissions. We started looking into how to improve our operational efficiency in order to adapt with any physical climate change impacts. Our long-term strategy involves working on improving other value chain components in the long-term, and working with building owners of Cavium's leased buildings and facilities managers to continuously identify energy savings opportunities at each site. We also work with our supply chain to continuously improve transport, packaging and manufacturing to reduce emissions. Cavium's procurement strategy is to always find a localized source to reduce transport associated with raw materials and product delivery. We also work with our supply chain to continuously improve transport, packaging, and manufacturing to reduce emissions.

v) Demonstrating a commitment to climate change mitigation and disclosing our greenhouse gas emissions gives Cavium a competitive advantage over our competitors that prioritize issues like climate change-related risks, corporate social responsibility and low power-high efficiency products. Disclosing to CDP and planning for climate change impacts from physical and regulatory risks has strengthened our relationships with our customers and our reputation, and existing and potential customers have more confidence in buying and investing in Cavium products. Cavium's proactive approach has given us a strategic advantage to meet and exceed the requirements of our existing and future customers, compared to our competitors that have not done so.

vi) The most substantial business decisions: During the reporting year Cavium continued the work on consolidating buildings in India, China, Japan, and Korea. Cavium is also continuing to use contract manufacturers located in Taiwan and Malaysia and have recently enabled these contract manufacturers to ship directly to Cavium's customers instead of shipping the products to Cavium's San Jose headquarters then shipping to customers worldwide, thereby continuing to reduce emissions associated with the product distribution process. Cavium continues to improve on its sustainable management system by hiring additional consultants to assist with GHG emissions inventories, as well as other sustainability issues. Cavium continues to develop corporate strategies for social and environmental initiatives throughout the company, and continues to develop individual initiatives as well as a global strategy, which when finished, will include corporate environmental activities, supply chain initiatives, carbon management and reporting, and social responsibility under an umbrella program.

vii) Cavium has ongoing and future emissions reductions projects, such as installing LEDs and new cooling towers in San Jose office which help Cavium reduce GHG emissions. Cavium is evaluating the feasibilities of launching emissions reductions activities in different offices, and we aim to set both short-term and long-term target in the next few years covering at least 80% of Scope 1 and 2 and some Scope 3 emissions.

CC2.2c

Does your company use an internal price on carbon?

No, and we currently don't anticipate doing so in the next 2 years

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Trade associations
Other

CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

No

CC2.3e

Please provide details of the other engagement activities that you undertake

i) Method of engagement: Cavium reports to the Electronic Industry Citizenship Coalition (EICC) supplier modules on an annual basis. Cavium became a member of IPC, an association connecting electronics industries and American Society Quality (ASQ) a global industry knowledge network that links the best ideas, tools, and experts. ASQ has the reputation and reach to bring together the diverse quality champions who are transforming our world.

Our engagement in these organizations include attending conferences and meetings. Some of the points we discuss in order to reduce GHG emissions includes packing materials (i.e. materials used, amount of materials used), shipping methods, energy efficiency of manufacturing and energy efficiency of products.

ii) Topic of engagement: EICC is an organization whose responsibility is to assist companies collect information on their corporate activities and their supply chain activities. EICC environmental platform allows Cavium and its suppliers to share their initiatives including corporate and social responsibility metrics as well as environmental metrics with its valued customers. IPC often works with the EPA to address environmental issues associated with the manufacturing of electronics products. ASQ is a quality organization that believes that quality is inherently tied to social responsibility. ASQ was selected by the American National Standards Institute (ANSI) to administer and develop the U.S. position on a new international social responsibility standard.

iii) Nature of engagement: Cavium is a member of the EICC and completes the annual supplier reports on corporate social and environmental compliance and initiatives. EICC platform allows Cavium to review and influence its top tier supply chain to comply to submitting annual reports on corporate social and environmental compliance and activities related to climate change. Cavium is also a member of the IPC and ASQ which provide integral connections and information on industry related initiatives related to corporate social and environmental activities especially climate change impact.

iv) Actions being advocated: EICC acts as an association in that it works with regulatory agencies to better inform its members about required and voluntary reporting requirements and provide advice to regulators on industry concerns about existing or developing regulations. IPC often works with the EPA to address environmental issues associated with the manufacturing of electronics products. ASQ is working to improve environmental and social practices of companies by providing a forum for community of people passionate about quality who make our world work better. Cavium supports these actions through our engagement as a member company of the EICC, IPC and ASQ

CC2.3f

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?

EICC, IPC, ASQ, EU and EPA direction on climate change, especially those related to strategies and its impact to Cavium, are monitored by the company. Policy changes and updates from the information gathered in the monitoring process as well as impact on any programs or initiatives that could cause changes in policy direction are reviewed to ensure that Cavium's strategy and response is aligned with the business model. Initiatives, activities or programs due to changes in the direction is reported to the Executive Management, usually by the Associate Director of Quality Assurance. This process makes any changes or updates consistent with overall climate change strategy. For instance, our E-waste management project follows Solid Waste Environmental Regulations. Activities related to the project are coordinated with EICC, IPC, ASQ, EU and EPA to determine if there are regulatory updates that might have an impact on our alignment with the strategy. The process of engaging with identified organizations and our Quality Assurance team ensures consistency of our activities with the over-all climate change policy.

