Module: Introduction

Page: Introduction

CC0.1

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

Vodacom Group Limited (herein after referred to as Vodacom) is an African unified communications provider, providing a wide range of services, including mobile voice, messaging, data and converged services to over 61 million customers.

From its roots in South Africa, Vodacom has grown its operations to include networks in Tanzania, the Democratic Republic of Congo ('DRC'), Mozambique and Lesotho, and offers business managed services to enterprises in over 40 African countries.

Vodacom is majority owned by Vodafone and was listed on the South African Stock Exchange (JSE) on 18 May 2009. Its head office is in Johannesburg, South Africa.

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
Tue 01 Apr 2014 - Tue 31 Mar 2015

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

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, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.

If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the 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. If you wish to view the questions first, please see https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

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

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

CC1.1a

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

(i) The job title of the individual or name of the committee
Board appointed Social and Ethics Committee.

ii) A description of their/its position in the corporate structure
The Board appointed a Social and Ethics Committee, chaired by an independent non-executive director, who has the responsibility for good corporate citizenship which includes corporate social responsibility, ethical behaviour and managing the environmental impacts of the group, including climate change.

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
Corporate executive team	Monetary reward	Emissions reduction target	The key performance indicators for responsibility towards natural resources include greenhouse gas reduction targets, which are included in executive performance scorecards. The achievement of the targets positively impacts bonuses or discretionary pay; hence there exists a strong incentive to reach the emission reduction targets.
Business unit managers	Monetary reward	Emissions reduction target	The key performance indicators for responsibility towards natural resources include greenhouse gas reduction targets, which are included in employee's performance scorecards. The achievement of the targets positively impacts employee's bonuses or discretionary pay; hence there exists a strong incentive to reach the emission reduction targets.
Environment/Sustainability managers	Monetary reward	Emissions reduction target	The key performance indicators for responsibility towards natural resources include greenhouse gas reduction targets, which are included in employee's performance scorecards. The achievement of the targets positively impacts employee's bonuses or discretionary pay; hence there exists a strong incentive to reach the emission reduction targets.
All employees	Monetary reward	Efficiency target	All employees whose direct or indirect line function responsibilities have environmental impacts are empowered to manage environmental issues as integral part of their job and to establish systems that allow for employee training to ensure that they are up to date with the latest information regarding impacts and greenhouse gas reduction targets. The responsibility and accountability for environmental performance affects their performance scorecards, which in turn affect bonuses or discretionary pay.

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	Risk and control procedures are implemented in each operation of Vodacom, i.e. South Africa, Mozambique, Lesotho, Tanzania the DRC.	3 to 6 years	

CC2.1b

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

At company level the Directors consider risks and opportunities when they formulate strategy, approve budgets and monitor progress against business plans. The process is overseen by the Risk Management Committees (RMC) in each operation, which is chaired by the respective Managing Directors and include the Executive Committee members in each country.

An Enterprise Risk Management Framework was developed to provide context and guide the identification, analysis, evaluation, treatment, communication and ongoing monitoring of risks in all business units. During 2014 the risk management framework was updated to align with ISO 31000 and other risk management best practices and is being rolled out across the Group.

The Audit, Risk and Compliance Committee (ARC Committee) is responsible for monitoring the risk management function and processes, and assessing significant risks facing the Group. The Group Risk Management Committee (GRMC) is responsible for managing risk and implementing appropriate controls. It is chaired by the Chief Risk Officer and comprises the Group Executive Committee members and Managing Directors of each operating company. The GRMC also acts as the Risk Management Committee for Vodacom South Africa.

At asset level risks and opportunities are identified and managed at four different levels within the organisation, namely at project, process, operational and tactical levels. These risks and opportunities are periodically reviewed and updated. A filtering and reporting process ensures that the relevant risk items are reported to the ARC Committee.

The day-to-day responsibility for the management of enterprise risk lies with the head of the business unit or support function, which conducts the activity which gives rise to the risk. Line management is guided and assisted by the Risk Group, which reports to the Chief Risk Officer.

CC2.1c

How do you prioritize the risks and opportunities identified?

Risks and opportunities are prioritized through the following process:
1 - Define the risks
Various levels of management in each operating company define risks at project, process, operational, tactical and strategic levels.
2 - Assess their impact
Risks are assessed based on their potential impact on the operation (customers, business systems and employees), financial position and reputation (stakeholders and brand). At level 1 the risk impact is seen as insignificant and at level 5 as catastrophic. For example, if more than half of the customers would be impacted by the risk, the impact would be classified as level 5.
3 - Assess their likelihood
Risks are assessed based on the likelihood of them happening after taking into account the controls that are already in place to mitigate them. A scale from 1 to 5 is used to assess the likelihood of the risk, where 1 is “never” and 5 is “almost certain”. When a risk is rated with a likelihood as “5”, it means the controls in place will not prevent the risk from happening due to factors outside our control or the control effectiveness is poor.
4 - Classify the risk
Risks are classified as critical, high, medium and low based on the impact and likelihood score. Where a risk has a high likelihood of occurring and the impact on operations, financial position or reputation is also high it would be considered critical.
5 - Treat the risk
Management reviews all critical and high risks to determine which of these need additional treatment to reduce the risk to a medium or low. One such type treatment is the implementation of additional controls.
6 - Monitor and report
All risks are captured on the newly implemented risk management system. Risks are monitored continually and reviewed every six months. Quarterly risk reports are provided to the GRMC, the ARC Committee and the Board.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

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) To guide the integration of sustainability issues, including climate change, into business strategy, Vodacom has undertaken a structured process to identify the most material sustainability issues, distil them based on the importance of the issues to the business strategy and key stakeholders, and present them in the form of strategic sustainability priorities that represent risks and opportunities for the business.

The resultant Sustainability Strategy document is a living document that is constantly updated to reflect the most pressing issues in the external environment that can affect business.

The process of developing the strategy involved four key steps, namely; identifying the inputs that would feed into the strategy, collecting data from the various sources that represent the different inputs, analysing the data using a set of defined criteria, and developing a set of strategic sustainability priorities.

Identifying the inputs that would feed into the strategy: various tools and frameworks that guide the governance of overall business were identified so as to start from the same point of departure as the business strategy. Four key sources of inputs emerged as the key building blocks; the external business environment, the issues that stakeholders consider most material to them, the current business strategy and the principles of the Enterprise Risk Management (ERM) process.

Collecting data from the various sources that represent the different inputs: the process involved consulting widely from a number of different sources to gather the data that would form the basis for defining the sustainability priorities. This included sources external to the company, such as an extensive media search and a review of local and international thought leadership on business and sustainability. Other sources included internal documents, such as Vodacom's integrated report and corresponding supplementary reports.

Analysing the data using a set of defined criteria: the bottom-up process of data collection produced a 'long list' of issues that could potentially be material to the company. Subsequently, a structured process was used to analyse the data and distil the most critical issues using a materiality filter. This filter was made up of three primary components that made up the criteria against which each of the long-list of issues were analysed to determine their relevance. The components

included; relevance of the issue(s) to the sector, importance to stakeholders and impact on the business strategy.

Developing a set of strategic sustainability priorities: the distilling process produced a set of ten strategic sustainability priorities. These priorities represent the actual risks or opportunities presented by the sustainability issues and explain the relevance of the issue to stakeholders, the impact on business and current and planned strategic responses.

The Sustainability Strategy document includes a short section on 'strategy implementation' that provides a summary of the process by which the strategy is operationalized in the business.

ii) The environmental issues influencing Vodacom's strategy include determining the carbon footprint, energy efficiency and alternative energy usage and resource utilization including water consumption.

To assist with tracking progress Vodacom now participates in the Group reporting process where electricity, diesel, fuel cells and water consumption are tracked systematically and reported to its majority shareholder, Vodafone, at six monthly intervals.

iii) Vodacom in South Africa has a corporate environmental policy which requires that resource consumption is minimised. The implementation of this policy is delegated to the relevant divisions that initiate their own energy efficiency management plans and activities relating to the network and operations, facilities and data centres.

Short term strategy influenced by climate change relates to the setting of targets to reduce Vodacom's carbon emissions by 5% per base station site per year. This will be achieved by investing in new technologies, free cooling, and using alternative energy sources such as generator-battery power hybrid units, and wind and solar generation for remote base station sites.

iv) Long term strategy changes relate to deploying the technologies that Vodacom and its suppliers have developed which now makes it possible to build a site powered by renewable energy that makes economic sense. Coupled with the environmental benefits of reduced diesel usage and subsequent reduced emissions, green power solutions provide a promising opportunity for operators. Further, this will allow Vodacom to service undeveloped areas not on the electricity grid, with the bare minimum environmental footprint.

