Module: Introduction

Page: Introduction

0.1

Introduction
Please give a general description and introduction to your organization

Launched in 1994, the MTN Group is a multinational telecommunications group, operating in 21 countries in Africa and the Middle East and offering cellular network and fixed line access, as well as business solutions. The MTN Group, which has its headquarters in South Africa, is listed on the JSE Securities Exchange under the share code: "MTN", and is included in the JSE Socially Responsible Index (SRI). MTN recorded more than 160 million subscribers across its operations by 31 December 2011. The Group operates in Afghanistan, Benin, Botswana, Cameroon, Cote d'Ivoire, Congo Brazzaville, Cyprus, Ghana, Guinea Bissau, Guinea Conakry, Iran, Liberia, Nigeria, Rwanda, South Africa, Swaziland, Sudan, Syria, Uganda, Yemen and Zambia. At the time of this submission, the group reports on its operations in 22 countries, and has over 170 million subscribers.

0.2

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

Enter Periods that will be disclosed
Sat 01 Jan 2011 - Sat 31 Dec 2011

0.3

Country list configuration

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response

Select country
South Africa
Cameroon
Ghana
Iran, Islamic Republic of
Nigeria
Swaziland
Syrian Arab Republic
Uganda

0.4

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)

0.5

Please select if you wish to complete a shorter information request

0.6

Modules

As part of the Investor CDP information request, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors and companies in the oil and gas industry should complete supplementary questions in addition to the main questionnaire.
If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will be marked as default options to your information request. If you want to query your classification, please email respond@cdproject.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.cdproject.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

The state of the environment is a material concern for us. Operating in developing countries, where some of the most vulnerable and indigent communities live, the importance of addressing environmental matters to the best of the Group's ability is self-evident. Our customers live in emerging countries that are most vulnerable to the effects of climate change. We are therefore concerned about the state of the environment. Environmental matters have a direct impact across the Group's footprint. However, we also know that those with social and economic vulnerability are also most vulnerable to environmental change and volatility. The measured and anticipated impacts of climate change on economies and livelihoods where we operate in Africa and the Middle East are potentially devastating. For MTN, environmental concerns are therefore also macro socio-economic concerns.
We accept that there is that there is significant scientific evidence that climate change can result in physical risks such as extreme weather conditions (floods, hurricanes and cyclones). We know that such impacts can damage property and equipment and will disrupt MTN's business services.
In line with above, MTN ensures that climate change and environmental matters are addressed as part of core business as follows. Our governance structures reflect the importance we attach to the fact that business can no longer separate environmental and social matters from traditional economic matters: (a) Governance: The Group Sustainability Manager reports to the Group Executive for Corporate Affairs and Human Resources. This Executive is a member of the Group Executive Committee, the Group Risk Management, Compliance and Corporate Governance Committee Committee by permanent invitation, and the Group Social and Ethics Committe, both of which are sub-committees of the Group Board. The Group Board has delegated responsibility for Group Sustainability to the Group Risk Management, Compliance and Corporate Governance Committee, and responsibility vests with the Group President and CEO, who has appointed the Group Executive for Human Resources and Corporate Affairs to oversee group sustainability. (b) Performance Reporting. The Group has compiled detailed CDP reports from Financial Year 2009, and these are made available on both the coroporate website www.mtn.com/sustainability and the CDP website. The MTN Group is a member of the JSE SRI index, has maintained this index listing for the past 6 years, and has improved its performance reporting with respect to energy, carbon, climate and environmental management, The Group also produces integrated business financial and sustainability reports in line with the King III Code of Corporate Governance, which requires environmental (and social) matters for listed companies to be reported alongside financial and governance performance. (d) Policy and Specifications: The Group's Environmental Management Policy is supported by Environmental Management Systems (EMS) in a number of operations, some of which are based on ISO 14001. Our Base Station Toolkit specifies approved and trial technologies to reduce total site costs including building materials and equipment, services and energy requirements, and reduction of carbon emissions. (D) The Group's Top Business Risks now incorporate the requirement for operations to manage, track and report on sustainability risks, of which climate change is one.