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction or renewable energy consumption or production target that was active (ongoing or reached completion) in the reporting year?

No

CC3.1f

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

i) Why not: Cavium has not yet set targets as it has not had the necessary information on GHG emissions to determine appropriate corporate wide targets. In 2013, Cavium collected initial data on Scope 1 and 2 GHG emissions. We have also now collected emissions data for 2014 and 2015. Scope 3 GHG emissions are being collected annually and will be used similarly to determine if corporate wide targets are feasible.

ii) Forecast how Cavium's emissions will change over the next five years: Cavium's forecasts that our Scope 1 and Scope 2 GHG emissions for corporate assets will not vary more than +/-5% in intensity over the next five years since we only occupy leased commercial office buildings where we have limited influence on building management. The addition of employees will likely be correlated with additional office space to maintain a similar emissions intensity. In addition, Ssince Cavium is consolidating offices globally (and with the addition of QLogic), and expanding office space in the US for additional employees, we believe our intensity figures will remain similar, although our overall emissions in the US may increase while decreasing in other geographies. Also, Cavium does not own or operate any manufacturing facilities. All manufacturing is through contract manufacturers. Cavium believes it can lower its Score 3 GHG emissions as much as 5-10% over the next 5 years by working with our suppliers. In other words, Cavium has plans to set targets in the next five years.

CC3.2

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

CC3.2a

Please 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	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Product	Cavium processeors (e.g., OCTEON processor). Cavium's products are specifically designed to last longer and require less energy per use. For example, we have developed our latest products to have high capacity while using 50% less energy when compared to current products made by our competitors or compared to our previous generation of products. This allows our customers to incorporate Cavium's products into their own products, making their products more energy efficient. This allows our customers to provide retail customer end-products that reduce energy use and in turn reduce associated Scope 2 GHG emissions.	Avoided emissions	Other: Internal calculations			The avoid emissions have been calculated separately, but are not included in the GHG emissions inventory. Because these calculations are not part of an accepted protocol, they are use for internal purposes only.

CC3.3
Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)

Yes

CC3.3a
Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	2	0
Implementation commenced*	0	0
Implemented*	2	21
Not to be implemented	0	0

CC3.3b
For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
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Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Energy efficiency: Building services	In compliance with California Title 24 Energy Efficiency Standards for Residential and Nonresidential Buildings, Cavium replaced fluorescent lighting with high-efficiency LED lighting with motion shut-off in the 3rd floor of the 4 floor San Jose office to save energy. As LEDs have higher energy efficiency than traditional lighting system, Cavium is able to reduce electricity consumption and GHG emissions year over year.	21	Scope 2 (location-based)	Mandatory	20391	70000	1-3 years	Ongoing	The initial investment, energy savings, and maintenance savings for this project was estimated using the manufacturer's lighting efficiency calculator. The GHG emissions savings were calculated by multiplying the kWh savings by the California WECC eGRID2014 emission factor, which is the same emission factor used in the GHG inventory.

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Financial optimization calculations	Most of Cavium's initiatives are driven by improving efficiency which results in cost savings for both Cavium and our clients. On top of cost savings, improving efficiency also reduces emissions.

Further Information**Page: CC4. Communication****CC4.1**

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	Status	Page/Section reference	Attach the document	Comment
In voluntary communications	Complete	All Pages	https://www.cdp.net/sites/2017/78/37878/SupplyChain2017/SharedDocuments/Attachments/CC4.1/EICC_Cavium_Env_Data-13072016-6.pdf	Cavium includes annual CDP survey score results on our Corporate In addition to EICC. Cavium posts its CDP survey score results on our Corporate Social Responsibility page at www.Cavium.com .
In voluntary communications	Complete	All Pages	https://www.cdp.net/sites/2017/78/37878/SupplyChain2017/SharedDocuments/Attachments/CC4.1/EICC_Environmental_Reporting_(2015)_6-2016.pdf	Cavium includes annual CDP survey score results on our Corporate In addition to EICC. Cavium posts its CDP survey score results on our Corporate Social Responsibility page at www.Cavium.com .