Another long term strategy relates to the renewal of the radio access network (RAN) to add single RAN (SRAN) and software defined radio (SDR) technologies to the network as well as fibre-optic cables and high speed IP-microwave transmission at base stations. SRAN allows the accommodation of 2G, 3G and LTE on the same base station and together with SDR the network can be upgraded to newer technologies such as 4G or LTE. The RAN renewal programme improves energy efficiency, drives down operational cost and helps to expand data coverage.

v) Vodacom believes that strategic advantage can be obtained through providing technological innovative solutions that can reduce operating costs from fuel and electricity consumption, thereby reducing carbon emissions and Vodacom's impact on the environment while providing products and services that help customers to live and work more efficiently and flexibly. Its technological solutions have the potential to replace traditional, carbon-intensive methods of doing business and include cloud computing, video conferencing and machine-to-machine transactions.

vi) During 2014 Vodacom installed a heating, ventilation and air conditioning ('HVAC') plant that is powered using excess energy from the photovoltaic array at the Century City office. This project aims to reduce electricity consumption by about 52 166 kWh per month with an annual cost saving of approximately R890 000.

Vodacom established a Sustainability Strategy during 2013 that describes its sustainability priorities and strategic response to the issues. It also sets the basis for defining how to measure sustainability performance. In line with this strategy Vodacom's network team is planning to implement free cooling at approximately 400

sites, which substantially reduces the energy consumed by air conditioners.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price of carbon?

No, but we anticipate doing so in the next 2 years

CC2.2d

Please provide details and examples of how your company uses an internal price of carbon

CC2.3

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

Trade associations

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution

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?
World Wide fund for Nature (WWF)	Consistent	Globally, the United Nations Food and Agricultural Organization (FAO) estimates that approximately 85% of the world's fish stocks are either overexploited or exploited to their maximum. The WWF Fisheries: Facts and Trends South Africa report suggests that we are in a relatively similar position, with almost 50% of our marine resources fully exploited. A further 15% of marine resources are overexploited, including important commercial species such as West coast rock lobster and Indian Ocean yellowfin tuna populations. Of equal concern is the number of species in which the current stock status is uncertain. The report also highlights the fact that given the state of many of South Africa's fisheries resource (in particular those found inshore), it is unlikely that job creation can take place in the short-term without progressive rebuilding strategies. "The immediate goal of fisheries management should be on job security with job creation being a longer-term goal," the report states.	Vodacom tries to help build a sustainable future by developing and delivering transformational solutions that enable positive economic, social and environmental outcomes. Vodacom, together with the World Wide Fund ('WWF') for Nature, has provided funding to develop and operationalise a basic integrated Information Monitoring System ('IMS') with a mobile application. The output of this project will be a web-based database, developed in collaboration with Vodacom IT technicians and University of Cape Town-identified ('UCT') partners, with basic reporting functions based on the current paper-based Department of Agriculture, Forestry and Fisheries ('DAFF') small-scale fisheries data monitoring system. For monitoring purposes the data will include: • Catch data (species, volumes, geographic location, catch method, date, fish identity); • List of permit holders in each fishing community; • Fisher details per permit holder; and • Socioeconomic and livelihood data per permit holder (sale and pricing records).

CC2.3d

Do you publicly disclose a list of all the research organizations that you fund?

CC2.3e

Do you fund any research organizations to produce or disseminate public work on climate change?

CC2.3f

Please describe the work and how it aligns with your own strategy on climate change

CC2.3g

Please provide details of the other engagement activities that you undertake

CC2.3h

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?

Vodacom has specialist regulatory and government relations teams who engage with Government, Regulators, and Business Partners such as Business Unity South Africa (BUSA) and the National Business Initiative (NBI) on policy issues impacting the business including climate change. They participate actively through written submissions and formal hearings on legislative and regulatory changes.

CC2.3i

Please explain why you do not engage with policy makers

CC2.4

Would your organization's board of directors support an international agreement between governments on climate change, which seeks to limit global temperature rise to under two degree Celsius from pre-industrial levels in line with IPCC scenarios such as RCP2.6?

Yes

CC2.4a

Please describe your board's position on what an effective agreement would mean for your organization and activities that you are undertaking to help deliver this agreement at the 2015 United Nations Climate Change Conference in Paris (COP 21)

Vodacom supports a transition to a low carbon future. As a unified communications provider we are uniquely positioned to enable that transition through the use of products and services that have that ability to reduce carbon emissions and replace traditional, carbon-intense ways of doing business.

i) An effective agreement at COP21 should entail a global commitment to reducing greenhouse gas emissions to ensure the stabilisation of global temperatures. To achieve this and move away from fossil fuel economies, investment in renewable and alternate energy sources is required. Business and Governments need to collaborate and create an enabling environment to do this.

ii) Vodacom Group remains supportive of climate change mitigation and continues to look at various renewable and alternate energy solutions to reduce our reliance on grid power.

iii) Through our membership with the NBI and WWF we support the delivery of this agreement.

Further Information

Page: CC3. Targets and Initiatives

CC3.1

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

Intensity target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment

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	Target year	Comment
Int1	Scope 1+2	100%	5%	Other: metric tonnes CO2e per base station site	2014	35.70	2015	This target relates to fuel and electricity consumption per base station site taking growth into account.

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	7.71	No change	0	The target relates to Scopes 1&2 only.

CC3.1d

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

ID	% complete (time)	% complete (emissions)	Comment
Int1	100%	100%	Vodacom achieved a 10.09% reduction, which is greater than the target of 5% per base station site per year.

CC3.1e

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

CC3.2

Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

CC3.2a

Please provide details of how the use of your goods and/or services directly enable GHG emissions to be avoided by a third party

i) How the emissions are/were avoided
Examples of how Scope 1 & 2 emissions are being avoided by third parties using Vodacom technology:
SMART METERING
Smart meters give end users detailed, real-time information about their daily electricity use which could result in behaviour changes and reductions in energy consumption, Scope 2 carbon emissions and cost. ASB Bank in New Zealand collected real-time data via M2M connections to monitor energy consumption in its network of branches to target energy efficiency initiatives.

SMART LOGISTICS
Remote tracking systems: Wireless, GPRS-enabled vehicle tracking devices feed data about each vehicle's position and the latest traffic information into a centralised fleet management system. This then generates routes that cover the shortest distance and alerts drivers about optimum driving speeds that result in reduced fuel consumption, Scope 1 carbon emissions and cost.

SMART WORKING
Vodacom offers products that contribute to saving energy and reducing CO2 emissions for clients by working differently from the traditional, carbon-intensive methods of doing business.
Vodacom launched cloud solutions five years ago and tremendous growth lead to the development of a Cloud Monitor for Virtual Environments to allow the user's in-house administrators to monitor the complete virtual environment of server loads and generate customised reports. It also gives customers a view on performance, resource utilization and Scope 2 emissions of their workloads in each geographical location.

ii) An estimate of the amount of emissions avoided over time
In 2010 Vodacom's parent company, Vodafone, commissioned a carbon analysis to quantify the exact CO2e savings associated with a number of their solutions and services. The summarised findings of some of the case studies are as follows:
• Vodafone worked with TOMTOM and customer Zenith to implement a vehicle tracking and driver optimisation tool which enabled carbon savings of 600 tCO2e per annum from a 2011 baseline, representing a 28% decrease per lorry.
• Vodafone installed connected smart meters at 67 branches of ASB Bank in New Zealand where net CO2e savings of over 1,000 tonnes of CO2 per year were achieved as a result of better data management from the system. Over three years, the bank managed to reduce its energy consumption by 23% – equivalent to approximately £1,330,000.
• Around 1,500 buses in the Netherlands have been fitted with tracking devices provided by telematics solutions provider Sycada, which deliver real-time feedback on driver performance. These tracking devices, connected using Vodafone's M2M technology, are expected to improve fuel efficiency by more than 5% a year, saving the Connexxion transport group over £2 million.

iii) The methodology, assumptions, emission factors and global warming potentials used for your estimations
Methodology for calculating the impact of the solutions and services are based on the GeSI Assessment Methodology using Defra emission conversion factors.

