Climate Change 2017 Information Request
Massmart Holdings Ltd

Module: Introduction

Page: Introduction

CC0.1
Introduction
Please give a general description and introduction to your organization.

Massmart is a managed portfolio of four Divisions, each focused on high-volume, low-margin, low cost distribution of mainly branded consumer goods for cash, through 412 stores in 13 countries in sub-Saharan Africa. We are a South African retailer and wholesale distributor, with 373 stores in South Africa and 39 stores in other sub-Saharan Africa. In Africa we operate in Botswana, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Swaziland, Tanzania, Uganda and Zambia. However, for reporting purposes we disclose as per South Africa and Africa only.

Group brands include Game, DionWired, Makro, Fruitspot, Builders Warehouse, Builders Express, Builders Trade Depot, Builders Superstore, CBW, Cambridge Food, Jumbo Cash and Carry, Rhino and Shield. Massmart's merchandise proposition includes food, liquor, general merchandise, home improvement goods and building supplies.

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 a 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(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

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. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
South Africa
Botswana
Ghana
Kenya
Lesotho
Malawi
Mozambique
Namibia
Nigeria
Swaziland
Tanzania
Uganda
Zambia

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.

ZAR (R)

CC0.6
Modules
As part of the request for information on behalf of investors, companies in the electric utility sector, companies in the automobile and auto component manufacturing sector, companies in the oil and gas sector, companies in the information and communications technology sector (ICT) and companies in the food, beverage and tobacco sector (FBT) should complete supplementary questions in addition to the core questionnaire.
If you are in these sector groupings, the corresponding sector modules will not appear among the options of question CC0.6 but will automatically appear in the ORS navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below in CC0.6.

Further Information

We operate in Botswana, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Swaziland, Tanzania, Uganda and Zambia. However, for reporting purposes we disclose as per our market areas - South Africa and Africa (which includes all of these countries collectively) only.

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

Both the Social & Ethics Committee and the Audit & Risk Committee have a broad oversight role on matters relating to climate change.
The Social & Ethics Committee keeps the Massmart Board appraised of the Group's climate change progress and its responsibility towards sustainability with respect to practices that are consistent with good corporate citizenship.
The Audit & Risk Committee monitors climate change risks and updates relating to issues that are significant from a climate change perspective, such as energy consumption and waste reduction. These are submitted to the Audit and Risk Committee and to the extent that risks are deemed material, they are included as a priority risk on the Group risk register.
Members of the board, both executive and non-executive, sit on both the above-mentioned committees which allow for direct interaction with other committee members and ensure that issues being considered are clearly communicated to the highest levels of the Company.
Each Board Committee has a charter, or terms of reference, that is formally signed off by the Board and is reviewed annually by the Committees and Board to ensure relevance. At least one board member sits on each of the committees.

CC1.2
Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a
Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Executive officer	Recognition (non-monetary)	Emissions reduction project Energy reduction project Energy reduction target Efficiency project Efficiency target Behavior change related indicator Other: Behaviour change related indicator	Formal citation award to most Socially Responsible Division within the Massmart Group. This takes into account environmental and social initiatives and performance. Environmental performance is measured based on energy efficiency, water efficiency, logistics optimization and waste reduction initiatives.
All employees	Recognition (non-monetary)	Emissions reduction project Energy reduction project Energy reduction target Efficiency project Efficiency target Behavior change related indicator Other: Behaviour change related indicator	Key achievements in the area of environmental performance are recognised through Group media publications. These articles are made publicly available on the Massmart website and circulated to Massmart and Walmart senior management. In addition, employees are also recognised in monthly Massmart News Live meetings and quarterly in the Massmart News internal newspaper. Environmental performance is measured based on energy efficiency, water efficiency, logistics optimization and waste reduction initiatives.
All employees	Recognition (non-monetary)	Emissions reduction project Energy reduction project Energy reduction target Efficiency project Efficiency target Behavior change related indicator Other: Behaviour change related indicator	All employees that have shown exceptional performance in their work are awarded with a CEO's Citation Award. CEO Citation Awards have been awarded to staff for environmental performance based on; energy efficiency, water efficiency, logistics optimization, waste reduction and supplier advocacy initiatives.

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Other: Operations managers	Recognition (non-monetary)	Emissions reduction project Energy reduction project Energy reduction target Efficiency project Efficiency target Behavior change related indicator Other: Behaviour change related indicator	Operations managers are responsible for measuring, managing and reducing energy consumption and associated greenhouse gas emissions reduction and operations. The individuals in these functions are held accountable for progress on our greenhouse gas reduction goals and are recognised based on their performance.
Other: Suppliers	Recognition (non-monetary)	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target Behavior change related indicator Other: Behaviour change related indicator	In 2009, we launched a survey-based advocacy process to motivate and benchmark responsible environmental practices in our supply chain. As a result we have collected and shared comparative information about supplier environmental practices that has enabled interested suppliers to compare their performance with that of their peers. To date we have profiled the environmental practices of over 1000 individual suppliers on up to 35 different environmental indicators. Among others environmental indicators, the survey addresses issues such as: energy and water consumption at supplier facilities, logistics efficiency, environmental attributes of product packaging, the environmental attributes of products supplied to Massmart, environmental sanctions or censures due to supplier practices or products and public disclosure of environmental indicators material to the supplier's business. In 2016 Massmart, for a third year running, publicly recognised the top 10 performing suppliers who demonstrated an industry leading commitment to sustainable environmental management and product development. These suppliers were recognised at Massmart's Annual Supplier Environmental Awards lunch which is attended by leading national and international NGO's and media. In addition, top-performing suppliers are also recognised in press releases and a survey report which is sent out to all participating suppliers.

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
Six-monthly or more frequently	Board or individual/sub-set of the Board or committee appointed by the Board	South Africa, Botswana, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Swaziland Tanzania, Uganda and Zambia	3 to 6 years	Massmart evaluates climate change risks and opportunities at a group-wide, division and facility level. A wide variety of climate change related risks and opportunities are evaluated by different groups (Risk Committee and the Social and Ethics Committee) depending on the scope of their impact, such as general regulatory risks that could impact company or market operations, specific regulatory and physical risks that could impact individual facilities or regional operations, and a variety of other risks and opportunities in the supply chain, operations, and at a customer level. Massmart continuously gathers information to identify risks and opportunities through extensive research and engaging with knowledgeable stakeholders. Our stakeholder engagement practices include participation in stakeholder organised forums, conducting one-on-one meetings, making formal submissions to Parliament, conducting stakeholder surveys, and hosting public policy and general interest discussion groups.

CC2.1b
Please describe how your risk and opportunity identification processes are applied at both company and asset level

Company level risks are seen as strategic risks: These are longer-term and more material in nature and may only be monitored and managed through longer-term strategic business responses. For example executive talent retention and succession, transformation and supply chain. Company-level, climate change risks are identified and investigated by a sustainability unit, specifically mandated with performing this role. Risks are presented to and evaluated by different functional groups at company level (e.g. Risk Committee). Risks identified at divisional and facility levels are discussed at a divisional level before being relayed to the sustainability unit and relevant group forums and committees situated at company level. This is applicable in both the evaluation of long- and short-term climate change impacts.
Asset level risks are seen as operational risks: These risks (e.g. in-store health, safety and security, fire prevention and detection) can be immediately addressed by local management actions and are the direct responsibility of each Divisional Executive Committee where a Loss Prevention or Risk Officer has line-responsibility. Asset level risks are

identified based on how the risk affects product availability and cost (especially relevant to staple foods which form the backbone of Massmart's food offering in many of the rural markets in which it operates) and the ability for local producers and manufacturers to operate (e.g. effect of carbon tax on supply chains).
Risks that affect multiple assets are addressed at company-level. Depending on magnitude, either a targeted approach (at asset level) or blanket approach (company level) is deployed. For example, because Massmart operates in a water scarce part of the globe, water efficiency initiatives are deployed across the Company (long-term mitigation processes) however, a more targeted approach may apply for areas or assets that are specifically affected by severe drought conditions in the short-term.

CC2.1c
How do you prioritize the risks and opportunities identified?

Risks are prioritised based on the probability of the risk and the potential impact to the company's operations and current business structure and the consequences of taking action versus taking no action. For example, an immediate regulatory requirement mandating a reduction in waste generated to lower emissions requires immediate action to ensure compliance. Whereas a potential regulatory change that may have impacts years into the future, but that does not currently impact our facilities, is monitored but does not necessarily drive short-term actions.
Risks are plotted and prioritised based on risk probability and estimation of impact, as per the following assessment criteria:
1. Is there a legislative/regulatory driver?
2. Is there a directly associated commercial implication?
3. Is there resonance with Government and civil society driven social discourse?
4. What is the relevance to Walmart's Global sustainability commitments?
5. What positive leverage does it present for Massmart-Walmart's reputation in Africa?
6. What practical influence is Massmart able to exert over the issue?

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. A description of how the business strategy has been influenced;

The Groups strategic priorities include:
1. To drive the growth and profitability of the core South African business over the medium-term;
2. To expand further into Food Retail and the Fresh categories through new stores and our existing formats in South Africa;
3. Sub-Saharan African expansion through opening Builders Warehouse, Game and Masscash stores. In the next two years we anticipate opening 11 new stores representing ex-SA space growth of about 26.2%; and
4. To expand, improve and refine our online/e-commerce offerings in DionWired, Makro and Massbuild.
All risk assessment procedures are thus aligned to ensure that the group will be able to effectively meet these strategic priorities. Climate Change risks (and opportunities) that impede (or enhance) our ability to meet these strategic objectives are included in to our company wide risk assessment procedures.