Further Information**Module: Risks and Opportunities**

Page: CC5. Climate Change Risks

CC5.1
Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

- Risks driven by changes in regulation
- Risks driven by changes in physical climate parameters
- Risks driven by changes in other climate-related developments

CC5.1a
Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Uncertainty surrounding new regulation	Cavium, a semi-conductor company which uses electronic materials in their operations, is in strict compliance with environmental and climate change-related regulations, such as EU-RoHS/REACH regulations, OECD regulations. Stringent implementation of these regulations in SouthEast Asia and European where Cavium suppliers are located, may present financial risks to Cavium. Because In order to comply with new environmental regulations and reporting or GHG emissions regulations in SouthEast Asia and European, Cavium and its contract manufacturers may need to invest in re-qualification of products meeting new environmental requirements and additional staff or consultants to support new regulations, and to sustain monitoring and reporting of pollution-control measures and reporting. The additional costs associated with these investments may subsequently increase the cost of production, or may require that Cavium find	Increased operational cost	1 to 3 years	Indirect (Supply chain)	Likely	Medium-high	The potential financial implications of risk: If a new contract manufacturer needs to be selected, the cost for a new supplier qualification process for a new contract manufacturer is approximately 0.005% of Cavium's net revenue. This involves extensive reliability qualification testing of the new contract manufacturer processes including material set used.	Supplier Engagement is the primary management approach, as this requires us to conduct supplier surveys, work on EICC standards with our suppliers and perform energy efficiency analysis. Cavium's Strategic Supplier Engagement is integrated in our Business Continuity Plan (BCP). Through various programs, Cavium works with members of its supply chain to ensure high operational yields are maintained and thus low emissions per product. For example, a supplier survey is performed including review of environmental programs and certifications before we begin work with a new contract manufacturer. Cavium performs thorough energy efficiency analysis and qualification of suppliers' operations to ensure compliance with Cavium's efficiency and reliability standards and	The costs associated with these actions: The annual costs of managing the Business Continuity Assessment varies between 0.001-0.005% of Cavium's total operating expenses.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	alternative contract manufacturers which may be costly.							other regulations such as EU-RoHS/REACH or OECD. Cavium continues to work on meeting EICC standards which require further engagement with suppliers. As a result, Cavium helps its suppliers prepare for new reporting or emissions reduction regulations including any qualification of new processes or materials. New acceptable materials will need to be used in manufacturing Cavium's products for qualification process. Samples need to be built and subjected to extensive reliability qualifications. Cavium engineers will work with customers to accept the new materials by providing reliability qualification reports prior to implementation and release of the product with new accepted materials.	

CC5.1b

Please describe your inherent risks that are driven by changes in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation extremes and droughts	As a provider of semiconductor processors, Cavium's business depends on successful deliveries of supplies to our contract manufacturers and products to our customers, and we have	Reduction/disruption in production capacity	1 to 3 years	Indirect (Supply chain)	Likely	High	The potential financial implication of the risk: If a disaster were to occur and cease production or prevent deliveries at any particular manufacturing step, Cavium has estimated that 8.7% of revenue could	To manage this risk, Cavium has established a disaster response plan with each of our suppliers which includes prioritized recovery actions, communication processes, and reallocation of resources. This process is based on quarterly	The costs associated with these actions: The annual costs of managing the Business Continuity Assessment varies between 0.001 to 0.005% of Cavium's total operating expenses. If a

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>business worldwide. Extreme weather events such as floods, tornadoes, tsunamis, and hurricanes directly interrupt the delivery and production process by damaging facilities, preventing deliveries, and/or causing power/ telephone failures, to name a few. One particular example is typhoon situation in Taiwan. If the frequency of these weather disasters continues to increase, it may result in disruption of delivery of Cavium raw materials, such as Silicon Wafer substrates, to suppliers or shipment of finished products to customers and therefore pose a negative impact on Cavium's revenue.</p>						<p>potentially be lost per supply line or supplier.</p>	<p>business continuity analysis to evaluate and mitigate potential risks that may cause disruption to product delivery throughout the value chain. Annual business continuity evaluation requires that all Tier 1 suppliers report a BCP in which potential risks and measures are identified. An example of actual disaster action/notification was triggered in September 2016 during the occurrence of "Super Typhoon Meranti" south of Taipei, Taiwan, possibly impacting a couple suppliers located around the super typhoon path. Cavium monitors disaster predictions/alerts from major news networks and through a subscription to "Pacific Disaster Alert" online tool. Upon receiving this alert, the BCP team is activated and assesses the situation. Communication is initiated to potential affected suppliers for a timely update on their disaster plan and situation updates. As part of any real emergency, Cavium officially notifies its customers as well as periodic and final updates as needed. In case a disaster hits. Cavium has created a matrix of alternative manufacturers for each of our current contract manufacturers to which supplies can be reallocated if a disruption were to occur,</p>	<p>disaster occurs and an alternate contract manufacturer needs to be utilized, the cost of qualifying the alternate manufacturer is approximately 0.005% of Cavium's net revenue.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								ensuring minimal impact to Cavium's product delivery and customer schedules.	