Module: Management [Investor]

Page: 1. Governance

1.1

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

Individual/Sub-set of the Board or other committee appointed by the Board

1.1a

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

Responsibility is with Group Board, which has delegated responsibility to Group Risk Management, Compliance and Corporate Governance Committee (overall sustainability). The Group President and CEO has delegated responsibility to the Group Executive: Human Resources and Corporate Affairs

MEMBERS:
Mr. J van Rooyen (Chairman)
Mr. J N Njeke
Ms M L D Marole
Mr. J Strydom
Ms K P Kaylan

BY INVITATION:
Mr NP Mageza
Mr. P. Norman
Mr. N I Patel
Mr. A van Biljon
Mr. R S Dabengwa
Mr. S Fakie
Ms J Desai
Mrs Y Rajha

Ms. Z Rehman is the Group Sustainability Manager and is responsible for all climate change and sustainability initiatives and issues at MTN. The Group Sustainability function focuses on building the foundations for a more sustainable business and implements environmental or social core business projects at both

Group and operational level in partnership with business functions. Group Sustainability seeks to integrate material economic, environmental and social requirements, opportunities and risk management in core business strategic planning, implementation and performance management.

1.2

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

No

1.2a

Please complete the table

Who is entitled to benefit from these incentives?	The type of incentives	Incentivised performance indicator

Further Information

The issue of climate change is increasingly receiving attention by MTN, and is now indicated in the list of Principle business risks facing the Group. The Group completed its third iteration of its CO2 footprint calculation in February 2012. MTN has determined that this is the first step in developing a climate change strategy. Once a thorough analysis has been done of the carbon footprint (the final tranche of which will is aimed for completion by the end 2012), MTN will finalise required actions include key performance indicators, targets and measurements to reduce energy use and associated carbon emissions. Nevertheless, where possible activities are also fast-tracked in order to avoid the time lag caused by linear planning processes. For example while this report relates to the financial year 2011, ending December 2011, in early 2012 further progress was made that warrants mention in response to climate management leadership within MTN. Detailed energy reviews and audits were undertaken of two of MTN's largest operations, in order to determine opportunities over an immediate, medium and long term to reduce energy consumption. Please also refer to MTN's efforts with respect to efficient engineering and alternative energy sources already implemented by MTN later in this report.

Page: 2. Strategy

2.1

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

2.1a

Please provide further details (see guidance)

We base our sustainable business approach on the Forum for the Future's Five Capitals' Model. This model is useful to MTN as it allows us to view how our economic performance is subject to our reliance on natural, human and social capitals, and therefore helps us focus our efforts and remain aware of our macro-operating context. The model is also useful to help us determine materiality and trade-off decisions in terms of our focus, efforts and projects. We have linked the business' sustainability priorities to Group's goals (cost reduction and ICT convergence), integrating economic environmental and social performance.
MTN continues to take a two-pronged approach to integrating sustainability in our business:
• Setting the platform or foundations for sustainable business performance (strategic planning, opportunities, innovation and risk, governance and management, internal education and capacity building, and performance management via reporting) ; and
• Focusing on no more than two to three areas of implementation, aligned to the Group's vision, using the rule of materiality and impact. The top two multi-year programmes are climate-change related (energy and greenhouse gases, and electronic waste).
Integrated Risk Management process:
• Group Business Risk Management (BRM) is responsible for the identification of Principal Risks from the Group Strategic Objectives
• Risks are continually identified and evaluated by Business Risk Managers located in each operation (OpCo)
• Response strategies are developed based on the nature of the risk to the business
• OpCo Risk reports are compiled by local Head of Business Risk Management and presented to both the CEO and Audit and Risk Compliance Committee
• The Head of BRM of each operation submits a consolidated report to the MTN Group EXCO and Group Risk and Compliance Committee.
• MTN recognises that there are both opportunities and risks associated with climate change, and as such conducted a qualitative assessment of potential risks.
Integration of climate change related risks in terms of the structures and processes above is work in progress. During 2011, the Group undertook a sustainability risk and opportunity identification and assessment processes across operations from a 'bottom-up' perspective, sourced from key operations representative of the Group (by material economic contribution). Top opportunities and risks are detailed for action and results reported at the Group level.