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	1	
To be implemented*	1	1900
Implementation commenced*	1	5630
Implemented*	2	2722
Not to be implemented	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	Installed a HVAC ice plant that is powered using the excess energy generated by the solar photovoltaic array at the Century City office.	645	Scope 2	Voluntary	890000	4080000	4-10 years	16-20 years	
Process emissions reductions	Installed GERM software to remotely monitor the consumption of generators, reducing diesel consumption by up to 70% at 231 sites.	2077	Scope 1	Voluntary	840000	2095000	1-3 years	6-10 years	

CC3.3c

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

Method	Comment
Other	Financial optimization taking energy consumption into account. A key consideration in the RAN (Radio Access Network) equipment renewal programme is that every item of the existing radio network and core network is re-evaluated in terms of energy consumption and included in all decisions for roll-out and replacement. Upgrading the RAN will be according to available budgets, depreciation rates, asset write-offs and other business drivers including the energy consumption analysis.
Employee engagement	Employees are empowered to manage environmental issues as an integral part of their job and to investigate more efficient technology interventions to lower operational costs through energy efficiency.
Partnering with governments on	Vodacom makes use of the Eskom Demand Side Management (DSM) subsidies and rebates where available to help defray the capital costs of equipment and the NBI's Private Sector Energy Efficiency Project (PSEE) to leverage off the knowledge and skills of

Method	Comment
technology development	experts.

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

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
In mainstream financial reports in accordance with the CDSB Framework	Complete	Vodacom Integrated Annual Report 2015: pages 1 – 123	https://www.cdp.net/sites/2015/02/22902/Climate Change 2015/Shared Documents/Attachments/CC4.1/Vodacom Integrated Report 2015.pdf
In mainstream financial reports in accordance with the CDSB Framework	Complete	Vodacom Environmental Report 2015: pages 1 – 7	https://www.cdp.net/sites/2015/02/22902/Climate Change 2015/Shared Documents/Attachments/CC4.1/Vodacom Environmental Report 2015.pdf

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 2013 Tax Budget announced a delay in the introduction of a carbon tax at R120 per ton of CO2e above a basic tax-free threshold of 60 per cent, which is now to take effect from January 2016. It is planned that the	Increased operational cost	1 to 3 years	Direct	Very likely	Low	A carbon tax based on R120 per tCO2e increasing to R200 per tCO2e in 2020/2021 and calculated on Vodacom's current Scope 1 emissions above the 60% basic tax-free threshold	Vodacom has a Government and Stakeholder Relations department that actively engages with policy makers on issues that affect its business, including new legislation such as carbon taxes.	No direct costs are associated with government liaison other than staff salaries and the conversion to hybrid systems required a capital investment of

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	proposed tax will escalate by 10% per annum until December 2020 - the end of the first phase of implementation. Offsets of between 5 - 10% will allow emission-intensive and trade-exposed industries to invest in projects outside their normal operations to help reduce their carbon tax liabilities. This translates into an actual carbon-tax cap of around R48/ton at the start of 2016. From 2021, the five-year phase 2 would kick in, while follow-up phases could be explored at a later stage. The SA National Treasury released an updated carbon tax policy paper designed to help mitigate global climate change during May 2013 paper to allow for further consultation and commentary.						without taking into account additional allowances and offsets, is estimated to be an additional cost of around R2.5 million per annum for the first phase of the carbon tax scheme. The potential impact has been considered against the current operational spend of the company.	Vodacom provided input to the SA National Treasury Carbon Tax Policy Paper by the due date. Up to 6% of Vodacom's emissions relate to the consumption of diesel at base stations and in fleet vehicles. In order to reduce Scope 1 emissions off grid generators in South Africa are being converted to hybrid systems with deep cycle batteries to reduce diesel fuel consumption and extend the generator life by as much as four times. These actions are not expected to affect the likelihood or magnitude of the risk.	R25 million.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Should this carbon tax be levied after the tax-free basic threshold of 60% of Scope 1 GHG emissions before allowances and offsets, it will add additional costs to Vodacom's bottom line, which could impact on competitiveness.								
Emission reporting obligations	Currently there are no mandatory GHG reporting requirements in South Africa. However, the Minister of Environmental Affairs, has on 11 May 2015 published the Draft National Greenhouse Gas Emission Reporting Regulations and requested that written representations or objections be submitted within 60 days. The Regulations outline the requirements for	Increased operational cost	1 to 3 years	Direct	Very likely	Low	Additional cost relate to penalties for non-compliance to submit GHG inventories and data which is estimated to be capped at R1 000 000. However, there is no potential financial impact for Vodacom as current resources would be able to cope with the emissions reporting obligation.	Vodacom appointed external consultants to determine its organizational carbon footprint. The processes of obtaining the required data are continually refined to ensure accurate and consistent data capturing. During 2014 Vodacom had its Carbon Footprint Inventory verified by an independent third party to ensure it is free of material misstatements. These actions are	Costs of about R360 000 per annum have been incurred relating to the appointment of external consultants to compile the carbon footprint and disclosure thereof well as the external verification of the carbon inventory.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	mandatory reporting of emissions data for companies. In order to assess the carbon tax accurately, reporting of GHG emissions will be required together with verification of the reported emissions. This will place a financial compliance burden on Vodacom, while non-compliance could be met with penalties. Emission reporting could lead to more stringent licence to operate criteria, e.g. for inclusion in the JSE Sustainability Index.							not expected to affect the likelihood or magnitude of the risk.	
Fuel/energy taxes and regulations	The IPR 2010 is a 20 year electricity capacity plan to determine South Africa's electricity demand, how this demand will be supplied (e.g. by coal, renewables or nuclear) and what it will cost. The 3.5c/kWh levy that is	Increased operational cost	1 to 3 years	Direct	Very likely	Low	The 2c/kWh increase in the non-renewable energy levy will increase operational expenses by an additional approx. R8 million per annum whereas repealing the	In South Africa approximately 92% of Vodacom's CO2 emissions are generated from electricity consumed. The network consumes approximately 75% of electricity whereas the data centres and offices	Capital investment of about R4 million was spent on the solar powered HVAC plant.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	charged for using non-renewable energy sources to cover generation costs for renewable energy was increased to 5.5c/kWh during the 2015 Budget Speech. It was also announced that this additional 2c/kWh would be withdrawn when the current electricity shortage was over. However, the risk exists that this levy would not be withdrawn or could be increased in the future. In order to assist SA's national power supplier (ESKOM) with electricity supply, demand-side management schemes are being rolled out to lower power consumption. Anticipated legislation relating to the Power Conservation Programme (PCP) could introduce						5.5c/kWh levy would reduce electricity costs in South Africa by approx. R22 million per annum.	consume about 11 & 14% respectively. Energy savings initiatives therefore focus on network infrastructure, but small changes in buildings and operations can have a positive effect that over time makes a big difference. In order to reduce electricity consumption and manage costs Vodacom has in 2014 installed a heating, ventilation and air conditioning ('HVAC') plant that is powered using excess energy from the photovoltaic array at the Century City office. This project resulted in electricity consumption savings of about 625 MWhs per annum and cost savings that will reduce the	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	penalties where the required power reduction is not achieved. A constant supply of energy is critical to Vodacom's operations and network infrastructure. Electricity outages could disrupt operations and paying levies or penalties for energy consumption will affect profitability, both current operations and proposed expansion projects in South Africa.							magnitude of the risk.	