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Changing consumer behavior	More consumers of semiconductors are looking to support brands with strong environmental credentials. Many of Cavium's largest customers from US, Taiwan and Hong Kong, who integrate Cavium components such as OCTEONs and Thunders into their products, are requesting that Cavium report emissions information and climate change strategies as part of their own Corporate Social and Environmental program. There is a potential risk in the loss of current and future business if Cavium does not meet their standards.	Reduced demand for goods/services	3 to 6 years	Direct	Likely	Medium-high	The potential financial implication of the risk: The companies that have already expressed interest in Cavium's environmental practices represent a substantial % of Cavium's customer business. If our business continuity recovery process is not satisfactorily implemented, it is possible for some of our customers may reduce their orders or even go to our competitor if their project is at initial design stage which means that there is high probability that Cavium might lose specific customer business opportunity. One typical example selected shows if Cavium were to lose a particular customer business, potential revenue cost would be around 8.7% of Cavium gross revenue.	The methods Cavium is using to manage risk: To meet the requests of current customers Cavium has begun reporting our emissions and climate change strategies to third-party such as ECOVADIS, EICC, CDP and other customer-requested Sustainability reporting efforts. There is a pressure from customers of semiconductor manufacturers to comply with these requirements as this is strongly linked to customer preference and product demand. In addition, supplier's sustainability performance is discussed within industry group, and any non-compliance with customer sustainability requirement is shared with the customers.. Development of Cavium's Sustainability Management Program is on-going, and this includes a full CSR that will be available to potential new customers via Cavium's website. Sustainability	The costs associated with these actions: Cavium invested approximately \$50,000 USD in these programs during the reporting year.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								Management Team was also in place to ensure regulatory compliance. For instance, Diesel-fuel powered back-up generators are assessed for any non-compliance (i.e. engine combustion issues, Diesel leak, etc.) that could have an impact on the equipment's license to operate. These actions are further improving Cavium's environmental credentials.	

Further Information

Page: CC6. Climate Change Opportunities

CC6.1
Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

- Opportunities driven by changes in regulation
- Opportunities driven by changes in physical climate parameters
- Opportunities driven by changes in other climate-related developments

CC6.1a
Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
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Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other regulatory drivers	Cavium has the opportunity to reduce operational cost by optimizing packaging and saving fuel consumption. Part of Cavium's business is delivering supplies to our contract manufacturers and products to our customers, As a result, Cavium consumes a great amount of fossil fuel every year. Increase in fuel/energy taxes in East Asia, Europe and other regions where Cavium has the business, will impact the shipping cost of Cavium materials/products through the manufacturing supply chain. Reducing fuel consumption allows Cavium to have minimum impacts from such regulations and therefore save operational cost.	Reduced operational costs	1 to 3 years	Indirect (Supply chain)	More likely than not	Low-medium	With the increase in fossil fuel consumption and an impending change in tax regulations, Cavium's opportunity to re-strategize their logistics plan to anticipate any regulatory changes that has an impact to their fossil fuel consumption would positively affect their sales/ revenue estimated at 10%. This is due to a reduced operational cost from decreased consumption of fossil fuel (i.e. Diesel/ Gasoline in transporting products).	Implementing action plans focused on achieving high efficiency operation in order to minimize shipment cost is Cavium's over-all approach in ensuring that this opportunity is realized. Initiatives such as Packaging Optimization and Shipping by bulk of OCTEON and Thunder products are implemented to gain benefits of this opportunity. For example, we have added a small shipment box for customers that order small quantity instead of using a medium or large box like we used to eliminating unnecessary packaging and reducing the footprint of the box therefore maximizing the cargo space per shipment, Cavium's shipping carrier of choice have implemented GHG reduction program by switching to hybrid or fully electric vehicles to deliver the packages.	The cost of managing this opportunity is still under evaluation.

CC6.1b

Please describe your inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation pattern	As an international company,	Increased demand for	1 to 3 years	Direct	Likely	Medium	Cavium's ability to ensure	To manage the opportunity,	There are no additional costs

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>extreme weather events throughout the world can interrupt manufacturing companies like Cavium by interrupting ground and air deliveries and damaging manufacturing facilities. However, opportunities exist for companies, such as Cavium, with a variety of manufacturing sites in North America, China, India, Singapore, etc, and extensive plans that minimize revenue loss by ensuring that production continues. It may also help Cavium attract more business because customers are facing less chance of delivery failure of semiconductors as Cavium is able to manufacture and deliver products from alternative facilities when severe weather occurs.</p>	<p>existing products/services</p>					<p>continued product delivery because of its mature Business Continuity Process attracts potential customers to partner with Cavium. These opportunities are estimated to increase Cavium's annual revenue by 10-15 %.</p>	<p>Cavium has created an extensive Business Continuity Process (BCP). Using the BCP, Cavium generates risks and mitigation plans such as using alternative facilities to manufacturing and delivery of products to customers are least interrupted because of disasters such as earthquakes, typhoons etc. Advantages of having an alternative facility gives customers assurance of continued supply allowing Cavium the opportunity to become the sole source of semiconductor products for our customers. Thus, this would increase the demand for Cavium's products. For instance, Cavium's contingency plan in case of disasters include qualifying other supplier facilities in strategic locations in Asia. This is because Asian typhoons have become much stronger causing disaster in its path. Cavium's Business Continuity strategy is to identify alternate manufacturing site for every primary manufacturer with the same process capability, i.e.</p>	<p>associated with the contract manufacturers because it is part of Cavium's overall business strategy. The annual costs of managing the Business Continuity Process (BCP) varies between 0.0001 to 0.0004% of Cavium's total operating expenses.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								primary assembly manufacturing supplier for flip chip products is ASE located in Kaoshiung, Taiwan, the qualified alternate manufacturing supplier is ASE Chuong Li, Taiwan. When severe typhoon occurs, the alternate manufacturing supplier is activated in case the primary manufacturing supplier is impacted by the disaster. This ensures minimal interruption in the supply chain operations. The BCP also includes disaster response plans with associated estimated recovery time frames for each of the manufacturing step.	