In 2011 the Group also implemented many of the recommendations of the King III Code on Corporate Governance Principles for South Africa, including an integrated risk and opportunity assessment process as recommended in the King III Code. Group Investor Relations, Stakeholder Management, Company Secretarial, Human Resources, Business Risk Management, and Sustainability jointly assessed the top 20 risks faced by MTN, and ensured that appropriate material group-level environmental and social risks were also integrated and responses to risks formulated. The results of the integrated assessment were reviewed and approved by the Group Executive and Group Board and published in the Group's Integrated Business Report (formerly annual financial report) in 2012 A more detailed top-down assessment was also undertaken between Group Business Risk Management, and Group Sustainability. A quarterly risk management and review process is under discussion, including the extension and amendment of the new risk management system to account for sustainability risks (existing and new), and mitigation and management.
Integrated Energy, Climate and Carbon-Related Opportunity Management process:

MTN is aware of the potential of mobile phones to transform emerging markets. ICT-based products and value-adding services in the health, agriculture, insurance, commerce and automation through smart solutuins and machine-to-machine applications have the potential to transform the lives of the more than 170 million subscribers (customers) and communities MTN services across Africa and the Middle East.
The power-balance between mobile operators and consumers is changing. Impetus for innovation comes from our social and natural environment. There is increasing global awareness around society's environmental impact, particularly energy and water resources.. The potential of global ICT and telecommunications to support social and environmental requirements is globally acknowledged by organisations such as the United Nations and the International Telecommunications Union.
MTN is cognisant of the International Telecommunications Union and Global e-Sustainability Initiative's Smart 2020 report which indicates that opportunity for the ICT sector to fulfil a positive role with respect to de-carbonisation and smart solution provision, and has started to offer these solutions. We are aware that ICT can help other industries reduce their environmental impact while maintaining business as usual, and that as a result of ICT dematerialisation, integration & M2M services can help industries save 7.8 GtCO2e & €600 bn OPEX by 2020 alone.
Innovation of a pillar of MTN's strategy and one of its five business values. MTN revamped its innovation programme through the creation of a dedicated innovation function under the offices of a Senior Vice President for Commercial and Innovation. Examples of the commercial application of energy and climate matters into products offered by MTN include water monitoring, a real-time report on water consumption and leaks, air quality monitoring for sulphur dioxide, nitrogen dioxide, carbon monoxide, ozone, PM10, benzene and lead for quality control by mines and other facilities, and automated meter management for energy consumption information. MTN's M2M technology uses on-property sensors to detect environmental events that could impact business and human conditions, and operates as wireless, wired, and hybrid management information systems available to a range of sectors from petro-chemical, fleet, consumer, healthcare, security, industrial, building control and energy sector companies. MTN also invested over R80 million in 2011 in expansion and upgrade of its key Southern African hub for offering cloud computing, server virtualisation and converged ICT solutions.
Please refer to the pertinent sections later in this report for more detail in this respect, and further review the Group's 2011 Sustainability Report on www.mtn.com/sustainability.

2.2

Is climate change integrated into your business strategy?

No

2.2a

Please describe the process and outcomes (see guidance)

2.2b

Please explain why not

Partial integration is underway through energy efficiency and e-waste initiatives in the business, and through innovation and product development, and integrated risk reporting. We are embedding sustainability in our organisation by establishing links with core risks, networks and technology, and opportunities for innovation, realising efficiency and generating revenue. Our sustainability agenda encompasses environmental, social and governance issues that are of importance to stakeholders, and that have a potential or realised material impact MTN's economic position.