The majority of data collection happens on an annual basis. These data inform the GHG footprint from across the business. The results and any changes are included in reports to both the Executive Committee and the Board. It is the responsibility of Corporate Affairs at company-level to track progress against targets, which are currently aimed at reducing energy consumption on an intensity basis and are primarily where internal climate change mitigation takes place.
We continuously evaluate supply chain risks so that we make appropriate sourcing decisions to minimise impact and where appropriate, adopt responses in the event of climate induced impacts. This process is informed by means of the Massmart Environmental Advocacy Programme (direct engagement with Massmart's supply chain) and through the continuous monitoring of climate-related risks as presented on national and international platforms (i.e. desktop and media alerts, tracking of the political landscape changes, climate change mitigation strategies and expectations of the private sector).

ii. At least one example given of how the business strategy has been influenced;

As energy tariffs for grid electricity continue to rise and consumer and stakeholder awareness of climate change grows, a clear strategic advantage would be one that relates to reducing emissions, mitigating costs and being identified as a responsible retailer. Massmart's climate change strategy is primarily influenced by regulatory and reputational risks, and the need to drive down emissions. The majority of the Group's total emissions (70-80%) are implicated in purchased electricity generation. Key resulting emissions-reduction strategies include reducing the Company's energy footprint through energy efficiency initiatives (such as store retrofits and technical innovation) and increasing its reliance on clean energy generation through the implementation of a company-wide renewable energy project.

iii. What aspects of climate change have influenced the strategy (e.g. need for adaptation, regulatory changes, or opportunities to develop green business);

Massmart's climate change strategy is integrated into a holistic operational and supply chain management framework. These are influenced by changes to South Africa's national greenhouse gas regulations, reputational risks and opportunities to reduce operational costs and reliance on nationally-supplied electricity. The strategy is also influenced by supply chain risks and the challenges they present to ensuring secure supply of food products, especially staples.

Climate change forms an important part of project considerations and business strategy at Massmart. We are committed to playing a role in mitigating climate change impacts in areas where our actions can make a material difference. This may vary between companies and industries however, we have identified that we can have the greatest impact on greenhouse gas emissions through reducing our Scope 2 emissions (accounts for over 75% of our combined Scope 1, 2 and 3). We are currently embarking on projects which are primarily aimed at improving energy efficiency while reducing cost and emissions resulting from consumption of fossil-fuel generated energy. We also see opportunity to adapt to drafted national regulatory changes which seek to reduce national carbon emissions through carbon taxation and emissions reporting. Energy consumption data are currently collected across all operations and facilities which are part of the Massmart Group of companies. These data are then used to inform decisions to identify where certain carbon emissions-reducing projects should be prioritised. These data are reported quarterly to Massmart Head Office.

iv. How the short term strategy has been influenced by climate change (or if none, this is stated) – 'Short term' can mean 'current';

Short-term is defined as current or annual. Massmart's short- to medium-term strategy is one of prioritising energy efficiency initiatives through implementation of energy saving projects (which are also necessary to achieve our long-term intensity target of 10% reduction overall). These include the use of daylight harvesting in stores and distribution centres, installation of/conversion to LED lighting and business management systems (BMS), on-going roll-out of online consumption meters and CO_2 refrigeration. Additionally, we continuously evaluate supply chain risks so that we make appropriate sourcing decisions to minimise impact and where appropriate, adopt responses in the event of climate induced impacts.

v. How the long term strategy has been influenced by climate change (or if none, this is stated);

Long term is defined as 5-6 years. Longer term strategies at store and facility level involve exploration of renewable energy solutions once energy efficiency has been optimised at stores and DCs. Massmart has already implemented a photo-voltaic pilot project (a decision endorsed by the Board in 2015) as part of developing specific long-term goals in this area.

vi. How the Paris Agreement has influenced the business strategy (e.g. the process of transition planning alongside the ratcheting of Intended Nationally Determined Contributions (INDCs));

The Paris Agreement has not yet influenced the business strategy, but has paved the way for the company to set more ambitious science based targets. The process of considering these types of targets is currently underway, and will be aligned to a future strategy to manage our emissions performance.

vii. How this is gaining a strategic advantage over your competitors; and

Addressing climate risks assists us in reducing costs thus making us more competitive, as well as improving our reputation which assists us with gaining greater market share and

improving shareholder confidence.

viii. Do you use forward-looking scenario analyses, including a 2oC scenario, to inform your organization's businesses, strategy, and/or financial planning?

Currently, no.

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)

Direct engagement with policy makers
Trade associations
Other

CC2.3a
On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	Massmart supports government's drive to improve energy efficiency and reduce carbon emissions. Massmart also attends discussions with government and key stakeholders related to the introduction of new regulations around energy efficiency labelling on white goods. Makro has engaged with Eskom (a government parastatal) regarding their demand side management programmes and has contributed to Eskom energy awareness campaigns.	Massmart continues to identify opportunities to install more energy efficient technology in its stores and distribution centres and help empower its consumers to make more environmentally responsible choices by promoting energy efficient products where available and ensuring compliance with national energy efficiency regulations.
Clean energy generation	Support	Through the implementation of Massmart's pilot PV project, engagement with local government has centred on permission to install power generation facilities on site, investigating the benefits of renewable energy and how to accommodate renewables in with the current national strategy for energy generation. Discussions have also included topics around low and medium voltage net-metering (not currently available) for grid-tied systems. The legalities of entering into power purchase agreements with entities other than Eskom have also been discussed.	Massmart supports regulation which promotes clean energy. We would like to see regulations that allow for widespread participation from any interested party and that stipulate a subsidies framework to assist with migration to a more diverse energy mix. Regulations should also aim to reduce or remove barriers and provide incentives to promote increased adoption of clean energy.

CC2.3b
Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c
Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
National Business Initiative (NBI)	Consistent	The NBI's position on climate change is that; climate change and energy are no longer purely of environmental concern but are becoming an important issue in economics and sustainable business. The adverse changes to climate and the depletion of energy resources have a direct impact on the "business as usual" approach. NBI, therefore, aims to mobilise business as a whole towards the formulation of a business climate change response strategy through: increased awareness, voluntary collective action, policy engagement, mitigation activities, adaptation, and promotion of capacity building initiatives through partnerships.	Massmart supports energy efficiency initiatives and engages with the National Business Initiative (NBI) on an on-going basis. As member of the sustainable retail forum and with respect to a request from Greenpeace, Massmart requested the NBI to approach government on its behalf around issues, relating to renewable energy policy. Massmart has previously worked closely with the NBI's Private Sector Energy Efficiency (PSEE) programme where we identified suppliers through our supplier advocacy process who had the potential to benefit from the completion of free and/or partially subsidised energy audits. Further to that Massmart actively engaged with these suppliers and asked them to make contact with the NBI and also provided their contact details to the NBI. Massmart has also stated the importance of moving toward a renewable energy future and has reiterated the importance of engaging with government to form a clear climate change strategy which fundamentally incorporates renewable energy.
World Wildlife Fund	Consistent	The World Wildlife Fund (WWF) has set a goal for the world to develop an equitable low carbon economy by 2050, which is resilient to the level of climate change that is now unavoidable. To this end, the WWF is advocating for a new international climate agreement, promoting energy efficiency, renewable energy sources, preventing greenhouse gas emissions from deforestation and developing and promoting climate change adaptation strategies.	Massmart proactively supports energy efficiency initiatives and engages with the WWF on an on-going basis.
Greenpeace	Consistent	Greenpeace's mission is to work with others to foster environmental consciousness whereby Africa's people seek social and economic prosperity in ways that protect the environment for the benefit of humans, the planet, and the future. Greenpeace is driving a campaign with the major retailers in South Africa to switch to renewable energy. As per this campaign, Greenpeace is interacting with all retailers with a push to transform the retailers into 100% renewable energy. As part of this drive, the organisation produces reports and ranks each of the retailers.	Massmart supports Greenpeace's drive for greater widespread adoption of renewables access in South Africa, and is providing as much data as is required. Massmart attended and was a panel participant at the launch of Greenpeace's "Retailers and Renewable Energy Report". Other panel participants included representatives from Woolworths, the CSIR, Eskom and the South African Photovoltaic Industry Association (SAPVIA). The debate touched on issues including renewable energy implementation, legalities, Eskom-specific views and implications of a renewable energy future in South Africa. Massmart met with Greenpeace Africa and the National Business Initiative to discuss challenges and obstacles to renewable energy installations and implementation within the retail sector. These concerns were to be raised at an appropriate time with Government per the NBI's liaison function.
Consumer Goods Council of South Africa CGCSA)	Consistent	The CGCSA facilitates stakeholders' engagement on risk, safety, compliance and sustainable issues across the consumer goods value chain; as well as championing advocacy projects transparently to all members since 2002. The CGCSA is partnering with the DTI and DoE in their introduction of energy efficiency standards and labelling appliances in South Africa.	Massmart is in support of labelling and products, and supplying energy efficient products. Massmart attended a meeting hosted by the CGCSA on energy efficiency labels and minimum energy performance standards (MEPS) for white goods.

CC2.3e

Please provide details of the other engagement activities that you undertake

Massmart maintains an open-door-policy with our stakeholders and whilst we utilise more formalised mechanisms of engagement such as workshops and surveys to track our stakeholders' perceptions and feedback, throughout the year stakeholder engagement also takes the form of informal dialogues and discussions as well as regular correspondence. For example, Massmart conducts an annual supplier environmental survey with our suppliers. The survey tracks our supplier environmental performance and perceptions. Among other environmental indicators, the survey addresses issues such as; energy consumption at manufacturing facilities, operational water consumption, logistics efficiency, and environmental attributes of both products and packaging supplied to Massmart. In addition to this, Massmart conducts site visits, media reviews and engages with a number of environmental NGO's to verify responses provided in the supplier environmental survey, and when needed we conduct workshops with suppliers to address key environmental issues within the supply chain. In addition, we participated in the Department of Environmental Affairs (DEA) steering committee on e-waste and we've engaged heavily with Greenpeace Africa with regards to their renewable energy advocacy initiative. As a part of this we also participated in an interactive Greenpeace-hosted panel on renewable energy in the retail space. We have also arranged and facilitated a joint session between other retailers, NBI and Greenpeace to discuss challenges, etc. in the retail sector with regards to renewable energy.

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?

Direct and indirect communication activities are overseen by the Group's Sustainability Manager who is also responsible for defining the Group's climate change strategy.
Core to Massmart's corporate accountability approach is the Group's commitment to integrate commerciality and accountability. This commitment has given rise to Massmart's three sustainability themes, which are: minimise the group environmental footprint, to enable sustainable supply and consumerism and champion social equality initiatives. The focus of Massmart's climate change strategy is related to minimising the Group's environmental footprint by improving operational energy efficiency and minimising water use and waste generation. As such, Massmart's corporate accountability model and objectives compliment the Group's climate change strategy and goals.

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?