CC6.1c

Please describe your inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
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Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Changing consumer behavior	More and more customers are looking for more high capacity microprocessors and energy efficient products. Cavium continues to develop products that require less energy for the same amount of processing ability, such as Cavium's OCTEON(TM) processor, which has low power consumption which enables high performance in challenging form-factors. As this trend increases, demand for Cavium's products will also increase.	Increased production capacity	1 to 3 years	Direct	Likely	Medium	Potential financial implications: Cavium has predicted a 50% increase in revenue growth for 2017 due to the acquisition of QLogic, thereby increasing Cavium's product offerings.	The methods used to manage this opportunity: Cavium's Marketing and development team comes up with new product solutions for the industry that are high power and capability that are energy efficient helping our customers reducing energy consumption and in the end saving money for the end user. For example, optimizing product design methodology to achieve high functionality our chip products thereby minimize energy consumption. For example, Cavium's engineers are very aggressive in developing design methodologies on new processors to achieve high functionality microprocessors that is even more energy efficient than the previous version of OCTEON(TM).	Costs of these actions: the development of these new products accounts for approximately 90% of Cavium's R&D expenses.

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Sun 01 Jan 2012 - Mon 31 Dec 2012	378.48
Scope 2 (location-based)	Sun 01 Jan 2012 - Mon 31 Dec 2012	1974.19
Scope 2 (market-based)		

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fifth Assessment Report (AR5 - 100 year)
CH4	IPCC Fifth Assessment Report (AR5 - 100 year)
N2O	IPCC Fifth Assessment Report (AR5 - 100 year)

CC7.4
Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
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Further Information

These emission factors are for CC7.4

Attachments

https://www.cdp.net/sites/2017/78/37878/Supply_Chain_2017/Shared_Documents/Attachments/SupplyChain2017/CC7.EmissionsMethodology/Cavium-QLLogic_Emission_Factors_-_Scope_1_and_2.xlsx

Page: **CC8. Emissions Data - (1 Jan 2016 - 31 Dec 2016)**

CC8.1
Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Operational control

CC8.2
Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e

1529

CC8.3
Please describe your approach to reporting Scope 2 emissions

Scope 2, location-based	Scope 2, market-based	Comment
We are reporting a Scope 2, location-based figure	We have operations where we are able to access electricity supplier emissions factors or residual emissions factors, but are unable to report a Scope 2, market-based figure	

CC8.3a
Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
12298		

CC8.4
Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

CC8.4a
Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
Emissions associated with refrigerant in buildings (Cavium)	Emissions are not relevant	No emissions excluded	No emissions excluded	All Cavium offices are leased, many of them are a small amount of space compared to the entire building. As a result, Cavium does not have access to this information from landlords, and does not have sufficient leverage with landlords to obtain this information. It is estimated that the emissions from refrigerants across the various Cavium offices is de minimus and therefore will not significantly affect Cavium's overall calculations of GHG emissions globally. Emissions associated with refrigerants in buildings have been quantified from some QLogic offices.

CC8.5
Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 2% but less than or equal to 5%	Assumptions Extrapolation	Natural gas usage was not collected for 3 QLogic locations and estimates were determined based on square footage. As a result, about 3% of the total Scope 1 emission sources were estimated, The actual usage and emissions value is uncertain.
Scope 2 (location-based)	More than 5% but less than or equal to 10%	Assumptions Extrapolation	Electricity usage was not collected for 3 QLogic locations and estimates were determined based on square footage. As a result, about 8% of the total Scope 2 emission sources were estimated, The actual usage and emissions value is uncertain.
Scope 2 (market-based)			

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

No third party verification or assurance

CC8.7

Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

No third party verification or assurance

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
No additional data verified	

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
India	900
United States of America	614
China	0
Ireland	15
Israel	0
Singapore	0
Taiwan	0

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By facility

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Cavium Hyderabad	10	17.458910	78.353246
Cavium San Jose	326	37.379572	-121.924154
Cavium Marlborough	78	42.334287	-71.596306
Cavium Shanghai	0	31.238965	121.509644
Cavium Beijing	0	39.975952	116.349016

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Cavium Bangalore	0	12.965296	77.643567
Cavium Singapore	0	1.389479	103.849164
Cavium Taipei	0	25.080164	121.566977
Cavium HsinChu	0	24.779067	121.020691
QLogic Pune	890	18.552910	73.892992
QLogic Dublin	15	53.412081	-6.366707
QLogic San Jose	18	37.391594	-121.925910
QLogic Roseville	16	38.772077	-121.259361
QLogic Minnetonka	7	44.897412	-93.441494
QLogic Aliso Viejo	170	33.575428	-117.729370
QLogic Ramat Gan	0	32.082130	34.800785