However, complete integration from a business planning and strategic intervention design and implementation remains work in progress. Progress towards full integration include the following:

• The Group Sustainability Plan detailed to the end of 2011 identifies the required strategic, governance, resource, project and performance management processes required to ensure alignment and integration to the group's strategy.
• The plan was be updated by quarter 3, 2011.
• The Group 2012 - 2016 Business Plan pack, distributed to CEO and CFO of operations in June/ July 2012, will again contain pertinent environmental priroties, guidance and requirements for the business to take under consideration during the the strategic planning process.
• Through the process of conducting the carbon footprint, and through the high level discussion of climate risk, it is evident that there are definite elements of the Group business strategy which relate to climate change, and which will be individually listed and linked in the future (currently some climate change risks such as business continuity and broad environmental trends are already listed in the Group's risk universe under classifications other than environmental/ climate change). Listing these in a special environmental/ climate change category and expanding on the critical risks will help gather the necessary resources to address this in a more conscious manner internally.
• Similarly, the Group's planning processes through the annual Board and strategy planning and budgetary processes will need to take this into account
• Executive KPIs with respect to data centre energy efficiency, virtualisation of IT services, cloud computing, as well as targets for the increased use of energy efficiency solutions such as hybrid power and free cooling, amongst others, were in place for 2010-2011, but at this stage have not been finalised for 2012-2013, and are not yet based on a relative baseline to drive reductions.

2.3

Do you engage with policy makers to encourage further action on mitigation and/or adaptation?

Yes

2.3a

Please explain (i) the engagement process and (ii) actions you are advocating

MTN Group responded to the SA National Treasury's call for commentary on potential promulgation of carbon emission taxes, and participated in a detailed business-industry led study as well. We made avaialble R4 million in financial support to the Department of Environmental Affairs and Department of International Relations and Co-operation to facilitate hosting of UNFCCC COP 17 negotiations in Durban. We also participated in various COP 17 events, and sponsored the UNEP-Climate Action Business Leaders Network initiative. We also purchased 250 renewable energy certificates from a rural electrification (solar photovoltaic) project for 10,000 homes in KwaZulu-Natal, SA. The certificates were offered as gifts to the homes in the names of Achim Steiner, head of UNEP, HSH Albert II Prince of Monaco, patron of the billion tree campaign, and similar dignitaries to raise awareness of sustainable energy matters (these dignitaries received a retirable certificate each, with information and an explanation of the financial and environmental impact of this investment in communities). MTN operations engage with in-country environmental regulatory authorities with respect to offering quality of network services within legislated environmental requirements including noise emissions, etc. NGO advocacy includes support for the UNEP at UNFCCC COP events in 2010 and 2011, advisory and support to journalism students learning more about climate change through partner bodies, sponsorships such as Africa Utility Week, ITWEB for green technology, etc. aimed at enhancing understanding of environmental matters within the business sector. The Group also engages on climate change matters through the National Business Institute, and we hosts other corporates, secondary and tertiary level (and post-graduate) students, associations, government representatives and other parties at SA's tri-generation offgrid data and test switch in Johannesburg, to create awareness of potential solutions to energy insecurity and climate change. MTN Foundations, the corporate social investment arm of the MTN Group, operates in 11 of the 22 countries in which the Group conducts business. Many of these Foundations have elected to address environmental education, awareness and implementation projects related to deforestation, energy, water, health, and waste management in a number of countries, and often work in partnership with various UN agencies including the Environmental Programme and the Development Programme. We obtained permission from the UN in 2011 to utilise the International Year of Forestry logo on internal and external non-commercial communications in order to enhance awareness of environmental matters, and again in 2012 for the 2012 International Year of Sustainable Energy for All imperative. In line with its partnership with Eskom's 49M campaign, MTN SA tags 49M messaging, specifically around energy conservation and efficiency onto its "call back" facility, encouraging individuals and corporates to lead energy smart lifestyles. MTN operations are voluntarily participating the GSMA Mobile Energy Efficiency (MEE) Benchmarking for Mobile Networks' project to determine opportunities for reducing energy consumption, costs and emissions. GMSA hope to use this process to develop a network energy efficiency methodology that can be adopted as a global ICT industry standard. MTN's partnership with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on e-waste management aims to increase national awareness around e-waste.