Intensity target

CC3.1b
Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
Int1	Scope 2 (location-based)	47%	0%	Metric tonnes CO2e per square meter*	2010	0.343	2020	No, but we anticipate setting one in the next 2 years	This target refers specifically to scope 2 emissions of DionWired and Game stores only within the Massdiscounters division. These stores accounted for 47% of all scope 2 emissions during the base year. These targets exclude all non-store facilities and Africa stores. In 2013, Massmart set electricity reduction targets against a business as usual projection. The projections assumed that both Game would be transitioning towards a more energy intensive space of food retail, utilising more refrigeration and HVAC. The BAU projections for Game would therefore allow a significant increase in energy consumption per square meter (26%). DionWired's location in energy intensive shopping centre environments was also expected to result in increases in intensity here but not nearly to the same degree (allow for a 12 % increase). The targets for Massdiscounters stores was to reduce this BAU scenario by 8% by 2020. When translating this into an intensity target, emissions intensity would need to be capped at the same emissions intensity as that of the base year. Note all targets were calculated based on a South African grid emission factor of 1 Tonne CO2 per MWh (at time of base year), which has not changed significantly throughout the reporting years.
Int2	Scope 2 (location-based)	27%	0%	Metric tonnes CO2e per square meter*	2010	0.373	2020	No, but we anticipate setting one in the next 2 years	This target refers specifically to scope 2 emissions of Makro stores only within the Masswarehouse division. These stores accounted for 27% of all scope 2 emissions during the 2010 base year. These targets exclude all non-store facilities and Africa stores. In 2013, Massmart set electricity reduction targets against a business as usual projection. The projections used assumed that Makro stores would be transitioning towards a more energy intensive space of food retail, utilising more refrigeration and HVAC. The BAU projections for would therefore allow a 26% increase in energy consumption per square meter. The targets for Makro stores was to reduce this BAU scenario by 13% by 2020. When translating this into an intensity target, emissions intensity would need to be capped at the same emissions intensity as that of the base year. Note all targets were calculated based on a South African grid emission factor of 1 Tonne CO2 per MWh (at time of base year), which has not changed significantly throughout the reporting years.
Int3	Scope 2 (location-based)	11%	10%	Metric tonnes CO2e per square meter*	2010	0.11	2020	No, but we anticipate setting one in the next 2 years	This target refers specifically to scope 2 emissions of Masscash Cash and Carry and Jumbo stores only within the Masscash division. These stores accounted for 11% of all scope 2 emissions during the 2010 base year. These targets exclude all non-store facilities and Africa stores. In 2013, Massmart set electricity reduction targets against a business as usual projection. The emission reduction target of 10% was set against the BAU projection, The projections used for these Masscash stores assumed no fundamental change in the business model, and therefore when translating this into an intensity target, this is represented as an intensity target of 10%. Note all targets were calculated based on a South African grid emission factor of 1 Tonne CO2 per MWh (at time of base year), which has not changed significantly throughout the reporting years.

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
Int4	Scope 2 (location-based)	14%	0%	Metric tonnes CO2e per square meter*	2010	0.09	2020	No, but we anticipate setting one in the next 2 years	This target refers specifically to scope 2 emissions of Builders Warehouse, Builders Express and Builders Trade Depot of the Massbuild division only. These stores accounted for 14% of all scope 2 emissions during the 2010 base year. These targets exclude all non-store facilities and Africa stores. In 2013, Massmart set electricity reduction targets against a business as usual projection. The projections assumed that Builders Express stores specifically would be transitioning towards a smaller, more energy intensive store sizes, utilising more HVAC. The BAU projections would therefore allow a significant increase in energy consumption per square meter (an increase of 33%), Builders warehouse projections also allowed for an energy intensity increase of 12%. The targets for Massbuild stores was to reduce this BAU scenario by 11% by 2020. When translating this into an intensity target, emissions intensity would need to be capped at the same emissions intensity as that of the base year. Note all targets were calculated based on a South African grid emission factor of 1 Tonne CO2 per MWh (at time of base year), which has not changed significantly throughout the reporting years.

CC3.1c
Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
Int1	Increase	98	No change	0	Our projected growth rate (in square meters) was estimated to be 73% by 2020. Based on the estimations in our BAU scenario (modelled on a transition towards higher intensity food based retail stores) our energy consumption was estimated to grow by 116%. However the 8% reduction from BAU translates to an actual MWH growth of 98%. We are already tracking much better than the targets, showing a much lower absolute emissions growth than projected.
Int2	Increase	83	No change	0	Our projected growth rate (in square meters) was estimated to be 81% by 2020. Based on the estimations in our BAU scenario our energy consumption was estimated to grow by 110%. However the 13% reduction from BAU translates to an actual MWH growth of 83%. We are already tracking much better than the targets, showing a much lower absolute emissions growth than projected.
Int3	Increase	17	No change	0	Our projected growth rate (in square meters) was estimated to be 31% by 2020. Based on the estimations in our BAU scenario our energy consumption was estimated to grow by 30%. However the 10% reduction from BAU translates to an actual MWH growth of 17%. We are already tracking much better than the targets, showing a much lower absolute emissions growth than projected.
Int4	Increase	158	No change	0	Our projected growth rate (in square meters) was estimated to be 120% by 2020. Based on the estimations in our BAU scenario our energy consumption was estimated to grow by 191%. However the 11% reduction from BAU translates to an actual MWH growth of 158%. We are already tracking much better than the targets, showing a much lower absolute emissions growth than projected.

CC3.1e
For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Int1	60%	100%	The intensity target was based on a BAU projection, estimated in 2013. Since this time Massmart has embarked on a range of energy efficient programmes (outlined below and in previous CDP responses), which has resulted in energy intensity improvements throughout all its stores. By the end of this reporting year the Massdiscounters stores achieved an energy intensity of 0.224 MWh per m2, this is an achievement of 175% of the set target.
Int2	60%	100%	The intensity target was based on a BAU projection, estimated in 2013. Since this time Massmart has embarked on a range of energy efficient programmes (outlined below and in previous CDP responses), which has resulted in energy intensity improvements throughout all its stores. By the end of this reporting year the Makro stores achieved an energy intensity of 0.284 MWh per m2, this is an achievement of 132% of the set target.
Int3	60%	97%	The intensity target was based on a BAU projection, estimated in 2013. Since this time Massmart has embarked on a range of energy efficient programmes (outlined below and in previous CDP responses), which has resulted in energy intensity improvements throughout all its stores. By the end of this reporting year the Masscash stores achieved an energy intensity of 0.108 MWh per m2, this is an achievement of 97% of the set target.
Int4	60%	100%	The intensity target was based on a BAU projection, estimated in 2013. Since this time Massmart has embarked on a range of energy efficient programmes (outlined below and in previous CDP responses), which has resulted in energy intensity improvements throughout all its stores. By the end of this reporting year the Massdiscounters stores achieved an energy intensity of 0.080 MWh per m2, this is an achievement of 136% of the set target.

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

Group of products	Energy efficient products which allow our customers to avoid emissions associated with nationally-supplied grid electricity. Products include energy efficient lighting products (CFL & LED products), solar products (water heating and lighting), natural gas products (cookers and heaters) and thermal insulation products. In addition, indirect emissions avoidance is facilitated through water- saving products such as low-flow/aerated showerheads and regulators. Other products in the range which assist consumers to avoid emissions include rechargeable batteries, low VOC paints and increased recyclability of products and packaging. In 2016 1.4 million low energy lamps were sold amounting to an estimated 98 million kWh savings (98000 tonnes CO2e avoided emissions). More than 42 000 water efficient product alternatives sold achieving sales of R119.3 million.	Avoided emissions	Other: Internally calculated energy efficiency classification methodology.	0.4%	Less than or equal to 10%	
Product	Post-consumer e-waste recycling service. All Makro stores now assist consumers in reducing emissions through an e-waste return and recycling programme in association with Samsung and Desco. In 2016, 106 tonnes of e-waste was recycled and over 845 tonnes has been recycled since the programme's inception.	Avoided emissions	Other: Recycling programme	0%	Less than or equal to 10%	

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*	1	600
Implementation commenced*	0	0
Implemented*	6	56500
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
Energy efficiency: Building services	Integration of Building Management Systems primarily at Massbuild sites. Implementation commenced in previous reporting periods, but rolled out across 10 additional stores during the reporting period. (implemented)	16000	Scope 2 (location-based)	Voluntary	16642000	7000000	1-3 years	16-20 years	This project commenced in 2013. Here we are reporting the additional 10 sites that came online during the reporting period to a total of 39 stores and 1 office (40 entities) at ~R 175 000 per installation with estimated efficiencies improvement of a minimum of 35%.
Energy efficiency: Building fabric	Massmart has been on a retrofit programme to replace all high-bay halogen lighting with more efficient LED lights primarily at Massbuild and Masswarehouse. This programme commenced in previous reporting periods, but was rolled out to a further 18 sites during this reporting period. (implemented)	737	Scope 2 (location-based)	Voluntary	743633	2052000	1-3 years	6-10 years	This project commenced in 2013. Here we are reporting on the additional 18 stores that came online during the 2016 reporting period (bringing the total of stores to 27 stores). Saving of 187W per light fitting (213W high bay LED vs. 400W halogen).