CC5.1b

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

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	Vodacom has installed free cooling technology at its base stations in Mozambique, Lesotho, Tanzania and the DRC and is looking to expand free cooling technology to South Africa. Free cooling is when electronic air-conditioning is supplemented with fresh air to reduce the temperatures of equipment resulting in about 45% reduction in energy consumption. Higher temperatures will result in lesser usage of free cooling with the resultant increase in electrical energy consumed. This could make the	Increased operational cost	3 to 6 years	Direct	About as likely as not	Low	To date the equipment was installed at a capital cost of approximately R81 million. With higher average temperatures the energy and cost savings could reduce and the equipment may become obsolete. Should the energy savings reduce by 50%, then the operational expenses could increase by approximately R2.5 million per annum and a 10% redundancy rate of the equipment could result in a R8.1 million loss of capital invested.	Free cooling technology reduces the need for powered air-conditioning at base-stations by monitoring the external air temperature and when possible shuts down air-conditioning units to use ambient air to do the cooling whenever the outside temperature falls below 20°C. To manage an increase in temperatures Vodacom is upgrading its network with components that can withstand higher temperatures and is installing individual battery coolers rather than cooling the	Installing an additional 400 free cooling units with power metering at base stations will require capital investment of approximately R8 million.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	free cooling equipment obsolete as well as increase the maintenance and replacement intervals on cooling equipment resulting in higher operational cost.							whole facility. Technicians are working on free cooling systems that will work even when the outside temperature is 30°C. During 2009 - 2013, 3 383 free-cooling units were installed at base stations to help reduce air-conditioning use and another 400 free cooling units are planned to be installed. The technology reduced air-conditioning run-time and energy consumption by up to 45% as well as extended maintenance and replacement intervals on cooling equipment. For additional cost	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								and carbon emission savings at base stations Vodacom is investigating maintenance free filtration systems that employ patented technology to achieve a high level of filtration together with self-cleaning capability. A high-quality fan blows filtered external air into the cabin, to provide clean cooling with low power usage. The controller unit monitors the cabin temperature and varies the fan speed (or turns it off) to ensure the required temperature range is adhered to. These actions	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								will reduce the magnitude of the risk.	
Change in mean (average) precipitation	Currently unreliable grid power exists in Mozambique, Lesotho, DRC and Tanzania. The mobile network base stations therefore rely extensively on diesel generators for electricity. The huge distances between the sites and the challenging terrain makes the logistics of refuelling and maintenance costly with today's infrastructure. With more frequent rainfall the infrastructure could be negatively impacted making access	Reduction/disruption in production capacity	1 to 3 years	Direct	About as likely as not	Low-medium	A shortage of diesel at the base stations could lead to the non-availability of the network and negatively impact customer usage resulting in a loss of profit. A cumulative one day shutdown of operations could result in loss of revenue of approx. R43 million based on current revenue levels in Mozambique, Lesotho, DRC and Tanzania.	Vodacom is actively looking at deploying renewable and alternate energy technologies to places that require off-grid, low-cost base stations and to reduce the reliance on diesel consumption. In Lesotho about 22% (53 out of 245) of base stations are now powered by solar power. These base stations do not use diesel generators or power from the national grid. They require less maintenance and monitoring which greatly reduces	The installation of the GERM software required a capital investment of approximately R2.1 million.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	to refuel and maintain the base station generators difficult. This could result in a disruption of operations and the non-availability of the network. An increase in temperature will require more cooling at the mobile base stations resulting in more frequent refuelling of generators. Not only will the logistics of refuelling and maintenance increase operational costs, but it could impact on the network quality.							ongoing operational costs. In the DRC energy efficiency is taken into consideration in the roll out of new base stations. To date 500 ultra-low cost sites have been established in rural areas where there was previously no coverage. These sites are totally off grid and operate on battery and solar power only. Solar sites in Vodacom Mozambique generated in the region of 317 MWh of energy during the year with more solar sites to be constructed as the network roll out continues. In South Africa,	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								off grid generators are being converted to battery-diesel hybrid power units to reduce fuel consumption and extend the generator life by as much as four times. During 2014 GERM software was installed to remotely monitor the consumption of generators, reducing diesel consumption by up to 70% at 231 sites. These actions will reduce the magnitude of the risk.	
Induced changes in natural resources	Organisations are competing for natural resources, which are becoming one of scarcity. With almost 92% of Vodacom's	Reduction/disruption in production capacity	1 to 3 years	Direct	More likely than not	Medium	A cumulative one day shutdown of operations could result in loss of service revenue of approx. R129 million based on current service	Eskom's Stage 1 & 2 load shedding with one blackout per day has a minimal impact on Vodacom's network. However, the	Costs relating to the management of the network relate to staff salaries and fuel costs that are part of operational

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	carbon emissions emanating from purchased electricity, the risk of grid outages and shortages of energy supply will disrupt operations and the network will not be available. Further, the network quality could be impacted in South Africa.						revenue levels in South Africa.	impact increases with Stage 3 and 4 load shedding where an area could have three or four disruptions per day. This will affect the network coverage as the batteries will not have had sufficient time to recharge to full capacity and could possibly not last the two to three hours during the next power disruption on the same day. All core elements and important hub sites have permanent generators for additional power back-up, but the challenge is to keep the diesel supplies replenished during extended	expenditure.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								disruptions. Normal base stations have batteries that last around four or more hours if fully charged in a day. In cases of extended disruptions mobile generators will be deployed and ultimately phased service degradation will be deployed, e.g. turning off LTE first, then 3G and thereafter 2G. Retail stores are heavily reliant on back-up power supplied by the property owner. Key stores that do not have back-up power have been identified and a proposed back up solution is being investigated to provide power for up to six	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								hours. These actions will reduce the magnitude of the risk.	

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	Vodacom's carbon footprint emanates from energy and fuel used in operations and fuel used in transport. Other environmental consequences relate	Reduced demand for goods/services	Up to 1 year	Direct	Likely	Medium	The potential financial implication from reputational risk is difficult to quantify, but it will emanate from a loss of customer confidence and loyalty and higher operational costs for electricity, water, waste and resources. Vodacom's 2014 brand value is estimated at R18296 million – according to brandfinance.com. An estimated 1% loss in reputation could result in a loss of brand value of approx. R183 million together with actual revenue. http://www.brandfinance.com/knowledge_centre/reports/brandfinance-south-africa-top-50-2014	To manage reputational risk and to reduce the likelihood and magnitude thereof, Vodacom is annually measuring, assessing and verifying its	Vodacom spent about R360 000 per annum to appoint external consultants to compile the carbon footprint and disclosure thereof as well as the

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	to resource consumption and waste. Vodacom therefore has a responsibility to minimise the associated environmental impacts and through proactive actions be seen as a champion of and environmental “thought” leader in South Africa and Africa.							carbon footprint and is publicly disclosing its practices and performance through the Carbon Disclosure Project. Vodacom established a Sustainability Strategy and its Strategic Environmental Framework focuses on the impact of Vodacom’s activities on the environment. The top five strategic priorities are	external verification of the carbon inventory. No direct costs are associated with the strategy development other than staff salaries.

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								leadership and culture, waste, carbon footprint, fuel management, and bio-diversity. The strategy will be governed under the current ISO14001 certification, monitored at bi-annual management review meetings and a technical focus workgroup. A policy standard is being developed to establish	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								the correct processes, procedures and governance for the management of electronic waste from Vodacom's operations to ensure that waste materials leaving the business are properly handled, stored, treated and disposed of. The standard addresses international and local legislative requirements and seeks to minimise	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								the risk of harm to human health and the environment. Prevention and minimisation of waste is the most favoured approach, thereafter every effort is made to reuse and re-deploy electronic equipment as far as possible. Where electronic equipment cannot be reused, it is passed on to the recycling agencies to be recycled responsibl	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								y. Licensed disposal to landfill or incineration is the last resort.	
Changing consumer behaviour	Given that ICT infrastructure, particularly broadband access, is a powerful driver of GDP growth and has enormous potential to address socioeconomic imbalances, governments are prioritising the roll out of broadband services to all. The	Wider social disadvantages	1 to 3 years	Indirect (Client)	About as likely as not	Medium-high	The potential financial impact emanates from reduced economic activity from learners not receiving quality schooling and inferior health care by not having stocks available at facilities. This could lead to a reduction in demand for Vodacom's solutions and services. An estimated 0.5% decrease in sales could result in a decrease of service revenue of approx. R311 million per annum based on current service revenue levels.	Vodacom is assisting the shift to a low carbon economy and environment by providing communities with alternative ways of learning and conducting business. In South Africa, Vodacom's Mobile Education project continued in partnership	Vodacom spent R104 million on social development in South Africa, of which R68.3 million was invested in education and education-related projects.

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	positive impact on people's lives – through better education and healthcare, enabling commerce or simply providing street lighting – will be felt for generations. Vodacom believes that its technologies can make a significant impact in the education and health sectors and will continue its support for communitie							with other ICT providers. Since its inception, the Vodacom Mobile Education programme has set up a web-based Digital Classroom with teaching materials and useful resources, provided equipment for 894 schools, established 61 teacher centres and trained over 20,000 teachers. Many of these benefits	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	s and help shift behaviour and attitudes towards a more sustainable, carbon friendly environment in Africa.							are being delivered through a Vodacom-powered Virtual Private Network (VPN) that connects ICT resource centres, participating schools and teachers to the internet, the Vodacom Digital Classroom and each other. An estimated 500,000 learners across South Africa have benefited from the programme so far.	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								Often when clinics run out of TB or ARV medication, the patients don't have the money to travel to the clinic again. Vodacom's Stock Visibility Solution enables nurses at 680 clinics in KZN to manage the availability of chronic medication and avoid stock-outs. The Stock Visibility Solution allows the national Department of Health	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								to see where there are stock-outs on any medication and the new mobile-enabled system enables the department to create a JIT (just in time) supply of medications at these clinics. These actions are expected to reduce the magnitude of the risk of changing consumer behaviour.	

CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

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	Energy and fuel taxes could increase Vodacom's operational costs substantially. However, energy savings will result in large operational costs savings while benefits from potential tax allowances and incentives or subsidies for energy-efficient equipment and renewable energy technologies will add to an organization's bottom line. Compliance with	Reduced operational costs	Up to 1 year	Direct	Virtually certain	Low	The potential financial implications will emanate from energy costs savings and tax allowances that can be claimed on the equipment. The energy efficiency initiatives to be implemented will reduced carbon emissions and electricity consumption with cost savings of more than R5 million per	To benefit from tax and regulatory opportunities while at the same time combat the increases experienced in energy tariffs, Vodacom is focussing on energy efficiency in its core network and data centres. Project Light is in the process of being implemented with the aim to reduce the power usage	Vodacom will invest capital of over R25 million in Project Light on the various energy efficiency equipment.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	energy reduction schemes (PCP) will reduce load shedding by Eskom resulting in less frequent disruptions in operations and improve the network quality in South Africa. These cost savings could add to Vodacom's cost competitiveness in South Africa.						annum.	effectiveness (PUE) reading at the mobile switching centre (MSC) sites from 2.0 to 1.8. The various interventions to achieve the energy savings are: - lighting optimisation that will include the latest technology fittings, lamps, control gear and occupancy sensors; - optimising the airflow paths to and from the data equipment, reducing air mixing and cooling loss, closing of redundant floor openings, and moving of return and supply air grills; - set point optimisation by setting the PCU's to a master/slave (LAN grouping) arrangement in	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								order to turn off units where there is low load, and operating the other units at high loads; - installation of permanent intelligent meters at each site. Data, HVAC and site total power consumption, PUE, COP, Rectifier and UPS efficiencies, etc. are continuously logged, calculated and displayed on a reporting system via a VPN link; - retrofitting the induction motor fans with electronically commuted fans that allow for better control (fan speed, pressure and flow). These initiatives are aimed at reducing energy consumption	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								and costs, carbon emissions and where possible, take advantage of the promulgated S12I tax allowances for energy efficiency.	

CC6.1b

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in mean (average) precipitation	The network is the backbone of Vodacom's business and the quality of its network allows Vodacom to distinguish it from the competitors. It attracts new customers and	Increased demand for existing products/services	1 to 3 years	Direct	Likely	Medium-high	The potential financial impact will emanate from an increased demand for Vodacom's solutions and services. An estimated 0.5% increase in service	To deliver exceptional network quality Vodacom in September 2014 completed its six year radio access network (RAN) renewal project to add single RAN (SRAN) and software defined	The RAN renewal project required capital investment of R9 billion over the six years.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	ensures retention of the existing customer base. Change in average precipitation could influence the network quality and the demand for Vodacom's solutions and services. Vodacom is therefore strengthening its resilience as an organisation by renewing the radio access network (RAN) to incorporate newer technologies that could withstand weather influences.						revenue could result in additional revenue of approx. R311 million per annum based on current service revenue levels.	radio (SDR) technologies to the network. SRAN allows for the accommodation of 2G, 3G and LTE on the same base station; and together with SDR the network can be upgraded to newer technologies such as 4G or LTE. The RAN renewal programme also improves energy efficiency, drives down operational cost and helps to expand data coverage. The transmission network is enhanced by installing base stations with fibre-optic cables and high speed IP-microwave transmission. These technological changes help to reduce operational energy costs and carbon emissions, while providing	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								solutions and services that help customers to live and work more efficiently and flexibly. In the DRC 500 ultra-low cost sites have been established in rural areas where there was previously no coverage. These sites are totally off grid and operate on battery and solar power only.	
Change in precipitation pattern	Vodacom recognises water as a valuable resource where some 84% of South Africa's freshwater systems are threatened and more than 40% are in a critical condition. By managing water consumption in operations as well as the recycling thereof, the water supply and costs is	Reduced operational costs	Up to 1 year	Direct	Likely	Low	The potential financial benefit relate to the estimated annual cost saving of R228 000 by substituting municipal water with the 15% rainwater harvested.	In order to reduce Vodacom's reliance on municipal water it built a rainwater harvesting system at its head office in Midrand, with the intention to provide 40% of the water required for the air conditioning system. It could potentially remove 12-million litres a year of water demand from the local municipal supply. The 0.04	Vodacom spent capital of R4.2 million to build the rainwater harvesting system.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	managed.							km2 rainwater harvest storage dam has a storage capacity of one million litres, collecting water from the region's 537 mm annual rainfall. Any excess rainwater is used to irrigate the gardens on the premises. The roof of the rainwater storage dam is fitted with a bio-filter with a water wise garden with indigenous plant on top. The rainwater harvesting project has been integrated with a central control automation system that allows for continuous monitoring of both water quality and quantity. A non-return valve has been fitted to prevent rainwater contamination with municipal water. Special care was taken to ensure	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								that existing riverine and wetland areas and associated fauna, flora and biota are protected from the effects of reduced runoff through rainwater harvesting. However, it was found that the Vodacom Rainwater Harvesting system had a minimal environmental impact to ecosystems downstream. Areas further down receive runoff from progressively larger areas; therefore the reduction in runoff through an upstream rainwater harvesting system was found to be progressively smaller in proportion to the total runoff available to a wetland or riverine.	

CC6.1c

Please describe the 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	Vodacom is committed to managing the environmental impacts of its solutions and services and would like to be seen as a leader in environmental issues in the ITC industry. The reputational benefits of being a sustainable brand and responsible corporate citizen will result in market growth and opportunities for expansion in	Increased demand for existing products/services	Up to 1 year	Direct	Likely	Medium	A reputation as a sustainable brand and responsible corporate citizen is reflected in the economic value Vodacom creates and distributes to its stakeholders such as its employees and the local communities in which it operates. Vodacom's 2014 brand value is estimated at R18296 million – according to brandfinance.com. An estimated 1% gain in reputational benefits could result in a gain of brand value of approx. R183 million together with actual revenue. http://www.brandfinance.com/knowledge_centre/reports/brandfinance-south-africa-top-50-2014	By partnering with Vodacom, Wildlife ACT harnesses the power of technology to help protect vulnerable species. Tracking and monitoring of endangered animals and wildlife species is a critical step in their conservation. It is very difficult to conserve something	Cost relate to salaries and wages, but Vodacom sponsored the design and development of the tracking solution through its Corporate Social and Environment programme to the value of R500 000.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	South Africa and the rest of Africa.							which you don't know you have and/or whether conservation efforts are effective. Unfortunately, many African game reserves do not have the capacity to run effective wildlife monitoring programmes and require assistance to ensure this vital component of conservation is carried-out. Wildlife ACT focuses on	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								key conservation elements and help rural communities who live alongside protected wildlife areas to develop a love and respect for nature, provide them with reasons to protect it, and advance economic empowerment. Vodacom designed a complete solution for wildlife tracking and monitoring, specifically in the St Lucia	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								Wetlands area in Zululand, where there are some of the last remaining packs of Wild Dog. Extensive work on the collars were required as the SIM card in the collars had to withstand 'rough' treatment and conditions while GSM coverage was sparse in remote areas. Vodacom's SMS system is robust and durable enough to	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								provide a solution that is viable for tracking of Wild Dog and other endangered or vulnerable animals. By using Vodacom's M2M technology that tracks wildlife so people can help protect them will assist Vodacom in gaining a reputation as a sustainable brand and responsible corporate citizen.	
Changing	Customers	New	Up to 1	Direct	Likely	Low-	The potential financial impact will be an increase in	In an	A

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
consumer behaviour	are increasingly demanding and expecting the latest in technology developments while consumer attitudes are shifting towards more sustainable products and services. The mobile industry as an innovation platform for new services can make a difference in people's lives by employing technology in meaningful ways. ICT infrastructure,	products/business services	year			medium	demand for Vodacom's services. An estimated 0.5% increase in mobile services in Africa could result in an increase in revenue of approx. R79 million per annum based on current revenue levels.	empowerment initiative in Tanzania where electricity supplies are scarce or absent, solar and bicycle-powered mobile phone chargers were launched. Millions of people in rural areas have mobile phone handsets, but cannot charge the device. They have to travel to where they can charge the device or power their handsets with car	ReadySet charging station costs approximately TZS320,000 ($200) and can generate TZS 64,000 – TZS 80,000 ($40 – $50) per month for the shopkeepers of mobile phone charging while saving them up to USD 10 per month in kerosene fuel for lighting. Costs relating to m-pesa and m-