Page: 3. Targets and Initiatives

3.1

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

No

3.1a

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

3.1b

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

3.1c

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	Comments

3.1d

Please provide details on your progress against this target made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment

3.1e

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

REASON FOR LACK OF TARGETS
• The Group has been working towards developing a representative, meaningful and material baseline of its energy use and associated greenhouse gas emissions from its networks and technology operations and facilities (the predominant driver of its emissions) since 2009. In 2010, the Group managed to determine its emissions representative of 62.2% of the business by subscriber number, and improved this to 77% of the business by subscriber number by the end of 2011. By completing the last tranche of its assessment, the Group will be more confident to set a relative emissions baseline in later 2012/ in 2013, subject to a number of internal planning variables.
• There was an increased effort to improve the quality of data management processes, in order to more fully understand and determine its current and future impact, taking into account potential network and business growth projections to the best of its ability.
• This improved data collection led to a more representative carbon emissions value for MTN Group and as such, will potentially become the baseline for MTN Group going forward.
• However, it is important to note that in spite of the lack of a baseline on which to set targets for reduction, the business is working actively to reduce energy use and carbon emissions, and in 2011, in spite of increases in subscriber numbers and business performance (which in the normal course of business should also be supported by increased energy use and emissions), the Group reduced its carbon emissions by 15,7% (more details contained within the rest of this report).
EMISSIONS FORECASTS
It is expected that when the remaining tranche of MTN operations not yet included in the 2011 energy review and carbon assessment are analysed in latter half of 2012, the Group's emissions will show an increase in line with the proportion of the number of network sites, data centres, switches and hubs in these operations. As these operations comprise just over 22% of the Group by subscriber numbers, it is not anticipated that the increase in forecast emissions will be material.
Emissions forecasts are further dependent on a number of business growth factors and operational management matters and therefore the ingoing investment in ICT-intensive infrastructure and services will also see an increase in greenhouse gas emissions,
The forecasted increase in emissions is expected to be offset by a strong cost and environmental drive from the Group to reduce energy consumption. This is being achieved through engineering improvements and investments in alternative energy sites across our operations.
The Group is currently assessing this impact and developing forecasts, and is therefore not in a position to indicate emissions forecasts quantitatively.

3.2

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

Yes

3.2a

Please provide details (see guidance)

Integrated Energy, Climate and Carbon-Related Opportunity Management process:
MTN is aware of the potential of mobile phones to transform emerging markets. ICT-based products and value-adding services in the health, agriculture, insurance, commerce and automation through smart solutions and machine-to-machine applications have the potential to transform the lives of the more than 170 million subscribers (customers) and communities MTN services across Africa and the Middle East.
The power-balance between mobile operators and consumers is changing. Impetus for innovation comes from our social and natural environment. There is increasing global awareness around society's environmental impact, particularly energy and water resources.. The potential of global ICT and telecommunications to support social and environmental requirements is globally acknowledged by organisations such as the United Nations and the International Telecommunications Union.
MTN is cognisant of the International Telecommunications Union and Global e-Sustainability Initiative's Smart 2020 report which indicates that opportunity for the ICT sector to fulfil a positive role with respect to de-carbonisation and smart solution provision, and has started to offer these solutions. We are aware that ICT can help other industries reduce their environmental impact while maintaining business as usual, and that as a result of ICT dematerialisation, integration & M2M services can help industries save 7.8 GtCO2e & €600 bn OPEX by 2020 alone.
Innovation of a pillar of MTN's strategy and one of its five business values. MTN revamped its innovation programme through the creation of a dedicated innovation function under the offices of a Senior Vice President for Commercial and Innovation. Examples of the commercial application of energy and climate matters into products offered by MTN include water monitoring, a real-time report on water consumption and leaks, air quality monitoring for sulphur dioxide, nitrogen dioxide, carbon monoxide, ozone, PM10, benzene and lead for quality control by mines and other facilities, and automated meter management for energy consumption information. MTN's M2M technology uses on-property sensors to detect environmental events that could impact business and human conditions, and operates as wireless, wired, and hybrid management information systems available to a range of sectors from petro-chemical, fleet, consumer, healthcare, security, industrial, building control and energy sector companies. MTN also invested over R80 million in 2011 in expansion and upgrade of its key Southern African hub for offering cloud computing, server virtualisation and converged ICT solutions. Please refer to the pertinent sections later in this report for more detail in this respect, and further review the Group's 2011 Sustainability Report on www.mtn.com/sustainability.