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
Low carbon energy installation	Massmart commenced investigations and implementation of a renewable energy programme in 2015. In 2016, solar PV projects were implemented at two Massmart locations. Makro Carnival, which opened in April, became the first building in the Massmart Group to make use of renewable energy. The 2,080 solar photovoltaic (PV) panels installed on its roof have the capacity to generate almost one million kilowatts of electricity per annum, accounting for approximately 60-80% of the building's electricity needs during the day and 30% of the store's total annual energy requirements. Makro Woodmead followed in Makro Carnival's footsteps by installing an even larger solar PV plant in the store's car park. Not only is it estimated to supply roughly 20% of the store's annual electricity needs, it offers the added benefit of shaded parking for customers.(implemented)	1270	Scope 2 (location-based)	Voluntary	330200	0	<1 year	16-20 years	No investment capital required, as electricity is purchased at a cheaper rate form a third party.
Waste recovery	Our objective remains to reduce waste to landfill by prioritising the separation and recycling of paper, plastic and board at our stores and distribution facilities. We have made considerable effort to improve our recycling rates by circulating online waste assessments, working closely with waste service providers and monitoring waste generation across our facilities. Currently, 89% of all stores are actively engaged in separating and recycling their waste, resulting in an estimated 25,000 tons of waste being diverted from landfill in 2016. Those stores not recycling are located in areas where we are, at present, unable to find reliable vendors to perform this function. During the year, Makro and Massbuild successfully negotiated national waste management contracts that have seen the number of waste service providers reduced by 86%. In Makro alone, associated cost savings have amounted to approximately R2 million. (implemented)	28000	Scope 3	Voluntary	15000000	0	<1 year	16-20 years	Waste management still results in a net cost to the business however, rebates from recyclables provide a level of subsidy which can be viewed as a cost saving (rebates vary but conservatively are in the region of R600/tonne.
Energy efficiency: Building fabric	Massmart embarked on a programme to install and retrofit daylight harvesting panels at all standalone stores (primarily Makro and Massbuild). This started in 2011, but during the reporting year, 5 new stores were retrofitted. (implemented)	5400	Scope 2 (location-based)	Voluntary	5448600	54000000	4-10 years	16-20 years	The savings indicated are annual savings to date. 100 000 kWh per store, per annum. 54 stores (16 Makro, 38 Massbuild) with daylight harvesting. Up to R 1 million investment per store.
Energy efficiency: Building services	Massmart embarked on a programme to retrofit older inefficient and high GWP refrigerant systems with more efficient and lower emissions CO2 systems, mostly throughout all Makro stores. (implemented)	10000	Scope 1	Voluntary	0	0	1-3 years	16-20 years	Capital investment on natural refrigeration is typically 8-10% higher than similar mainstream refrigeration plants using synthetic refrigerants. Payback period is 2-3 years and so capital costs and savings are not indicated here as an absolute value.
Low carbon energy installation	As part of its Solar PV rollout, Massmart has already commissioned the 3rd such site for 2017. (To be Implemented)	600	Scope 2 (location-based)	Voluntary	150000	0	<1 year	16-20 years	Massmart is in a PPA with a 3rd party that sells electricity at a rate cheaper than would have been from the national grid. No capital costs are required for this.

CC3.3c
What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	Regulatory requirements drive investment in emissions reductions initiatives across Massmart operations because we align our business to be in continued compliance with state, provincial and municipal requirements. For example, the waste management act drives investment in more efficient waste management processes and has resulted in greater emphasis being placed on the rationalisation of secondary packaging.
Dedicated budget for energy efficiency	Although the size of the budget for energy efficiency varies between Massmart divisions, budget is allocated on a divisional basis for both new stores retrofits, which enables the installation of more energy efficient technology and a more energy efficiency logistics system.
Dedicated budget for other emissions reduction activities	Massmart sets aside budget for the reduction of other emission sources. Examples include a shift towards the use of natural gases in Massmart's refrigeration units (new Makro stores) and the installation of photo-voltaic power plants.
Financial optimization calculations	Massmart invests in energy efficiency projects to reduce business operating costs. This has led to the roll out of programmable check meters across all Massmart divisions and retrofitting of existing stores with more energy-efficient technology. This is on-going. In addition, Massmart is implementing business management systems (BMS) which remotely monitor and manage energy consumption in Cambridge Food, Game and Builders Warehouse stores. In 2016 we have completed the introduction of another 10 BMS systems, bringing the total to 40 since roll-out began in 2014.
Lower return on investment (ROI) specification	Massmart calculates the profitability and plausibility of energy efficiency and renewable energy projects on a store-by-store basis. In cases where stores can still optimise energy efficiency, projects that improve efficiencies usually have a payback period of maximum 4 years while renewable energy projects are designed to ensure a payback period of between 5 - 7 years. Projects are designed to ensure that energy efficiency investments are targeted at optimising energy reductions and return on investment.

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 mainstream reports (including an integrated report) in accordance with the CDSB Framework	Complete	Pg 88 - Natural Capital	https://www.cdp.net/sites/2017/20/11420/Climate Change 2017/Shared Documents/Attachments/CC4.1/MassmartIAR2016.pdf	Emissions intensity, and other resource consumption intensity reported.
In mainstream reports (including an integrated report) in accordance with the CDSB Framework	Complete	Web based report: http://www.massmart.co.za/iar2016/environmental-performance-indicators/		No file attached for web based report, that is web based version of the Integrated PDF Report. http://www.massmart.co.za/iar2016/environmental-performance-indicators/

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

Carbon taxes	The South African government intends to introduce a carbon tax in line with its commitment to reduce greenhouse gas emissions nationally as part of international agreements. The commitments directly impact on Massmart through potential taxation of Massmart's Scope 1 emissions as well as increases in electricity prices across the Group's operations as a result of increased taxation levied against Eskom, the primary energy provider across Massmart's operations. The Proposed tax rate of R120 per tonne CO_2e may be reflected as an effective rate of R48 per tonnes CO2e once all allowances are allocated. Although Massmart is unlikely to be subject to the tax directly for at least the first phase (5 years), should the carbon tax be implemented, electricity cost may increase immediately, and should the exemptions be reduced in future, Massmart may be liable to pay tax on all of its scope 1 emission in the future.	Increased operational cost	1 to 3 years	Direct	Very likely	Medium-high	Massmart's current Scope 1 emissions are below the 100000 threshold proposed by Government, based on this the direct cost of Scope 1 taxation of emissions is likely to be negligible. However should government lower the threshold, Massmart may be liable to pay between R0.75 - R2 million for its South African based operations scope 1 emissions. Scope 2 emissions represent between 70-80% of Massmart's total carbon emissions. Eskom has already increased energy tariffs by 12.69% in 2015. Should this energy cost be further increased with the advent of the Carbon tax, it could have a significant implication for energy prices and Massmart's operational costs it is expected that this tax will be passed on in Massmart's South African operations. Should Eskom pass on the full ZAR48 per tonne CO2e, this would translate to ZAR48 per MWh. The over 430000MWh that Massmart consumes in SA could result in over ZAR20 Million additional cost to electricity per annum.	Massmart manages Scope 1 emissions primarily by targeting fugitive emissions from air-conditioning and refrigeration systems which have high global warming potentials. New Makro stores contain (and older stores are being retrofitted with) efficient CO_2 refrigeration which has a significantly lower global warming potential and is more energy efficient. In most Builders Warehouse stores and some Makro stores, evaporative cooling is used as a more sustainable alternative to typical air-conditioning, reducing Massmart's Scope 1 emissions footprint. Managing the financial implications that a carbon tax will likely have on grid energy tariffs, Massmart has implemented energy efficiency measures which include: installation of independent check meters, fitting new Makro and Builders Warehouse stores with light metering, auto-lighting systems and daylight-harvesting. These interventions ensure that new Makro stores are on average 25% more efficient than legacy stores. New Solar PV installations are also estimated to reduce store reliance on grid energy by up to 33% annually. By setting energy reduction targets and placing greater emphasis on energy efficiency Massmart is managing the risks associated with energy instability, tariff increases and simultaneously reducing its overall carbon footprint (predominantly Scope 2 emissions).	The cost of installing energy efficient technologies (e.g. light metering systems, high performance refrigeration units) are incorporated into the store development costs of each store. The installation of polycarbonate light boxes in new generation Makro and Builders Warehouse stores are estimated at ZAR500000-ZAR1000000 per store. Photo-voltaic power plant cost models are variable but range from ZAR1-5 million.

Fuel/energy taxes and regulations	South Africa has historically benefited from relatively cheap electricity. However, the price of electricity rose rapidly from an average of 17c/kWh in 2006 to 99c/kWh in 2016 (average tariff throughout the Group in SA). Escalating energy prices have the potential to significantly increase operating costs in the future. Given the increased demands for energy and the shortage of excess generation capacity in South Africa, it is likely that these increases will continue. In addition to the increases seen in 2015, the National Energy Regulator of South Africa (NERSA) has approved a 2% increase in energy tariffs effective from April 2016, and this may increase significantly in 2017(proposed 20% increase). Continued substantial increases in energy tariffs significantly impacts Massmart's operating costs	Increased operational cost	1 to 3 years	Direct	Very likely	Medium-high	Electricity outages and energy price hikes are likely to impact store operations and the Group's operational costs. It expected that energy price volatility will have further impacts on operating costs in the future. In Rand terms, an increase of 9.4 % will result in additional ZAR 40 million – 45 million in electricity costs per annum.	To address electricity price volatility Massmart is currently implementing modular photo-voltaic systems that reduce energy costs. We expect that as a result of 3 new renewable energy installations, there could be an annual estimated R 650 000 – R900 000 worth of financial benefit to the business through participation in carbon trading and consumption-related expenses based on the pilot project alone. In addition, we continue to implement a range of energy efficiency initiatives across our stores. These include lighting retrofits, the installation of efficient evaporative coolers and high performance refrigeration units. Massmart has prioritised operational energy efficiency through the development of a Group energy guidance position which makes monitoring and recording of monthly energy consumption mandatory, programmable check meters and the development of store specific energy efficiency plans that define energy savings when benchmarked against legacy stores, indicate expected energy savings in the case of store retrofits and keep track of progress toward achieving energy targets.	The installation of polycarbonate light boxes in new generation Makro and Builders Warehouse stores is on-going (stores opened after 2008) are estimated at ZAR500000 - ZAR1000000 per store. Building Management Systems (BMS) which remotely monitor and manage energy consumption and energy metering costs are on-going. Such systems are available on the market from between ZAR150000 - ZAR250000. The price of energy monitoring meters rage from ZAR100 - ZAR500 per site. Small scale PV installations cost between ZAR1-2 million however, establishment of large-scale, long-term power purchase agreements incur no capital costs relevant to Massmart.
Emission reporting obligations	The National Environmental Management Act: Air Quality Act: Draft National Greenhouse Gas Reporting sets out to incorporate greenhouse gases, as priority air pollutants. Under this regulation, companies with specific listed emission generating activities are required to report on their GHG emissions to national government, using the NAEIS reporting framework. The regulations were promulgated into law in April 2017. The only risk to Massmart with such a regulation is that the company may eventually meet the threshold in terms of the listed activity of energy generation (through generators) when taking into account the entire generating capacity of all its generators throughout South Africa. The risk of failure to report could result in penalties.	Increased operational cost	1 to 3 years	Direct	Unlikely	Medium-high	Under the regulation, should a company such as Massmart fail to comply, or provides false information, that company can be subject to a fine not exceeding ZAR5 Million, and potential imprisonment not exceeding 5 years. A second offence, could result in a fine not exceeding ZAR10Million and imprisonment not exceeding	Massmart has been measuring its GHG inventory for since 2010, and has for the past 4 years been verifying these emissions, and is improving on the scope and boundaries, and on the internal carbon management systems. Massmart is also developing a registry of energy generating capacity, to ensure that thresholds are not met, and if they are met, that the company will be ready for submitting emissions data.	The cost of measuring and verifying all scope 1 and 2 emissions amounts to about ZAR160000 per year - This figure takes into account costs related to in-house staff and third-party verification and CDP report compilation. Additional consultants may be required to develop a list of assets that include listed emissions activities, and for submitting that data to the Department of Environmental Affairs. Consultants could cost up to ZAR100000.