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	particularly broadband access, is a powerful driver of GDP growth and has enormous potential to address socioeconomic imbalances. Vodacom will therefore continue to explore innovative and transformational solutions that can play an important role in improving quality of life and driving economic growth through the use of mobile communicati							batteries. ReadySet charging stations consisting of photovoltaic and pedal-powered charging stations were rolled out in off-grid areas and provide a cost and energy efficient solution. It can charge multiple phones simultaneously and power a LED light bulb, radios and tablet computers. The solar panel can charge up to 10	pawa services are staff costs for development as well as operational costs.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	ons.							phones a day. Vodacom's mobile financial service, m-pesa, is providing money transfer, savings and credit card services to people outside the traditional financial system. The m-pesa electronic platform provides companies with a low-cost solution to pay staff salaries via mobile phone. Employees can use their m-pesa	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								account as a wallet to hold their salary, and with the m-pesa Visa card they can withdraw cash from any ATM and pay for goods and services using any point of sale machine. Students now have the ability to pay for educational and daily expenses from their bursary cash stipends by using m-pesa's mobile wallet. Tanzania launched	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								m-pawa, a savings and loan product for the unbanked population. These initiatives are supporting Vodacom's objective of strengthening sustainability in Africa and transforming society.	

CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

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	Tue 01 Apr 2008 - Tue 31 Mar 2009	26907.12
Scope 2	Tue 01 Apr 2008 - Tue 31 Mar 2009	339462.16

Scope	Base year	Base year emissions (metric tonnes CO2e)

CC7.2

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

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

CC7.2a

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

CC7.3

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

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-134a	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: R407c	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: R410a	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: FM200	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: Novac 1230	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HCFC-22	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	2.6691	kg CO2e per liter	Defra 2014 - Guidelines to Defra's GHG Conversion Factors for Company Reporting, Fuels, updated May 2014. Available: www.ukconversionfactorscarbonsmart.co.uk
Motor gasoline	2.2999	kg CO2e per liter	Defra 2014 - Guidelines to Defra's GHG Conversion Factors for Company Reporting, Fuels, updated May 2014. Available: www.ukconversionfactorscarbonsmart.co.uk
Electricity	1.03	Other: kg CO2e per kWh	South Africa: Eskom Holdings SOC Limited Integrated Report 2014. Available: http://integratedreport.eskom.co.za/supplementary/app-environmental.php
Electricity	0.596	Other: kg CO2e per kWh	Mozambique, Tanzania, Lesotho and DRC: Defra 2014 - Guidelines to Defra's GHG Conversion Factors for Company Reporting, Overseas Electricity, African (average), updated May 2014. Available: www.ukconversionfactorscarbonsmart.co.uk

Further Information

Page: CC8. Emissions Data - (1 Apr 2014 - 31 Mar 2015)

CC8.1

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

Equity share

CC8.2

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

31989.40

CC8.3

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

440078.26

CC8.4

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

No

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 Scope 2 emissions excluded from this source	Explain why the source is excluded

CC8.5

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

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 2% but less than or equal to 5%	Data Gaps Assumptions Extrapolation Data Management	The emissions from diesel used in generators is derived from the litres of diesel purchased as per the records, not the volume of diesel consumed. This number may be overstated as it does not account for theft of diesel. The litres of fuel used were used to calculate emissions from petrol and diesel used in fleet vehicles. In Tanzania the quantity of air-conditioning gas refills was not available. The type of air-conditioning gas refill was unavailable in Lesotho and it was assumed that the refill was CO2 as reported in 2014.
Scope 2	More than 2% but less than or equal to 5%	Extrapolation Data Management	The kWhs purchased is not always specified on the utility bill as some electricity accounts are paid as part of the rental payment. Electricity charges are often based upon estimates from municipal councils and Eskom. Recalculations were performed to ensure accuracy. Transmission & Distribution losses for African operations have been calculated and incorporated as Scope 3 emissions as per Defra's guidance.

CC8.6

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

Third party verification or assurance complete

CC8.6a

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

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2015/02/22902/Climate Change 2015/Shared Documents/Attachments/CC8.6a/Vodacom 2015 Assurance Report.pdf	Independent Assurance Report, pages 121-123	ISAE 3410	34

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission

CC8.7

Please indicate the verification/assurance status that applies to your reported Scope 2 emissions

Third party verification or assurance complete

CC8.7a

Please provide further details of the verification/assurance undertaken for your Scope 2 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2015/02/22902/Climate Change 2015/Shared Documents/Attachments/CC8.7a/Vodacom 2015 Assurance Report.pdf	Independent Assurance Report, pages 121-123	ISAE 3410	93

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
Other: Key performance indicators	

CC8.9

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

No

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Apr 2014 - 31 Mar 2015)

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	12664.67
Mozambique	4031.89
Lesotho	550.38
Tanzania	1907.90
Congo, Democratic Republic of the	12834.56

CC9.2

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

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)

CC9.2b

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)

CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)
Stationary combustion	21182.97
Mobile combustion - vehicle fleet	6342.72
Air conditioning and refrigerant gas refills (Kyoto protocol gases)	4463.71

CC9.2e

Please break down your total gross global Scope 1 emissions by legal structure

Legal structure	Scope 1 emissions (metric tonnes CO2e)

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Apr 2014 - 31 Mar 2015)

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 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for in CC8.3 (MWh)
South Africa	411744.29	399751.74	0
Mozambique	14505.91	24608.23	0
Lesotho	2970.09	4983.37	0
Tanzania	6891.62	11563.12	0
Congo, Democratic Republic of the	3966.35	6654.95	0

CC10.2

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

By business division

CC10.2a

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

Business division	Scope 2 emissions (metric tonnes CO2e)
Data centres - South Africa	46794.40
Data centres - Lesotho	919.78
Access & Core Network - South Africa	307453.51
Access & Core Network - Lesotho	1771.96
Access & Core Network - Tanzania	5413.40
Offices & Retail - South Africa	57496.39
Offices & Retail - Mozambique	14505.91
Offices & Retail - Lesotho	278.35
Offices & Retail - Tanzania	1478.21
Offices & Retail - DRC	3966.35

CC10.2b

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

Facility	Scope 2 emissions (metric tonnes CO2e)

CC10.2c

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

Activity	Scope 2 emissions (metric tonnes CO2e)

CC10.2d

Please break down your total gross global Scope 2 emissions by legal structure

Legal structure	Scope 2 emissions (metric tonnes CO2e)

Further Information

Page: CC11. Energy

CC11.1

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

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

CC11.2

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

Energy type	MWh
Fuel	109874.72
Electricity	447561.41
Heat	0

Energy type	MWh
Steam	0
Cooling	0

CC11.3

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

Fuels	MWh
Diesel/Gas oil	101596.70
Motor gasoline	8278.02

CC11.4

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

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
Non-grid connected low carbon electricity generation owned by company, no instruments created	1792	53 Radio sites in Lesotho operate with renewable energy systems owned by Vodacom while Mozambique and South Africa generated electricity from on-site solar PV systems.

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	Comment
Emissions reduction activities	0.60	Decrease	Scope 1 emissions from diesel consumption reduced by 2077 tCO2e as a result of installing GERM software at 231 sites to remotely monitor the consumption of generators. Scope 2 emissions reduced by 645 tCO2e as a result of installing a HVAC ice plant that is powered using the excess energy generated by the solar photovoltaic array at the Century City office. Last year 2722 tCO2e were reduced by the emission reduction projects. Total Scope 1 & 2 emissions in the prior year was 450 528.19 tCO2e. We therefore arrived at 0.60% through (2722 / 450 528.19) * 100 = 0.60%.
Divestment	4.58	Decrease	In Tanzania the network towers were sold and transferred in a phased approach, thereby reducing the carbon footprint.
Acquisitions			
Mergers			
Change in output	6.96	Increase	Electricity consumption increased by 57.68% in Lesotho as a result of an increase in the number of base stations and shops. The number of base stations in South Africa increased by 6.5% while economic output increased by 0.19% resulting in an increase in Scope 2 emissions.
Change in methodology	3.0	Increase	The emissions factor for SA purchased electricity from Eskom (Scope 2) increased by 3% or from 1.0 in 2013 to 1.03 kg CO2e per kWh in 2014.
Change in boundary			
Change in physical operating			

Reason	Emissions value (percentage)	Direction of change	Comment
conditions			
Unidentified			
Other			

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	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.0000075935	metric tonnes CO2e	unit total revenue	4.58	Increase	The intensity figure increased as a result of a 4.78% increase in Scope 1 & 2 emissions, offset by a 0.19% increase in revenue earned.