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes 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)
China	37		48	
India	4589		5361	
United States of America	6984		26500	
Taiwan	110		143	
Singapore	18		36	
Israel	502		690	
Ireland	58		137	

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By facility

CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Cavium Hyderabad	780	
Cavium San Jose	1507	
Cavium Marlborough	402	
Cavium Shanghai	4	
Cavium Beijing	33	
Cavium Bangalore	674	
Cavium Singapore	18	
Cavium Taipei	26	
Cavium Hsinchu	84	
QLogic Pune	3135	
QLogic Dublin	58	
QLogic San Jose	226	
QLogic Roseville	224	
QLogic Minnetonka	206	
QLogic Aliso Viejo	4419	
QLogic Ramat Gan	502	

Further Information

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

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

CC11.2

Please state how much heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Heat	0
Steam	0
Cooling	0

CC11.3

Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

4780

CC11.3a

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Diesel/Gas oil	1362
Natural gas	3418

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the market-based Scope 2 figure reported in CC8.3a

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Emissions factor (in units of metric tonnes CO2e per MWh)	Comment
No purchases or generation of low carbon electricity, heat, steam or cooling accounted with a low carbon emissions factor			

CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
32917	32917	0	0	0	

Further Information

Page: CC12. Emissions Performance

CC12.1

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

Increased

CC12.1a

Please 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

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	1	Decrease	Lighting retrofits in the San Jose and Massachusetts offices in 2016 resulted in emission reductions in Scope 2 emissions. Other retrofits occurred in other offices; however, that information and the exact kWh and emissions savings could not be determined this year. In future years, Cavium will track more of the office retrofits to account for additional emission reductions in this section.
Divestment			
Acquisitions	71	Increase	In 2016, Cavium acquired QLogic and the reporting boundary shifted from just Cavium offices to include 8 additional QLogic offices QLogic offices makes up 71% of the total Scope 1 and Scope 2 emissions. These offices were not accounted for in 2015.
Mergers			
Change in output			
Change in methodology			
Change in boundary			

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Change in physical operating conditions			
Unidentified			
Other			

CC12.1b

Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.000023	metric tonnes CO2e	603310000	Location-based	129	Increase	In 2016, Cavium acquired QLogic which impacted the total revenue and output/sales for the company. The revenue figure is for Cavium whereas the emissions figure is for Cavium/QLogic. In future years, both the numerator and denominator will include Cavium and QLogic activities. Therefore, future years will likely see a decrease in this intensity number, especially as Cavium/QLogic consolidate employees into more efficiency buildings and generate additional revenue from the acquisition.

CC12.3

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
7.55	metric tonnes CO2e	full time equivalent (FTE) employee	1831	Location-based	94	Increase	The total number of employees increased and QLogic was also acquired in 2016. This added a substantial amount of Scope 1 and Scope 2 emissions as result of QLogic facilities. The additional of facilities was in greater proportion than the number of QLogic employees, and therefore the intensity figure has increased.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