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 mean (average) temperature	Mean temperature change influences a number of key abiotic processes including; rainfall patterns, mean precipitation, oceanic temperatures and ice cap melting. Slight changes in these abiotic factors can lead to natural disasters such as floods and droughts which could decrease the resilience of Massmart's diverse supply chain. For example; these abiotic factors play a huge role in determining global food production and agricultural development. South Africa and the African countries in which Massmart operates in are for the most part seasonally arid, therefore a change in mean temperature could have negative impacts on crop yield and production through decreased soil moisture which undermines food production causing potential disruption to the food supply chain and particularly, the supply of staple foods such as maize, sugar and wheat products and fresh fruit and vegetables. Such disruptions are likely to lead to an increase in the price of staple foods, price inflations negatively affect consumers.	Reduction/disruption in production capacity	1 to 3 years	Indirect (Supply chain)	Likely	Medium	Ultimately, the financial implications of associated with this risk will likely be a loss of sales due to producers/suppliers being unable to adapt to changing and unpredictable climatic conditions. A hypothetical 25% drop in production of key commodity crops resulting from climate-induced conditions such as drought could potentially affect annual sales of a single product by as much as ZAR320 million.	As a retailer, Massmart is less likely to be affected directly by physical climate changes but we realise that there are potentially serious impacts on our suppliers. Understanding the effects of desertification and how climate cycles such as El Niño affect, especially food production assists with responding appropriately to the associated risks. Since 2012 Massmart has engaged with food producers including staples suppliers such as maize. Beyond direct investment, Massmart continues to manage risks in this area through close engagement with forums which is key to mitigate price and supply fluctuations. In addition Massmart proactively engages with its supply chain on environmental initiatives which allows us to assess their level of resilience as a first step to identify opportunities to advocate for better practices that would insulate them from climate change risks.	Massmart's supplier development programme (SDP) has, since its inception, invested ZAR 17 million in food producers. The SDP programme is directly focussed on promoting supply chain sustainability and building resilience. During 2016, Massmart invested R1 million in among other things in small scale commodity suppliers who had been impacted by the widespread droughts across the country. Engaging with our supply chain on climate change risks costs an estimated ZAR 250000 per annum.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Induced changes in natural resources	Changes in ocean conditions can impact the sourcing of fish and fishing activities through changes in migration patterns and this could also result in tighter limits being implemented due to stock depletion. In addition increased carbon dioxide levels may lead to the acidification of oceans, which may lead to further losses in fish biodiversity, thus compromising food security and our ability to meet our customer's seafood demands. For example should ocean conditions impact pilchard stock biomass this would significantly reduce an important protein source for a large number of South Africans and also result in price increases due to fishing restrictions. In recent years such climate change related disruptions have become more apparent and have the potential to impact Massmart's ability to meet customer expectations and demands.	Reduction/disruption in production capacity	>6 years	Direct	Likely	Medium-high	The financial implications associated with this risk have not been fully calculated, however they will be dependent on the type of seafood species (whether they are part of our product offering or not) affected by the changes in oceanic conditions and the scope of change. If induced changes impacted on seafood product sourcing by 15% for example, it could potentially impact sales by between ZAR50-80 million.	Through Massmart's sustainable marine advocacy process, which includes annual seafood species assessments, supplier survey, workshops, site visits and one-on-one meetings with our suppliers, buyers and NGO's regarding sustainable marine sourcing and fish stock health. Based on these engagements we make sourcing decisions such that we source sustainable fish species from well managed fisheries. Through evaluating the sustainability of the fish species we source we are better able to identify each species' biomass and how we can respond to climate related impacts in these fisheries.	The costs associated with managing this risk are covered annually and are incorporated in Massmart's stakeholder engagement and research budget and the environmental sustainability and reporting budget. Seafood workshops cost in the region of ZAR5000-ZAR10000 depending on the number of attendees and on average we have one annually. In addition, our World Wildlife Fund (WWF) annual membership is ZAR25000. The WWF engages closely with government and they are involved in policy decision making. Supplier engagement through surveys and site visits to understand climate risks, amongst others, costs approximately ZAR250000 per annum.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in temperature extremes	South Africa experienced its hottest year on record in 2016, with indication that years are getting hotter. Higher environmental temperatures have prompted an increase in energy demand for refrigeration and ambient air temperature control in stores. As climate change continues to influence extremes in weather and temperature, it is likely to become more of a risk through increased operating costs and energy consumption.	Increased operational cost	Up to 1 year	Direct	Virtually certain	Medium-high	Financial implications associated with this risk will likely involve increased energy consumption related costs. Coupled with continued increases in national energy tariffs, unavoidable grid-electricity consumption will result in considerable increases in energy-related expenditure. Refrigeration and air conditioning consume approximately 30% of our store consumption, and if we look at an average store footprint, increased in cooling energy requirements of for example 5% would result in an increased cost of ZAR5.4 Million, if we continue in a BAU scenario.	Massmart makes use of evaporative air-cooling (along with thermal insulation) in selected stores which are less energy intensive along with high performance refrigeration systems that have been optimised for high ambient temperatures. In addition, Massmart has an active pilot photo-voltaic power generation programme which will assist with reducing costs associated with increased energy consumption via the national grid. New stores are designed to be more thermally inert and less affected by external temperature fluctuations.	Massmart's energy efficiency projects are built into the energy efficiency budget. Initial costs associated with initiatives are approximately 30% more expensive than the typical alternatives however, the cost savings through improved efficiency over time outweigh the costs of the initial investment. The cost of installing energy efficient technologies (e.g. light metering systems, high performance refrigeration units) are incorporated into the store development costs of each store. The installation of polycarbonate light boxes in new generation Makro and Builders Warehouse stores are estimated at ZAR500000-ZAR1000000 per store. Photo-voltaic power plant cost models are variable but range from ZAR1-5 million.

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

Reputation	Climate change could sensitise consumers to the importance of sustainable corporate practices. This could result in greater expectations being placed on retailers to demonstrate environmental sustainability progress within both their operations and supply chains. Our perspective is that although the majority of our customers continue to make purchasing decisions based on cost and value proposition. A core group of customers who are passionate about corporate accountability have a significant voice in lobbying for sustainable practices in the retail sector and can change the shopping behaviour of others. Failure to be identified by these consumers as an environmentally responsible shopping destination may erode our consumer base, decrease our sales and affect the company's reputation going forward.	Reduced demand for goods/services	3 to 6 years	Direct	Likely	Medium	Climate change may lead to changes in consumer demand. Massmart runs the risk of a decrease in brand and share value if it is perceived as failing to adequately address relevant climate change risks. This risk could result in consumers defecting to competitors who are perceived to offer more environmentally responsible choices. Although difficult to estimate, a 2% decrease in sales could result in losses of approximately ZAR3billion	In order to manage these risks, the following action has been taken: -We track customer attitudes to environmentally responsible consumerism through customer intercept surveys. -Introduced Ecowise merchandise range to increase environmentally responsible purchasing practices (all Builders Warehouse private label products introduced in 2013 carry an Ecowise panel), expertise and supplier infrastructure. -We continue to widen the comprehensive range of energy-efficient products, increase the number of Green Stands at selected Builders Warehouse and Builders Express stores, which promote more energy and water efficient products to consumers. -We continue to run our post-consumer e-waste take-back initiative which allows customers to responsibly dispose of their electronic waste. -Massmart continues to conduct environmental screening on product attributes to ensure that consumers have access to sustainable products that consider climate and the environment. --- We communicate in the following ways: In-store communications (notices), eco-labelling (e.g. eco-wise label), on pack messaging (private label), in-store banners (e.g. Makro Carnival). Also through brand campaign – ads in Sawubona and Destiny magazine. Visits to suppliers with journalists (Massmart Supplier Environmental Advocacy Programme).	The cost of Massmart's annual customer survey which includes tracking customer attitudes to environmentally responsible consumerism is built into the Group's stakeholder engagement budget. Annually, costs associated with the customer intercept survey and stakeholder engagement are between ZAR100000-200000. The Builders Warehouse Eco-wise panel and Green stands have not been calculated, however they are built into the Group's product merchandising budget. The costs of the post-consumer e-waste take back initiative are estimated to be in excess of ZAR1 million per year. However, not all of these costs are covered directly by Massmart and its divisions. The cost associated with communicating with our customers are built into the Groups communication and marketing budget. Group Updates that detail Massmart's sustainability and climate change related initiatives cost an estimated ZAR3500 per update.