CC12.3

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
76.20	metric tonnes CO2e	FTE employee	4.54	Decrease	The intensity figure decreased as a result of a 9.77% increase in FTEs, offset by a 4.78% increase in Scope 1 & 2 emissions.

CC12.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
	metric tonnes CO2e				Refer to ICT5.3 in ICT module.

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

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

CC13.2

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

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

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

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, calculated	405.13	Consumption of office paper Emission factors: Mondi Rotatrim Paper Profile and Sappi Typek Paper Profile - released July 2014 and February 2014 respectively indicating electricity usage and CO2 emissions per tonne of paper. Tonnes of paper purchased provided by the service providers were used to calculate emissions according to the GHG Protocol using the provided emission factors. Assumptions: Data was provided for all operations except Tanzania and extrapolated according to the equity ratios.	100.00%	
Capital goods	Not relevant, explanation provided				Emissions from capital goods are captured under Scope 1&2, e.g. generators, vehicle fleet and any electricity consuming equipment.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	4054.70	Transmission and Distribution losses from purchased electricity KWhs consumed were used to calculate emissions according to the GHG Protocol using Defra's 2014 emission factors for transmission & distribution, Africa (average). Assumptions: This figure relates to transmission and distribution losses from electricity purchased in Mozambique, Lesotho, Tanzania and DRC.	100.00%	

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 transportation and distribution	Relevant, calculated	377.40	Third-party transport Litres of diesel consumed by third party vehicles were used to calculate emissions according to the GHG Protocol using Defra's 2014 emission factors for fuel. Assumptions: Fuel consumed by third party vehicles was calculated using the available records for 2014 for operations in Tanzania only.	100.00%	
Waste generated in operations	Relevant, not yet calculated				
Business travel	Relevant, calculated	8759.66	Car rental - kilometres travelled, engine size and type of fuel used provided by service provider. Defra's 2014 emission factors for passenger vehicles used. Air travel - flight information provided by service provider, including class of travel, departure dates and destination of each leg. Carbon Calculated determined the distance travelled. Defra's 2014 emission factors for business travel - air used. Hotel accommodation - bednights provided by service provider. Emissions factor sourced from UNEP World Meteorological Organisation Climate Change And Tourism Report; A2.2.3 Accommodation. Emissions were calculated according to the GHG Protocol. Assumptions: Car rental and hotel accommodation information for Tanzania was not available. Hotel accommodation was based on estimated number of nights away on business travel and calculations were based on 1 person occupying a room per night.	100.00%	
Employee commuting	Relevant, calculated	11285.75	Employee commuting A commuting survey was completed for Vodacom South Africa in 2012. A total of 707 surveys were received with 696 useable surveys. Due to the low percentage of response, this figure was combined with the 2009 Vodacom South Africa employee	15.00%	

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
			commuting survey and an average of the two was used to extrapolate the emissions per FTE for the Vodacom group according to the GHG Protocol using Defra's 2014 emission factors for business travel - land.		
Upstream leased assets	Relevant, not yet calculated				
Downstream transportation and distribution	Relevant, calculated	7424.54	Third-party transport Litres of diesel and petrol consumed by third party vehicles were used to calculate emissions according to the GHG Protocol using Defra's 2014 emission factors for fuel. Assumptions: Fuel consumed by third party vehicles was calculated using the available records for South African operations only.	100.00%	
Processing of sold products	Not relevant, explanation provided				Vodacom's services are not intermediate products that require further processing. It is not responsible for directly generating greenhouse gas emissions.
Use of sold products	Relevant, not yet calculated				
End of life treatment of sold products	Not relevant, explanation provided				Vodacom sells mobile communication solutions and services. There is then no end of life treatment for sold products other than for handsets which make a up a small % of Scope 3 emissions.
Downstream leased assets	Not relevant, explanation provided				If applicable, all emissions from these sources are captured in other sections.

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	Relevant, not yet calculated				
Investments	Not relevant, explanation provided				Vodacom accounts for emissions on the equity share approach.
Other (upstream)					
Other (downstream)					

CC14.2

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

Third party verification or assurance complete

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2015/02/22902/Climate Change 2015/Shared Documents/Attachments/CC14.2a/Vodacom 2015 Assurance Report.pdf	Independent Assurance Report, pages 121-123	ISAE 3410	22

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
Purchased goods & services	Change in output	0.47	Increase	Economic activity and revenue increased by 0.19% resulting in increased paper usage.
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Divestment	0.32	Decrease	In Tanzania the network towers were sold and transferred in a phased approach, thereby reducing the Scope 3 emissions from transmission and distribution losses.
Upstream transportation & distribution	Change in output	0.25	Increase	An increase in equity in Tanzania resulted in an increase in emissions from third party transport.

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Business travel	Change in output	1.97	Increase	Economic activity and revenue increased by 0.19% resulting in increased business travel.
Employee commuting	Change in output	3.18	Increase	The emissions factor calculated for 2012 and 2009 were used to calculate emissions from employee commuting taking into account an increase of 9.77% in the number of FTEs.
Downstream transportation and distribution	Emissions reduction activities	0.74	Decrease	Third party transporters in South Africa implemented route and load optimisation where feasible and have vehicle tracking systems to monitor fuel usage and driver behaviour to reduce emissions.

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

CC14.4a

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

i) Vodacom has correspondence and face-to-face meetings with its courier service provider to see how carbon emissions can be reduced.

ii) Courier services was prioritised as it makes up a large part of the distribution channel and through carbon emissions reductions, has the potential to reduce risk, lower costs, create new revenue opportunities and better position for the Vodacom brand. Measures of success include a shrinking year-on-year carbon footprint for transport and distribution with the same volume of output.

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

Number of suppliers	% of total spend	Comment
1	1%	Courier services makes up a large part of the distribution channel.

CC14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
Identifying GHG sources to prioritize for reduction actions	Vodacom measured the footprint of the services provided by the third party courier company. The courier company makes use of route and load optimisation where feasible and has a vehicle tracking system to monitor fuel usage and driver behaviour to reduce emissions. Vodacom plans to engage with more suppliers, e.g. the travel agency to explore opportunities for smarter, more efficient ways of operating to reduce carbon emissions and cost.

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

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
Trisha Govender	Senior Specialist: Sustainability	Environment/Sustainability manager

Further Information

Module: ICT

Page: ICT1. Data center activities

ICT0.1a

Please identify whether "data centers" comprise a significant component of your business within your reporting boundary

Yes

ICT1.1

Please provide a description of the parts of your business that fall under “data centers”

Enterprise IT Services is currently operating and maintaining close to 3000 square metres usable data centre space in Cape Town and Midrand for its internal cloud, excluding data centre space offered by Vodacom Business as hosted space to external customers, or data centre space primarily focussed on supporting the customer centric telephony/mobile data network infrastructure.

Two new data centres incorporating the latest concepts in data centre design, have been constructed in Cape Town during the past two years. A new data centre was constructed in Midrand during 2013 and is fully operational.

ICT1.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the data centers component of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method
Data centers	50.93	46794.40	45431.46	Meter or submeter reading

ICT1.3

What percentage of your ICT population sits in data centers where Power Usage Effectiveness (PUE) is measured on a regular basis?

Percentage	Comment
30%	PUE is measured regularly in all South African data centres.

ICT1.4

Please provide a Power Usage Effectiveness (PUE) value for your data center(s). You can provide this information as (a) an average, (b) a range or (c) by individual data center - please tick the data you wish to provide (tick all that apply)

Average

ICT1.4a

Please provide your average PUE across your data centers

Number of data centers	Average PUE	% change from previous year	Direction of change	Comment
7	2	15.60	Increase	The PUE increased as a result of an increase in the capacity at data centres.

ICT1.4b

Please provide the range of PUE values across your data centers

Number of data centers	PUE Minimum Value	% change of PUE Minimum Value from previous year	PUE Maximum Value	% change of PUE Maximum Value from previous year	Direction of change	Comment

ICT1.4c

Please provide your PUE values of all your data centers

Data center reference	PUE value	% change from previous year	Direction of change	Comment

ICT1.5

Please provide details of how you have calculated your PUE value

Other: Total DC Load/IT Load

ICT1.6

Do you use any alternative intensity metrics to assess the energy or emissions performance of your data center(s)?