No, and we do not currently anticipate doing so in the next 2 years

CC13.2

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

No

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, not yet calculated				Have not yet been able to collect the data from suppliers needed to make this estimate.
Capital goods	Relevant, not yet calculated				Cavium does not own any offices or manufacturing sites. As a result, all manufacturing is done by third party companies. Few if any capital goods apply.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not relevant, explanation provided				Cavium does not participate in any fuel or emissions activities outside those included in Scope 1 and Scope 2.
Upstream transportation and distribution	Relevant, not yet calculated				Cavium does not control any upstream activities, since all manufactured products are made by 3rd party companies. The contract manufacturers control all upstream operations, transportation, and distribution.
Waste generated in operations	Relevant, not yet calculated				Cavium only has minimal office waste, and most is recycled. There are also some electronic wastes, but 100% are recycled through an e-waste program.
Business travel	Relevant, calculated	6831	We used corporate travel data provided on air travel and used Greenhouse Gas Protocol Scope 3 Evaluator (aka Quantis). This number is estimated using spend method, and include air travels and rental cars.	0.00%	These emissions include corporate airfare and car expenses.
Employee commuting	Relevant, calculated	4347	Employee commute was estimated using an employee list with home and office locations. The distance between home and office was determined and annual miles traveled were estimated based on employee hire dates. This assumes employees worked 240 days per year at 100% employment for the year and made a single trip to work and a single trip home from work. An average fuel economy of 21.4 MPG was assumed and EPA Center for Climate Leadership emission factor was used.	0.00%	
Upstream leased assets	Not relevant, explanation provided				There are no upstream leased assets that are not part of Cavium's Scope 1 and Scope 2 calculations.
Downstream transportation and distribution	Relevant, calculated	12556	Cavium was able to obtain all of their shipping records for Cavium and QLogic in 2016. The shipping records included the location of the Cavium/QLogic warehouse (i.e., origin), the shipping location (i.e., destination), and the weight of the shipment. These parameters were used to calculate shipping emissions using emission factors from USEPA's Emission Factors For Greenhouse Gas Inventories (Table 8), which provides emission factors for transportation type in units of GHGs per ton-mile. The total distance traveled by each package was calculated using the Latitude and Longitude of the origin and destinations.	100.00%	For this year's GHG inventory, this method was used rather than obtaining information from UPS and FedEx, which might miss some shipments and is not as transparent with their GHG calculations. Using this method, all shipments will be more accurately captured along with their origin/destinations and weights. This method will be used for all Product Shipment Scope 3 emissions for future inventories.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Processing of sold products	Relevant, calculated	1592	Cavium and QLogic's boards and ICs must pass through a welding machine before they can be installed. This process uses approximately 0.0048 kwh per board and 0.000016 kwh per IC. These factors were multiplied by the total number of boards and ICs shipped during the reporting year. Emissions were then allocated to different regions where there products were processed using regional electricity emission factors.	100.00%	This calculation uses the same data set used for the "Downstream transportation and distribution" Scope 3 emissions. Therefore, this ensures a consistent and accurate representation of activities from Cavium and QLogic.
Use of sold products	Relevant, calculated	446352	Cavium's OCTEON (TM) processor uses 7 watts of power and Thunder uses 15 watts. QLogic's boards and ICs use a similar amount of power. Assuming the processor is used 24 hours a day for 365 days per year (which may be a slight overestimate), we calculated GHGs using the GHG Protocol tools for energy/electricity use for one processor over a one year time frame. This was then multiplied by the number of products sold to get final values for the reporting year. The total electricity consumption associated with powering all of Cavium/QLogic's sold products throughout the year was multiplied by an International Energy Agency (IEA) average emission factor. Although the shipment destination for all of the products is known, the IEA average was used because products may be shipped to other locations by the 3rd party distributor.	100.00%	This calculation uses the same data set used for the "Downstream transportation and distribution" Scope 3 emissions. Therefore, this ensures a consistent and accurate representation of activities from Cavium and QLogic.
End of life treatment of sold products	Relevant, not yet calculated				
Downstream leased assets	Not relevant, explanation provided				Cavium has no leased downstream assets.
Franchises	Not relevant, explanation provided				Cavium is not a retailer and does not have franchises.
Investments	Not relevant, explanation provided				Cavium is not a financial company and does not have "investments," but rather has employees that help develop our products.
Other (upstream)					
Other (downstream)					

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

No third party verification or assurance

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Business travel	Change in boundary	369	Increase	In 2016, Cavium acquired QLogic and the reporting boundary shifted from just Cavium offices to include 8 additional QLogic offices. Last year, Business Travel covered only Cavium's specific products, but the combined emissions for Cavium and QLogic were quantified for 2016. In addition, Business Travel estimations have been limited to spend data from airfare and car rentals. This does not include personal vehicle mileage.

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Use of sold products	Change in boundary	77	Increase	In 2016, Cavium acquired QLogic and the reporting boundary shifted from just Cavium offices to include 8 additional QLogic offices. Last year, Use of Sold Products covered only Cavium's specific products, but the combined emissions for Cavium and QLogic were quantified for 2016.
Processing of sold products	Change in boundary	123	Increase	In 2016, Cavium acquired QLogic and the reporting boundary shifted from just Cavium offices to include 8 additional QLogic offices. Last year, Processing of Sold Products covered only Cavium's specific products, but the combined emissions for Cavium and QLogic were quantified for 2016.
Downstream transportation and distribution	Change in boundary	999	Increase	In 2016, Cavium acquired QLogic and the reporting boundary shifted from just Cavium offices to include 8 additional QLogic offices. Last year, Downstream Transportation and Distribution (i.e. product shipping) covered only Cavium's specific products, but the combined emissions for Cavium and QLogic were quantified for 2016. In addition, this year's data set for shipments was obtained from an internal database, which is more likely to cover all of the shipments regardless of the courier used. It is likely that this more accurate data set includes more data than captured last year from UPS and FedEx reports.

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

- Yes, our suppliers
- Yes, our customers

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

i) The methods used to engage with the value chain: We engage with our customers via Electronic Industry Citizenship Coalition (EICC). EICC is an organization whose responsibility is to assist companies collect information on their corporate activities and their supply chain activities. EICC environmental platform allows Cavium and its suppliers to share their initiatives including corporate and social responsibility metrics as well as environmental metrics with its valued customers. This involves discussion of Cavium's extensive compliance program aimed to meet various US and global regulations to minimize impact to the environment and climate change. The following are some of the regulations and legislation that Cavium compliance program is based upon: Dodd-Frank Conflict Minerals Legislation; European Union Directives: on waste electrical and electronic equipment (WEEE Directive), on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive) and on improving the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances by the four processes of REACH, namely the registration, evaluation, authorization and restriction of chemicals. Another effort as part of this program to reduce waste and minimize negative impact to the environment and climate change is the responsible scrapping of Cavium non-useable products and electronic equipment. Scrap materials are disposed of through certified contractors that participate in responsible recycling program. This ensures that Cavium's scrapped proprietary products are responsibly scrapped and any precious metals reclaimed for reimbursed back to Cavium. This program includes all Cavium discarded or scrapped products and non-useable electronic office equipment, i.e. computers, cables, monitors, etc. and ensures that they are responsibly disposed of in compliance to local laws and regulations. Part of Cavium's overall business strategy is to perform quarterly reviews of its production and distribution processes to determine opportunities for efficiency improvements and reductions in emissions.