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

Fuel/energy taxes and regulations	New energy tariff structures and subsidies aimed at reducing electricity and fuel demands and promoting energy efficiency may present opportunities to invest in new technologies and infrastructure. Currently solar installations are limited by maximum viable generation capacity at a store level. Should a net-metering scheme come into effect, the incentive to increase the size of current and future PV installations would have positive cost implications through sale of renewable energy.	Investment opportunities	1 to 3 years	Direct	Likely	Medium	Solar PV installations would allow for the sale of excess generated renewable energy back into the national grid, this would hinge on the resale of electricity through our PPAs (the current model). We could double generating capacity at Makro stores and quintuple it at Builders Warehouse stores. Stores which are in lower tariff areas (2020) vs. 2020 energy goals (2010->2020) - Calculated cumulative year-on-year differences in consumption from projection data - Used current average electricity tariff experienced across the Group (R0.99/kWh) as a watershed, +-8% for inflation per annum - Cumulative savings (2010->2020) represented conservatively as ZAR355539000.	Massmart is focused on improving the energy efficiency and logistics efficiency of its operations and has aggressively implemented energy efficiency initiatives in its stores. Massmart has implemented voluntary carbon emissions reductions measures which include: the installation of independent programmable check meters and Building Management Systems in its stores and DC's and the installation of a range of energy efficiency technologies across its facilities. In addition, Massmart proactively engages with the NBI and Eskom and other policy makers to identify and prioritise opportunities to make use of energy efficiency subsidies to increase the pace of investment in green and energy efficient technologies. Massmart has engaged local renewable energy service providers and we are currently implementing a pilot photovoltaic (PV) project at our standalone stores and distribution centres. Grid-tied onsite renewable energy projects have the potential to greatly reduce our energy costs and scope 2 carbon emissions. To date we have completed 40 successful BMS's. To date we have completed 40 successful BMS's.	The costs associated with managing this opportunity are associated with the collection and analyses of the Group's energy consumption data. Building Management Systems (BMS) and energy metering costs are on-going and range from between ZAR200000 - 220000 per site. To date we have completed 40 successful BMS's. Management costs associated with solar installations through a power purchase agreement are minimal. There is an estimated cost implication of ZAR20-30 million should Massmart double PV capacity at existing stores and roll-out increased generation capacity to initially, about 30 new stores. This would however, allow for the sale of excess generated renewable energy back into the national grid.

Cap and trade schemes	The proposed carbon tax by the SA Government makes an allowance for up to 10% of emissions to be offset by investment into local emission reduction projects. As such, companies such as Massmart could potentially register an emission reducing project as a local project that could have credits sold to the local SA market. This could be particularly viable should Massmart be exempt from the tax, as any reducing activities will not be double accounted.	Increase in capital availability	3 to 6 years	Direct	About as likely as not	Low-medium	The proposed offset scheme implies that there will be a significant market for carbon credits at anything below the ZAR120 per ton value of the tax. Massmart may be able to register a carbon project at one or multiple locations, such as a programme of solar PV activities, and sell the resulting emission reductions. Should Massmart double the capacity of just one of its small pilot PV plants approximately 2 000 tonnes of CO_2e would be available for trade annually. At the current carbon tax rate, sale of such credits could generate up to ZAR240000 per year.	Massmart manages both risks and opportunities with a phased PV roll-out approach. Implementing pilot projects before undertaking large, costly initiatives also provides for mitigation of risk while exploring the feasibility of opportunities. Pilot projects are also designed with long-term objectives and expectations in mind. Current pilot PV projects are grid-tied and are net-metering compatible in expectation of Eskom's new net-metering scheme. Projects have also been designed in such a way as to allow for expansion and integration when new regulations and energy-generation provisions are initiated.	The management costs of participating in carbon trading have not been fully evaluated at this stage as there are a number of changes which are expected after the Carbon Tax Bill comes into effect as well as through adjustments to regulation by industry. Massmart also considers carbon trading as currently a long-term opportunity however, management costs per site may currently include expenses relating to design document development (~ZAR150000), validation and registration (~ZA250000) as well as monitoring costs of existing sites and annual verification procedures (~ZAR150000).
Product efficiency regulations and standards	New legislation in support of energy efficiency interventions and heightened media coverage regarding more environmentally friendly products and practices may assist in creating greater consumer awareness about the need for responsible environmental consumerism, which has the potential to stimulate demand for environmentally responsible products and enable Massmart to increase the size and scale of our environmentally responsible product offering	Increased demand for existing products/services	1 to 3 years	Direct	More likely than not	Low-medium	The financial implications of this opportunity have not yet been quantified.	Massmart has implemented a variety of consumer orientated initiatives to support more environmentally conscious consumerism. These include; Green product aisles in Massbuild stores, the introduction of a comprehensive range of high efficiency lighting technologies and appliances offered in Builders Warehouse, Game and Makro stores. We have also installed water harvesting initiatives across 72 Builders and Makro sites. In addition, we have introduced a consumer advocacy panel on pack through our Eco-wise product range to call attention to products that are environmentally sensitive or that play a role in saving water and energy. In addition, Massmart engages its supply chain regarding energy efficiency labelling on large appliances. We also engage with government and with suppliers regarding regulations that govern product efficiency and sustainability.	The costs associated with in-store customer awareness have been built into the product merchandising budget. The costs associated with improving in-store energy efficiency are incorporated in the store development budget. Water harvesting plants cost ZAR60000 - 100000 per store.

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
Induced changes in natural resources	Climate change induced changes in natural resources may require a review of the origins and manner in which Massmart sources products. Changes may prompt a change in logistics practices for example because alternative food sources are sourced from further afield and require the Company to innovate and strategise in order to keep costs down so as to reduce impact on consumers. These new innovations may be rolled out across the Group logistics operations thus providing a benefit holistically. This review could highlight opportunities to improve internal efficiencies with regards to processes, logistics and sourcing, and potentially lead to new product development and range expansion.	New products/business services	>6 years	Indirect (Supply chain)	Likely	Low-medium	It is difficult to quantify the financial implications associated with this opportunity. However, using sales figures based on comparable product range expansions, this could potentially increase Group turnover by between 0.05-0.1% based on 2016 financial results, this can be estimated at a potential additional ZAR500 Million Rand revenue.	We manage these opportunities by proactively engaging our suppliers though environmental surveys, direct engagements with NGO's. In 2016 we engaged over 380 suppliers through environmentally focused advocacy surveys. By understanding our supply chain and supplier practices we are better able to identify and act on new sourcing, logistics and manufacturing opportunities.	The cost associated with monitoring supplier environmental practices, NGO expectations and monitoring consumer preferences and demands are built in Massmart's stakeholder, research and marketing budget. Annually, costs associated with stakeholder engagement are between ZAR100000-ZAR200000.
Change in precipitation extremes and droughts	Southern Africa has been identified as one of the region's most vulnerable to climate change. Changing rainfall patterns, desertification and increased temperatures have the potential to disrupt food production and supply. However these challenges provide opportunities to re-evaluate group sourcing strategies and build resilience.	New products/business services	1 to 3 years	Indirect (Supply chain)	Likely	Low-medium	Fresh food retail is expected to contribute a greater proportion to Massmart's approximately ZAR91 billion turnover. Disruptions to the fresh food supply chain have the potential to significantly affect the Group's profitability.	Massmart has trained over 760 farmers and included 139 small holder farmers into our supply chain. A component of this support was aimed at assisting farmers to produce food more sustainably and improve overall producer resilience. Although this programme was concluded in 2015, it provides an example of one of the many supply chain development initiatives that we have implemented to improve supplier productivity and increase supply resilience.	As part of the Supplier Development Programme, established in 2011 as a result of the Walmart-Massmart merger, Massmart has to date, disbursed approximately ZAR17million since the inception of the programme, ZAR2.3 million of which was disbursed in 2015, a component of which went toward sustainable farming practices and farmer training.

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

Reputation	Media and NGO discourse regarding the impacts and causes of climate change has the potential to alter customer opinion regarding good corporate governance. The role that Massmart plays in dealing with issues like climate change provides Massmart with an opportunity to strengthen its consumer base by reacting timeously and responsibly to these issues. Reducing emissions and acting against climate change can enhance Massmart's reputation amongst customers, investors and employees.	New products/business services	1 to 3 years	Direct	Likely	Medium	The estimated financial implications associated with this opportunity are difficult to calculate. However, given that 35.9% of Massmart consumers surveyed in 2013 expressed a strong preference for environmentally sensitive products it is not unreasonable to expect that consumers shopping at our competitors share similar views. Attracting environmentally conscious consumers away from our competitors may significantly benefit sales. Should sound environmental practice arise in an increased market share of only 1% - this could result in increased revenue of over ZAR900 million. (based on 2016 revenue)	We recognize that advocacy to suppliers and customers offers significant opportunity to limit harmful effects of consumerism on the environment. We therefore continue to focus on intensifying environmental advocacy efforts with these stakeholders. This includes surveying the environmental practices of suppliers and increasing the number of Eco-wise products we offer to customers. In addition, we focus on proactively communicating our environmental priorities and initiatives in our stores, on the Massmart website and through direct communications with key stakeholders such as NGO's, industry thought leaders and Government.	Engagement costs are on-going and as has already been noted, range from ZAR100000-ZAR200000, a component of which goes towards environmental surveys of suppliers, environmental workshops, supplier site visits and environmentally orientated communications. In addition, issue specific Group Updates that detail Massmart's sustainability and climate change related initiatives cost an estimated ZAR3500 per update.
Other drivers	Due to Massmart's size it is capable of democratising the price of environmentally responsible goods and growing its market share in this area. This could happen mainly through price negotiation as part of more affordable private label product offerings. E.g. Builders new LED light bulb range which offers LED products at reduced prices and in bulk packs.	New products/business services	3 to 6 years	Direct	More likely than not	Medium	The financial implications of this opportunity have not been quantified. However, to put this opportunity in perspective sales energy efficient lights only in 2016 amounted to over ZAR40 Million in While consumer spending on solar geysers has lead the expansion of the range.	Massmart has implemented a variety of consumer orientated initiatives to support more environmentally conscious consumerism. These include; Green aisles in new Massbuild stores and a comprehensive range of alternative high efficiency lighting technologies offered in certain Builders Warehouse, Game and Makro stores.	Management costs are minimal and included within the divisional product merchandising budgets. These costs will be allocated annually as part of the budgeting process.