3.3

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

3.3a

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

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

3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Energy efficiency: processes	Energy efficient design, engineering solutions and a strong focus on reducing energy use in networks sites, hubs, switches, data centres and key facilities through the use of solutions such as outdoor sites, free cooling, deep-cycle batteries, combined heating/ cooling, smart metering and monitoring of energy consumption , wind, solar, weather and batteries, rapid site deployment and radio equipment power-saving features across all 21 MTN operations over 2011 resulted in carbon savings of 15,7% as compared to 2010. Some operations have deployed Hybrid Genset (HGS) solutions consisting of technology working in cycling mode from 12 hours on gensets to 12 hours - 24 hours on batteries depending on the power load. As a result, sites save about 50% on fuel and 50% in maintenance fees. CO2 output is also reduced by about 50%. The aim of this activity is to decrease the dependence on diesel at base station sites, thereby targeting Scope 1 emissions. This is a voluntary activity and is currently in being executed with measurable success. The modernisation of the radio network base stations will be key to driving down MTN's energy consumption as well as carbon footprint. MTN anticipates it can achieve as much as 40% reduction in consumption on the modernised base station. During 2011 diesel use to power operations for MTN decreased by 27% which has lowered costs as well as GHG emissions. To improve data centre energy effi ciency, we have adopted the Green Grid standard for	176327			>3 years

Activity type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
	constant monitoring of Power Usage Effectiveness (PUE)) metrics to make energy efficiency improvements. We have also adopted the European Union Code of Conduct for Data Centre for building and power effi ciency. Our operating countries are clustered into regional shared service hubs, and we have consolidated infrastructure to save space and reduce cooling (and other) costs, which could have the benefit of improved energy efficiencies.				
Energy efficiency: building services	MTN's 14th Avenue Head Office in South Africa is in the final stages of gold standard Leadership in Energy and Environmental Design assessment, and has incorporated requirements to improve the efficiency of the building (including energy consumption and efficiency, water consumption and efficiency, policies and indoor environmental quality). Opportunities to specifically improve energy use and efficiency and reduce consumption include the following: energy metering, reduction of printers, policy development, awareness programme, use of timer switches, phase 1 building kitchen gas conversion, use of LED lamps, use of protective window film to reduce solar radiation and cooling requirements, fluorescent lamp replacement, task lighting, solar energy for exterior lighting, irrigation control and geyser water heating, lighting automation, green roofing. MTN Nigeria are constructing a new building for the networks division. This project is adopting BREEAM green building guidelines to reduce energy consumption. The Head Office in South Africa has also built a @MW tri generation gas facility on site which has the ability to provide 30% of the campus energy required, and a similar 4 MW building is final stages of development in another part of the country. The MTN Business (Internet Service Provider services) building in Sandton has invested in a number of energy efficiency initiatives as part of its R80 m infrastructure upgrade to offer cloud computing services to corporates. Initiatives across other facilities include replacement of generators, air-conditioners and uninterrupted power supplies across regions and, investment in audio-visual equipment for video and teleconferencing. Implementation and reporting will span multiple reporting periods. The aim of this activity is to decrease the use of electricity at Head Office buildings by implementing various energy efficient measures. Estimated CO2 savings are still being calculated and not available for this reporting period. The annual monetary savings >R4million in year 1 are for MTN SA's green building and tri-generation plant for 2011 only, and is reported as an unaudited figure. The investment required of R22 million is also for MTN SA's 2MW tri-generation site only.		4000000	22000000	>3 years
Low carbon energy installation	Across more than 12 of MTN's operations, low carbon investments in live (operational) in network sites include the following: hybrid solar, solar, wind, hydrogen fuel cells, dairy bio-gas and natural gas. Trials are also underway and could include waste to energy solutions.				>3 years

Activity type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
	Estimated CO2 savings are included in 76,327 reported above as each site is assessed for total energy and carbon savings from a range of process, engineering and alternative energy investments				

3.3c

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

Method	Comment
Lower return on investment (ROI) specification	As part of business case development, MTN determines the breakeven point and return on investment period.
Other	As part of the Group's Climate Management strategy, MTN plans to enhance business case development through calculation of emissions savings as part of financial trade-off decision-making, and in the case of South African operations in particular, calculations will also include potential carbon tax liability implications of infrastructure investments.