ii) The strategy for prioritizing engagement and how success is measured: Cavium defines successful engagement with customers and other members of the value chain by the Turn Around Time in the delivery of products in risk prone areas and customer satisfaction for products which are compliant with regulations and achieved highest standards of product quality. If customers are located in a risk-prone area wherein outbound logistics is an issue, then we conduct Business Continuity Trainings/ orientation for them. Similarly, we also include product safety and quality in the prioritization process in our engagement with customers and other members of the value chain. Engagement with customers who are not familiar with laws and regulations such as REACH are being prioritized in terms of product Safety orientation and walk through. We define our success measures by the Turn Around Time in the delivery of products in risk prone areas and customer satisfaction for products which are compliant with regulations and achieved highest standards of product quality. Successful product qualification allows Cavium to produce a more environmentally/green product for shipment to our customers.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Type of engagement	Number of suppliers	% of total spend (direct and indirect)	Impact of engagement
Compliance	30	100%	We engaged these suppliers in processing IC and boards. Suppliers are required to utilize RoHS-REACH compliant materials. Success means that Cavium's product passes the material compliance evaluation test, i.e. Thunder product passing RoHS-REACH compliance certification. . "For example, in 2016, all of our tier 1 suppliers achieved ROHS or REACH compliance, where components are produced with chemicals that are below set thresholds according to ROHS-REACH standards. By complying with these standards, Cavium's suppliers are producing components that are actively reducing their GHG emissions by minimizing the release of harmful material into the environment.

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Raghib Hussain	Chief Operating Officer	Chief Financial Officer (CFO)

Further Information**Module: SupplyChain****Page: SM0. Supply Chain Module - Introduction****SM0.0**

If you would like to do so, please take this opportunity to provide a separate introduction to this module

This is only the third year Cavium is estimating our carbon emissions. We are primarily focused on reporting Scope 1+2 emissions; however, we have also reported on a limited set of Scope 3 emissions. We have not yet estimated the GHGs associated with our product life cycles. This is primarily due to the fact that Cavium uses contract manufacturers for all production, so it takes additional effort and planning to collect and calculate the emissions resulting from the manufacturing of our product. We are currently in the process of developing a Sustainability Management Program which will include plans for collecting and reporting on our Scope 3 emissions in the future.

SM0.1

Please could you indicate your company's annual revenue for the stated reporting period?

Annual Revenue	Currency
----------------	----------

SM0.2

Do you have an ISIN for your company that you would be willing to share with CDP?

No

Further Information**Page: SM1. Supply Chain - Allocation A****SM1.1**

Please allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period

Please note that this table (for SM1.1) is designed so that only the customer that you select in column 1 ("Please select the requesting member(s)") will be able to see the data relevant to them. If you enter an answer without selecting a requesting member, your answer will not be viewable at all.

Please select the requesting member(s)	Scope of emissions	Emissions in metric tonnes CO2e	Uncertainty (+/- %)	Major sources of emissions	Verified	Allocation method	Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
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Further Information**Page: SM1. Supply Chain - Allocation B****SM1.2**

Where published information has been used in completing SM1.1, please provide a reference(s)

SM1.3

What are the challenges in allocating emissions to different customers and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome challenges
-----------------------	--

SM1.4

Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Further Information**Page: SM2. Supply Chain - Collaboration****SM2.1**

Please use the table below to communicate any proposals you would like to make to specific CDP supply chain members for the collaborative development of GHG emission reducing projects or products

Please do NOT include details of existing commercial offerings of which your customer will already be aware. Use this as an opportunity to think about how you can work with your customer to reduce the emissions associated with the goods and services you provide to your customer.

Please note that this table (for SM2.1) is designed so that only the customer that you select in column 1 ("Please select requesting member") will be able to see the data relevant to them. If you enter an answer without selecting a requesting member, your answer will not be viewable at all.

Please select requesting member	Type of project	Emissions reduction project or product consists of	Estimated timeframe for carbon reductions to be realized	Estimated lifetime CO2e savings	Details of proposal
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SM2.2
Have requests or initiatives by CDP supply chain members prompted your organization to take organizational-level emissions reduction initiatives?

Further Information

Page: SM3. Supply Chain - Product Introduction

SM3.1
Are you providing product level data for your organization's goods or services, if so, what functionality will you be using?

Further Information

Page: SM3. Supply Chain - Product Lifecycle Stages

Further Information

Page: SM3. Supply Chain - Product Emissions Reductions

Further Information

Page: SM4. Action Exchange

SM4.1
Do you want to enroll in the 2017-2018 CDP Action Exchange initiative?

SM4.2
Is your company a participating supplier in CDP's 2016-2017 Action Exchange initiative?

Further Information

CDP: [D][C,-][D2]