Other drivers	Waste degradation at landfill is a major source of greenhouse gas emissions. Programmes developed to reduce emissions related to waste disposal may result in additional focus being placed on waste diversion opportunities that incentivise recycling, recovery and reuse of waste. These programmes could reduce waste management and disposal costs and help lower total emissions.	Reduced operational costs	3 to 6 years	Direct	Likely	Medium	Massmart's waste management costs are highly variable. However, industry waste disposal costs range from ZAR1000 - ZAR1200 per collection. In addition, to ensure recyclables are recovered, onsite sorting staff are required at a cost of approximately ZAR7000 per month along with compactor costs of ZAR2400 per month. These costs are however offset through the introduction of subsidised recycling levies and tariffs. Not only would this reduce the total cost of waste management across the Group, but it could also provide an additional source of revenue. In this regard a ZAR0.5 subsidy increase per Kg of paper could potentially bring the Group an additional ZAR12m in revenue annually.	To facilitate the diversion of waste from landfill. Massmart has drafted a waste management guidance note. The guidance note requires the mandatory recycling of paper, board and plastic at all Massmart stores. Massmart conducts an annual store-level online waste management survey to quantify the amount of recyclable and non-recyclable waste currently generated at our stores as well as to ensure compliance with national and municipal standards and regulations. Based on the 2016 survey and subsequent waste data sampling we estimate that we diverted approximately an additional 25 000 tonnes of waste from landfill.	The cost associated with managing this opportunity is incorporated in the environmental sustainability and compliance function, and a dedicated resource whose time spent on waste management is estimated to be over ZAR200000 per annum. Onsite waste management costs can vary from ZAR1000 - 9200 per site per month. Although these costs are on-going, upfront investments in waste compactors, to assist with recycling, are also made where appropriate for new stores.

Changing consumer behavior	Climate change could sensitise consumers to the need to make more environmentally conscious purchasing decisions. This could result in an increase in consumer demand for more sustainable and less environmentally harmful products. Over the years, for example, we have noted an increase in sales in alternative energy products such as gas geysers, cookers, heaters, solar lights and energy saving LED lights. Consumer-demand driven highlights in 2014 include increased sales in alternative energy products, Massmart can capitalise on this opportunity by expanding the range of such products, thus driving up sales, as we did in 2016 where Builders launched a new range of private label LED light bulbs which offer customers high value for money.	Increased demand for existing products/services	1 to 3 years	Direct	Likely	Medium	Given that consumer demands are complex, wide-ranging and highly variable the potential financial implications are difficult to quantify. However, an increased market share of only 1% could result in increased revenue of over ZAR900 million (based on 2016 revenue).	We manage consumer expectations through sustainable sourcing initiatives for example relating to seafood and energy efficient products and proactive communication to customers regarding our sustainability efforts in store, on the Massmart and individual brand websites, and in the annual report. Massmart also communicates newsworthy achievements through journalistic publications such as Engineering News and City News. In addition, all Massbuild private label products have since 2013 an Eco-wise consumer information panel. Builders introduced a private label LED light bulb which offers high value for money.	The cost associated with communicating with our customers is built into the Group's communication and marketing budget. Group Updates that detail Massmart's sustainability and climate change related initiatives cost an estimated ZAR3500 per update.

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	Fri 01 Jan 2010 - Fri 31 Dec 2010	15521.8
Scope 2 (location-based)	Fri 01 Jan 2010 - Fri 31 Dec 2010	297133.71
Scope 2 (market-based)	Fri 01 Jan 2010 - Fri 31 Dec 2010	0

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
Defra Voluntary Reporting Guidelines
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 Fourth Assessment Report (AR4 - 100 year)
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	IPCC Fourth Assessment Report (AR4 - 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
Diesel/Gas oil	2.67620	metric tonnes CO2e per liter	DEFRA 2016

Further Information

Only location based scope 2 emissions were include in the base year. Market based scope 2 emissions are therefore submitted as "0". Although MM does have some market based scope 2 emissions in the reporting year, location-based result has been used as a proxy since a market- based result cannot be calculated for the base year. Please refer to the attached list of emission factors for all scope 1 and scope 2 emission factors used in our calculations.

Attachments

https://www.cdp.net/sites/2017/20/11420/Climate Change 2017/Shared Documents/Attachments/ClimateChange2017/CC7.EmissionsMethodology/MM_Emission_Factor_2017.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

75113

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 no operations where we are able to access electricity supplier emissions factors or residual emissions factors and 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
468879	0	We have responded as "0" to market based emissions, as per our answer to section cc8.3 above.

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
Stationary Fuel emissions excluded for all Rhino Stores. This accounts for 19 out of 431 stores or 47,693 m2 out of 2,461,392m2 of total GLA (less than 2%)	Emissions are not evaluated	No emissions excluded	No emissions excluded	Activity Data was not available for calculations. It is estimated that these emissions would represent less than 2% of Massmart Group Stationary Fuel Emissions, which would be far less than 1% of total scope 1 and scope 2 emissions, and are therefore not material
Fugitive emissions for all Rhino Stores. This accounts for 19 out of 431 stores or 47,693 m2 out of 2,461,392m2 of total GLA (less than 2%)	Emissions are not evaluated	No emissions excluded	No emissions excluded	Activity Data was not available for calculations. It is estimated that these emissions would represent less than 2% of Massmart Group Stationary Fuel Emissions, which would be far less than 1% of total scope 1 and scope 2 emissions, and are therefore not material

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 10% but less than or equal to 20%	Data Gaps Extrapolation Data Management	Data Management & Data Gaps: For some stores/facilities systems are not yet in place to collect generator fuel usage and refrigerant gas loss data. Consumption of mobile and stationary fuels could not always be separated. Extrapolation: Where possible, estimation was used to fill data gaps.
Scope 2 (location-based)	More than 10% but less than or equal to 20%	Data Gaps Extrapolation Metering/ Measurement Constraints Data Management	Data Management & Data Gaps: For some stores/facilities systems are not yet in place to record monthly kWh consumption. Extrapolation: Estimation was used for data gaps and/or unreliable data. Metering/ Measurement constraints: Online metering is not yet installed in all stores/facilities.
Scope 2 (market-based)	More than 10% but less than or equal to 20%	Data Gaps Extrapolation Metering/ Measurement Constraints Data Management	Data Management & Data Gaps: For some stores/facilities systems are not yet in place to record monthly kWh consumption. Extrapolation: Estimation was used for data gaps and/or unreliable data. Metering/ Measurement constraints: Online metering is not yet installed in all stores/facilities.

CC8.6
Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

Third party verification or assurance process in place

CC8.6a
Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/20/11420/Climate Change 2017/Shared Documents/Attachments/CC8.6a/Massmart FY16 Verification Statement_20170607.pdf	Verification Standard - Introduction (Page 1) Verified Emissions - GHG Assertion (Page 1) Specific Exclusions - Specific Exclusions from Reporting Boundary (Page 2) Qualifications - Final Verifier Opinion and Qualifications (Page 3)	ISO14064-3	100

CC8.7
Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

Third party verification or assurance process in place

CC8.7a
Please provide further details of the verification/assurance undertaken for your location-based and/or market-based Scope 2 emissions, and attach the relevant statements

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Location-based	Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/20/11420/Climate Change 2017/Shared Documents/Attachments/CC8.7a/Massmart FY16 Verification Statement_20170607.pdf	Verification Standard - Introduction (Page 1) Verified Emissions - GHG Assertion (Page 1) Specific Exclusions - Specific Exclusions from Reporting Boundary (Page 2) Qualifications - Final Verifier Opinion and Qualifications (Page 3)	ISO14064-3	100

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
Year on year change in emissions (Scope 2)	Electricity consumption for 2015 was verified by an independent 3rd party. A different independent 3rd party verified the 2016 results, and also verified change in electricity consumption between the two years based on the fact that 2015 data was independently 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
South Africa	70609
Africa	4504

CC9.2
Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division
By activity

CC9.2a
Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)
Massbuild	3854
Masscash	22584
Massdiscounters	28744
Masswarehouse	18420
Massmart Services	1511

CC9.2d
Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)

Company-owned vehicles and mobile equipment	25860
Stationary Fuels (Generators)	4320
Fugitive Emissions (HFCs/PFCs)	44933
Fugitive Emissions (non-Kyoto gases)	11336

Further Information

We operate in Botswana, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Swaziland, Tanzania, Uganda and Zambia. However, for reporting purposes we disclose as per our market areas - South Africa and Africa (which includes all of these countries collectively) only. Please note: Values provided for CC 9.1 and 9.2a exclude non-Kyoto gasses as per the guidance provided by the GHG protocol. We do however measure these gasses as they are considered direct emissions and these have been reported under CC9.2d as Fugitive Emissions from non-Kyoto sources (11336 tonnes CO2e).

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)
South Africa	431609	0	431609	0
Africa	37270		37270	

CC10.2
Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division
By activity

CC10.2a
Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Massbuild	48297	0
Masscash	124458	0
Massdiscounters	180663	0
Masswarehouse	102108	0
Massmart Services	13353	0

CC10.2c
Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Purchased Electricity	468879	0

Further Information

We operate in Botswana, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Swaziland, Tanzania, Uganda and Zambia. However, for reporting purposes we disclose as per our market areas - South Africa and Africa (which includes all of these countries collectively) only. Massmart does not have market based scope 2 emissions, and has therefore reported these as zero in the tables above, due to the lack of clarity in the CDP guidance document.

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

116836

CC11.3a
Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Diesel/Gas oil	87514
Motor gasoline	28982
Liquefied petroleum gas (LPG)	340

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
Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company	589	0	On site third party solar installation. All energy is consumed onsite. An emission factor was not available from the third party companies and an emission factor of 0 has been assumed.

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
469468	469468	0	0	589	Apart from location based electricity consumption form national grids, Massmart currently purchases renewable energy generated from solar PV at two sites. This energy is supplied by an onsite third party.

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	3	Decrease	Massmart has the strategy imperative of increasing its operating efficiency. As per this objective, Massmart is driving to reduce its electricity consumption, and has embarked on a range of energy efficiency and renewable energy programmes (as outlined in question 3.3) to achieve this objective. Although Massmart grew organically by 6%, electricity (and emissions from electricity) consumption increased by only 2.5%. FY2016 scope 2 emissions equated to 468879 tonnes CO2e, and FY2015 Scope 2 emissions equated to 456024 tonnes CO2e. our calculation of a 3.2% reduction is based on the following equation: [468879-(456024*1.06)]/456024
Divestment	0	No change	There have been no divestments during the reporting period.
Acquisitions	0	No change	There have been no acquisitions during the reporting period.
Mergers	0	No change	There have been no mergers during the reporting period.
Change in output	6	Increase	Organic growth resulted in an overall increase of 6% in total GLA across all Massmart operations.
Change in methodology	0	No change	No change in methodology occurred
Change in boundary	0	No change	No change in boundary occurred (other than normal organic growth)
Change in physical operating conditions	4	Increase	Some of Massmart divisions (specifically Game, Makro and Dion Wired) has been on a path of transforming operations towards a more intensive food-based retail model. This has resulted in an increase in refrigerant gas usage. Emissions from fugitive emissions increased.
Unidentified	0	No change	no other changes
Other	0	No change	no other changes

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
0.000005962	metric tonnes CO2e	91250000000	Location-based	1	Increase	Although revenue increased 7.7%, scope 1 and scope 2 emissions increased 8.8%, resulting in an overall increase in emissions intensity of 1%. The main reason for the increase in emissions intensity is due to the fact that Massmart is transitioning many of its traditional retailers into a more energy intensive food retail space. Emissions from refrigerant gases increased by an additional 4% (after taking organic growth into account).