No

ICT1.6a

Please provide details on the alternative intensity metrics you use to assess the energy or the emissions performance of your data center(s)

ICT1.7

Please identify the measures you are planning or have undertaken in the reporting year to increase the energy efficiency of your data center(s)

Status in reporting year	Energy efficiency measure	Comment
Planned	Power Management Efficiencies	Vodacom is focussing on energy efficiency in its core network and data centres. Project Light is in the process of being implemented with the aim to reduce the power usage effectiveness (PUE) reading at the mobile switching centre (MSC) sites from 2.0 to 1.8. The various interventions to achieve the energy savings are: - lighting optimisation that will include the latest technology fittings, lamps, control gear and occupancy sensors; - optimising the airflow paths to and from the data equipment, reducing air mixing and cooling loss, closing of redundant floor openings, and moving of return and supply air grills; - set point optimisation by setting the PCU's to a master/slave (LAN grouping) arrangement in order to turn off units where there is low load, and operating the other units at high loads; - installation of permanent intelligent meters at each site. Data, HVAC and site total power consumption, PUE, COP, Rectifier and UPS efficiencies, etc. are continuously logged, calculated and displayed on a reporting system via a VPN link; - retrofitting the induction motor fans with electronically commuted fans that allow for better control (fan speed, pressure and flow).

ICT1.8

Do you participate in any other data center efficiency schemes or have buildings that are sustainably certified or rated?

No

ICT1.8a

Please provide details on the data center efficiency schemes you participate in or the buildings that are sustainably certified or rated

Scheme name	Level/certification (or equivalent) achieved in the reporting year	Percentage of your overall facilities to which the scheme applies

ICT1.9

Do you measure the utilization rate of your data center(s)?

Yes

ICT1.9a

What methodology do you use to calculate the utilization rate of your data center(s)?

Cabinet footprint per the GHG Protocol and fixed space ratio per cabinet.

ICT1.10

Do you provide carbon emissions data to your clients regarding the data center services they procure?

No

ICT1.10a

How do you provide carbon emissions data to your clients regarding the data center services they procure?

ICT1.11

Please describe any efforts you have made to incorporate renewable energy into the electricity supply to your data center(s) or to re-use waste heat

In February 2013 Vodacom unveiled the solar panel array on the roof of its Century City office in Cape Town. It is the largest array on a single building in Africa and is expected, at its peak, to provide up to 75% of the building's power. A display panel installed in the reception area of the building will display information such as power currently being produced and carbon emission savings. The total installed capacity of this array is around 500 kWp and the system produced 740 MWhs during the year.

Further Information

Page: ICT2. Provision of network/connectivity services

ICT0.1b

Please identify whether "provision of network/connectivity services" comprises a significant component of your business within your reporting boundary

Yes

ICT2.1

Please provide a description of the parts of your business that fall under "provision of network/connectivity services"

Vodacom South Africa is a leading mobile communications company providing voice, messaging, data and converged services to just over 32.1 million active customers in South Africa. The network that provides these services is made up of the access and core network. The access layer is the first layer of the network that customers connect to and the core forms the central aggregation and control system of the network. There are 10 673 base station sites in South Africa.

ICT2.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the provision of network/connectivity services component of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method
Provision of network/connectivity services	6983.40	307453.51	298498.55	Meter or submeter reading

ICT2.3

Please describe your gross combined Scope 1 and 2 emissions or electricity use for the provision of network/connectivity services component of your business as an intensity metric

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
4.82	metric tonnes CO2e	Terabyte of network traffic	26.23	Decrease	Although Scope 1 & 2 emissions increased by 14.26% due to a 6.5% increase in the number of base stations despite the energy efficiencies obtained by the RAN renewal program, the intensity figure decreased due to a 54,96% increase in network traffic.

ICT2.4

Please explain how you calculated the intensity figures given in response to Question ICT2.3

Fuel and electricity consumed in network operations (Scope 1 and 2) were converted to tonnes CO2e emissions per the GHG Protocol and divided by terabytes of network traffic to obtain the intensity figure.

ICT2.5

Do you provide carbon emissions data to your clients regarding the network/connectivity services they procure?

No

ICT2.5a

How do you provide carbon emissions data to your clients regarding the network/connectivity services they procure?

Further Information

Page: ICT3. Manufacture or assembly of hardware/components

ICT0.1c

Please identify whether "manufacture or assembly of hardware/components" comprises a significant part of your business within your reporting boundary

No

ICT3.1

Please provide a description of the parts of your business that fall under "manufacture or assembly of hardware/components"

ICT3.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the manufacture or assembly of hardware/components part of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method

ICT3.3

Please identify the percentage of your products meeting recognized energy efficiency standards/specifications by sales weighted volume (full product range)

Product type	Standard (sleep mode)	Percentage of products meeting the standard by sales volume (sleep mode)	Standard (standby mode)	Percentage of products meeting the standard by sales volume (standby mode)	Standard (in use mode)	Percentage of products meeting the standard by sales volume (in use mode)	Comment

ICT3.4

Of the new products released in the reporting year, please identify the percentage (as a percentage of all new products in that product type category) that meet recognized energy efficiency standards/specifications

Product type	Standard (sleep mode)	Percentage of new products meeting the standard (sleep mode)	Standard (standby mode)	Percentage of new products meeting the standard (standby mode)	Standard (in use mode)	Percentage of new products meeting the standard (in use mode)	Comment

ICT3.5

Please describe the efforts your organization has made to improve the energy efficiency of your products

ICT3.6

Please describe the GHG emissions abatement measures you have employed specifically in your ICT manufacturing operations

ICT3.7

Do you provide carbon emissions data to your clients regarding the hardware/component products they procure?

ICT3.7a

How do you provide carbon emissions data to your clients regarding the hardware/component products they procure?

Further Information

Page: ICT4. Manufacture of software

ICT0.1d

Please identify whether "manufacture of software" comprises a significant component of your business within your reporting boundary

No

ICT4.1

Please provide a description of the parts of your business that fall under "manufacture of software"

ICT4.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the software manufacture component of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method

ICT4.3

Please describe your gross combined Scope 1 and 2 emissions for the software manufacture component of your business in metric tonnes CO2e per unit of production

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

ICT4.4

What percentage of your software sales (by volume) is in an electronic format?

ICT4.5

Do you provide carbon emissions data to your clients regarding the software products they procure?

ICT4.5a

How do you provide carbon emissions data to your clients regarding the software products they procure?

Further Information

Page: ICT5. Business services (office based activities)

ICT0.1e

Please identify whether "business services (office based activities)" comprise a significant component of your business within your reporting boundary

Yes

ICT5.1

Please provide a description of the parts of your business that fall under "business services (office based activities)"

Office based activities contribute around 15% of our reporting boundary however we can only accurately report on office based activities in South Africa.

This include a wide range of activities including corporate services (finance, legal, HR, corporate affairs, strategy), customer care, enterprise business management, consumer business management and network management. These activities provide operational support (50%) and revenue generating activities (50%).

ICT5.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the business services (office based activities) component of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method
Business services (office based activities)	257.61	57496.39	55821.74	Meter or submeter reading

ICT5.3

Please describe your gross combined Scope 1 and 2 emissions for the business services (office based activities) component of your business in metric tonnes per square meter

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.1867610936	metric tonnes CO2e	Square meter	9.05	Decrease	The intensity figure decreased as a result of a 8.54% decrease in Scope 1 & 2 emissions due to energy efficiencies coupled with a 0.56% increase in office space.

ICT5.4

Please describe your electricity use for the provision of business services (office based activities) component of your business in MWh per square meter

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.1805126678	MWh	Square meter	11.89	Decrease	The intensity figure decreased as a result of a 11.40% decrease in MWhs consumed due to energy efficiencies coupled with a 0.56% increase in office space.

Further Information

Page: ICT6. Other activities

ICT0.1f

Please identify whether "other activities" comprise a significant component of your business within your reporting boundary

No

ICT6.1

Please provide a description of the parts of your business that fall under "other"

ICT6.2

Please provide your absolute Scope 1 and 2 emissions and electricity consumption for the identified other activity component of your business

Activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)	Annual electricity consumption (MWh)	Electricity data collection method

ICT6.3

Please describe your gross combined Scope 1 and 2 emissions for your defined additional activity using an appropriate activity based intensity metric

Activity	Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

ICT6.4

If appropriate, please describe your electricity use for your defined additional activity using an appropriate activity based intensity metric

Activity	Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change

Further Information

CDP 2015 Climate Change 2015 Information Request