3.3d

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

Page: 4. Communication

4.1

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

Publication	Page/Section Reference	Identify the attachment
In voluntary communications (underway) – this is our first year	Pages 9. 13, 76-77	http://www.mtn.com/Sustainability/Documents/tabs/PDF/Integrated_Business_Report2011.pdf
In voluntary communications (complete)	Page 21-28; 35-36; 41-47	http://www.mtn.com/Sustainability/Documents/tabs/PDF/MTN_Sustainabilty_report2011.pdf
In other regulatory filings (complete)	Annual environmental and Climate Change reports submitted to the Johannesburg Securities Exchange SRI index	Not attached
In voluntary communications (complete)	Pg 111	http://www.climateactionprogramme.org/bookstore/book_2011/

Further Information

Please access the publications on www.mtn.com and on www.climateactionprogramme.org as per the URL links above

Module: Risks and Opportunities [Investor]

Page: 2012-Investor-Risks&Opps-ClimateChangeRisks

5.1

Have you identified any climate change risks (current or future) that have 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

5.1a

Please describe your risks driven by changes in regulation

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
1	Carbon taxes	South Africa is considering the implementation of a domestic carbon tax. A discussion document was released in 2010 and is currently in the process of being updated based on public comments and further analysis. The updated discussion document is expected to be released in 2012, which will provide the final design of the proposed scheme. In the interim, the 2012/13 budget review outlined the following proposed elements of a future carbon tax in South Africa:	Increased operational cost	1-5 years	Direct	Virtually certain	Medium-high
2	Uncertainty surrounding new regulation	The National Climate Change Response White Paper, released towards the end of 2011, identifies the importance of a National GHG emissions inventory that will ensure an effective response to Climate Change. In order to achieve this, the DEA will prepare a GHG Emissions Inventory annually. It will conform to the IPCC's 2006 or later guidelines and will be periodically reviewed. Under this framework, reporting of emissions data will be made mandatory for entities that emit more than 100,000tCO2e annually, or consume electricity which results in more that 100,000tCO2e from the electricity sector. Qualifying entities will also be obliged to report energy use by energy carrier. MTN will therefore be required to report GHG emissions data because GHG emissions from purchased electricity (Scope 2) exceeds 100,000 tCO2e. MTN has a mature emission reporting system and the emissions footprint has been disclosed in the public domain via the CDP report. We have also voluntarily been participating in the CDP since 2009. The risk is that companies that	Increased operational cost	1-5 years	Direct	Virtually certain	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		are required to annually report emissions may be subject to stricter controls/efficiency targets and these will therefore increase costs of the business.					
3	Fuel/energy taxes and regulations	Fuel subsidies have been removed in Nigeria. There are concerns in Ghana about regulated tariff increases on electricity and diesel	Increased operational cost				

5.1b

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

1 i.) Like other consumers, MTN South Africa will be taxed R120/tCO2e on its emissions. Under the current proposal MTN does not fall into the category of high-consuming, energy-intensive industries and companies, and therefore will not receive any allowances on its emissions. MTN bought 184 GWh of electricity during FY11. If a carbon tax of R120 is imposed on Eskom, the national utility, it will more than likely pass the cost on to consumers, it will result in an increase in electricity in year 1 of R0.04/kWh. This is the liability however is subject to the final carbon tax regulation promulgation anticipated in 2012/ 2013.
ii.) We are working to reduce the impact of a potential CO2 tax by optimising energy efficiency at technical and non-technical sites and implementing alternative energy. This will also result in a decrease in carbon emissions. This risk is managed by MTN SA Networks and MTN Group Sustainability. In conjunction with this the Group Sustainability Manager will endeavour to engage in policy dialogue and advocacy with government to ensure that carbon budgets and the design of the tax captures the operational realities of the sector and company.
iii.)Investment made in energy efficiency and alternative energy has been ongoing in all operations and costs specifically to reduce carbon emissions and tax risks are not isolated currently as part of the business case. The carbon tax only poses a direct threat to MTN South Africa, however it may become a reality in other operations. An example of investment in alternative in South Africa is the 2MW Trigen facility at the Head Office Campus in Johannesburg. MTN invested R22million in the project and it has resulted in halving MTN's energy demand at head office. This equates to a saving of ZAR 1,500,000 in Year 1 (August 2010 – August 2011); ZAR 3,200,000 in Year 2, and ZAR 5,300,000 in year 3.