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
0.2132	metric tonnes CO2e	square meter	2551431	Location-based	2.8	Increase	Although GLA (square meters) increased by 6%, scope 1 and scope 2 emissions increased 8.8%, resulting in an overall increase in emissions intensity of 1%. The main reason for the increase in emissions intensity is due to the fact that Massmart is transitioning many of its traditional retailers into a more energy intensive food retail space. Emissions from refrigerant gasses increased by an additional 4% (after taking organic growth into account).
0.183	metric tonnes CO2e	square meter	2551431	Location-based	3	Decrease	This intensity metric is a measure of our scope 2 emissions only per GLA, across the group. Although GLA (square meters) increased by 6%, scope 2 emissions increased 2.8%, resulting in an overall decrease in emissions intensity of 3%. The main reason for the decrease in emissions intensity is due to the fact that Massmart has embarked on an energy efficiency and renewable energy drive.

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

Even though the implementation of the South African Carbon Tax is being slated to be implemented/completed in 2017, Massmart does not expect to be liable for any taxes and thus will not be required to participate in the proposed Carbon Trading Scheme whereby companies are able to reduce up to 5% of the taxable emission through the purchase of approved credits

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, calculated	2859	Although the emission sources under this category include packaging materials, water consumption, and embedded emissions in all products from suppliers; Given the inherent complexity of calculating these emissions for the purposes of these calculation only standard A4 and A3 paper and water consumption was included in this assessment. Emisison factors for paper were from Environmental Paper Network figures for South Africa. It was assumed that one ream of A4 paper weighs 2.5 kg. Water consumption data was provided in Rands spent and was thus estimated according to the Rand Water tariffs (average for the year and region-specific). The Corporate Value Chain (Scope 3) Accounting and Reporting Standard was also used to guide calculations. Emissions from paper consumption accounts for 1603 tonnes CO2e, and emissions associated with water consumption account for 1256 tonnes CO2e. Emission factor from water consumption was based on a study by Friedrich, E. & Trois, C. (2013) - (0.925 kgCO2e/kL)	100.00%	Purchased goods and services have been classified as Massmart's water consumption and paper usage.
Capital goods	Not relevant, explanation provided	0	N/A	0.00%	Massmart does not manufacture any products directly, and capital goods are therefore not considered to be a material scope 3 emission source.

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
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, not yet calculated	0	N/A	0.00%	Massmart does use a significant amount of energy, specifically electricity (scope 2). Currently, no accepted emission factors are available for transmission and distribution losses in South Africa, and Massmart does not include these in the emissions inventory. These emissions may be included in future inventories.
Upstream transportation and distribution	Relevant, calculated	9753	Data was disaggregated into Road Freight, Air Freight and Sea Freight. For all sea freight consignments the average container vessel size was 4000 TEU, and so the emission factor for container vessel between 3000 4999 TEU was used. For all local land (road) freight it was stated that the emission factor for a 3.5 33 tonne articulated truck was used for all estimations. The tonne.km method of emissions estimation was used for all three freight modes of travel. The Corporate Value Chain (Scope 3) Accounting and Reporting Standard was also used to guide calculations. DEFRA 2016 emission factors were used	100.00%	Upstream transportation and distribution has been classified as Massmart's road, air and sea freight.
Waste generated in operations	Relevant, calculated	31599	Waste was reported under Recyclable waste and non-recyclable waste (waste to landfill). All density values were calculated using a tool developed by Victoria State of Australia. The Corporate Value Chain (Scope 3) Accounting and Reporting Standard was also used to guide calculations.	100.00%	Waste generated is primarily split into two categories recyclable waste and waste to landfill. Further separation of recyclable waste is made according to the following (when no such data exists): paper/cardboard (80%), mixed plastics (18%), metal (1%) and glass (1%).
Business travel	Relevant, calculated	7150	Only flights and car hire were included. Car Hire: Data was provided by Bidvest, Europcar and Avis. Avis, Bidvest and Europcar provided the actual emissions in grams per kilometer travelled per car type. This data was used instead of the various Defra (2016) emission factors, as it is more accurate. A radiative forcing index (RFI) was applied to the emission factors of flights. This means overall effects, such as contrails, are included in the emission factors. Included was both the 8% distance uplift and a 90% increase in the CO2 factor to account for radiative forcing (the influence of the other climate change effects of aviation (water vapour, contrails) were included in the emission factor. It is important to note that radiative forcing was not included in any previous reporting periods, and this many account for a significant increase in flight emissions. All flights with a distance of up 463 km were classified as Domestic flights. Those between 464 km and 3700 km were classified as International Short Haul, and all flights with a distance greater than 3700 km were classified as International Long Haul, in accordance with DEFRA. Flights were further grouped according to class travel where available. The Corporate Value Chain (Scope 3) Accounting and Reporting Standard was also used to guide calculations. DEFRA 2016 emissions factors.	100.00%	Business travel has been classified as Massmart staff car hire and flight travel.
Employee commuting	Not relevant, explanation provided	0	N/A	0.00%	This has been excluded from our total emissions, due to both the complexity inherent in calculating employee commuting emissions and given that it has not been deemed material in the context of Massmart’s carbon footprint. Additionally, all company owned vehicles used for staff commuting have been included in our Scope 1 emissions.

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
Upstream leased assets	Not relevant, explanation provided	0	N/A	0.00%	Upstream leased assets, e.g. Office space has been accounted for and reported under Scope 1 and Scope 2 emissions.
Downstream transportation and distribution	Not evaluated	0	N/A	0.00%	Emissions from leased vehicles utilized for the delivery of sold products to customers was reported under Scope 1 and Scope 3 “Downstream leased assets” depending on the type of lease agreement stores have with fleet management agencies. Due the complexity of separating this data it has not been calculated to customer specific deliveries.
Processing of sold products	Not relevant, explanation provided	0	N/A	0.00%	Massmart is a business to consumer retail outlet, and although there may be emissions associated with the use of some of our products, our products are not deemed for any additional processing, and so this category of emissions is not relevant to us.
Use of sold products	Relevant, not yet calculated	0		0.00%	Emissions from the use of electricity consumed by appliances purchased and utilised by our customers has not been included in our calculation, as the accuracy of such a calculation would be questionable.
End of life treatment of sold products	Relevant, calculated	143	E-waste (Electronic Waste) generated as a result of e-consumer waste collection and disposal by Desco Electronic Recyclers (DESCO) at 19 of our Makro stores. The metric tonnes of CO2e were provided by Desco. The Corporate Value Chain (Scope 3) Accounting and Reporting Standard was also used to guide calculations.	100.00%	End of life treatment of sold products has been classified as electronic waste (e-waste). For example: the following items, among others, would be classified as e-waste; television sets, washing machines and fridges.
Downstream leased assets	Relevant, calculated	28918	Where data was provided in kilometres driven the tonne.km method was used (tonnes of freight multiplied by distance covered in kilometres) for a medium sized rigid truck. Distance-based emission factor from DEFRA, assuming 50% load, were used. Where data was provided in litres of diesel consumed the volume method was used to calculate emissions. Where litres were of diesel was provided the volume method was used to calculate emissions. The Corporate Value Chain (Scope 3) Accounting and Reporting Standard was also used to guide calculations.	100.00%	Downstream leased assets were classified as delivery vehicles used by but not owned or controlled by Massmart.

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
Franchises	Not relevant, explanation provided	0	N/A	0.00%	Massmart does not have any franchisees
Investments	Not relevant, explanation provided	0	N/A	0.00%	Although Massmart has some additional investments, these were not quantified as they were deemed not material in the context of Massmart's overall carbon footprint.
Other (upstream)	Not relevant, explanation provided	0	N/A	0.00%	N/A
Other (downstream)	Not relevant, explanation provided	0	N/A	0.00%	N/A

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
Upstream transportation & distribution	Emissions reduction activities	44	Decrease	Massmart has been consolidating logistics throughout the business. We started this process last year, with the intention of having divisions share logistics, in an attempt to increase logistics efficiency. This observed may be as a result of this.
Downstream leased assets	Emissions reduction activities	26	Decrease	As above, Massmart has been consolidating logistics and use of contractor trucks throughout the business. We started this process last year, with the intention of having divisions share logistics and contracted vehicles, in an attempt to increase efficiency.
Business travel	Unidentified	16	Increase	Business travel fluctuates year on year depending on annual circumstances. This increase may be a result of an increase in business activity associated with organic growth.
Waste generated in operations	Emissions reduction activities	1	Increase	The very slight increase in absolute emissions actually translates into reductions of waste per square meter, or per store. This is a result of Massmart proceeding with the effective waste management programme, in an attempt to divert as much waste form landfill as possible.
Purchased goods & services	Change in methodology	61	Increase	Change in emission factors when calculating emissions from water, as well as having a more complete list of stores providing water data. Paper methodology also changed, as in past years some omissions were identified due to the methodology and assumptions applied in the previous years. This year's calculations are therefore more accurate.

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

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
Active engagement	593	45%	Massmart conducts an annual Supplier Environmental Survey to track supplier environmental performance. Among other environmental indicators, the survey addresses issues such as; climate change, energy and water consumption at manufacturing facilities, logistics efficiency, environmental attributes of product packaging and the environmental attributes of products supplied to Massmart. A total of 385 suppliers were contacted as part of the last assessment that was circulated of which 330 responses were analysed. Results from the 2016 survey indicate for example, that of those suppliers who responded to the survey, over 58% indicate that they actively consider energy efficiency in their operations and 33.7% have invested in energy saving practices and technologies.

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
Brian Leroni	Group Corporate Affairs Executive	Board/Executive board

Further Information

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