2 i) As mentioned in point 1, MTN South Africa will be required to improve efficiencies to ensure that their exposure to risks like the carbon tax are as small as possible. The costs of the carbon tax have been quantified as being in the region of R18m to R23m in year 1 of tax implementation, but the final assessment is subject to the rate and any tax-free allowance publications by the government. This, as well as investment in energy efficiency and alternative energy, will constitute a substantial cost to the business.
ii.)MTN is reducing the impact of a potential Carbon Tax by optimizing energy efficiency at its technical and non-technical sites and looking to implement alternative energy at these sites as well. This will in turn result in a decrease in carbon emissions. This risk is managed by Group Networks and Group Sustainability. In conjunction with this the Group Sustainability Manager will endeavour to engage in policy dialogue and advocacy with government to ensure that carbon budgets

and the design of the tax captures the operational realities of the sector and company.
iii.) Investment made in energy efficiency and alternative energy has been ongoing in all operations. The carbon tax only poses a direct threat to MTN South Africa, however it may become a reality in other countries where MTN operates. An example of investment in alternative in South Africa is the 2MW Trigen facility at the Head Office Campus in Johannesburg. MTN invested R22million in the project and it has resulted in reducing dirty energy energy on site by approximately 30% (and has helped mitigate energy insecurity risks). OPEX savings were estimated at ZAR 1,500,000 in Year 1 (August 2010 – August 2011); ZAR 3,200,000 in Year 2, and ZAR 5,300,000 in year 3. A similar 4 MW implementation in Centurion, South Africa will also mitigate this risk, as has MTN South Africa's investment in 22 wind, solar and hybrid offgrid network sites, and more efficient data centres at its internet service provider hosting site.

3 i.) The risk for Nigeria materialised in January 2012. Investments in energy efficiency and alternative energy are being driven strategically and operationally by MTN Nigeria to mitigate energy insecurity, costs and environmental impact. In addition to the general range of energy efficiency and alternative energy solutions as described in "Targets and Initiatives" section of this report, MTN Nigeria has rolled out Phase 1 of project to provide connectivity to rural villages: 252 solar- powered BTS sites now telecommunications connectivity to 308 villages since the beginning of 2011. This has reduced the use of diesel by 331,128 litres , and electricity use by 130,613 kw, monthly. MTN Nigeria, the largest consumer of energy in the Group, is also undertaking 6 types of initiatives in order to address energy efficiency. These include implementation of hybrid solutions to reduce diesel use, off-peak power solutions, network optimisation to outdoor platforms, backbone site power optimisation , and power retrofits.

5.1c

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

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
1	Other physical climate drivers	All MTN countries of operation are included in this section. The risk is an increased incidence of lightning strikes and high winds during storms. The risk and associated financial costs will be greater for BTS sites, switches and data centres than for other infrastructure.	Reduction/disruption in production capacity	Unknown	Direct	Very likely	Medium-high
2	Induced changes in natural resources	All MTN countries of operation are included in this section. The risk is an increased mean surface temperature. The risk and associated financial costs of will be greater for BTS sites, switches and data centres than for other infrastructure due to the required optimal operating temperatures of the equipment used at these sites. Operating countries in the Middle East are especially at risk to this change in surface temperature. By 2100, temperature would have risen by 5	Increased operational cost	>10 years	Direct	More likely than not	Medium-high

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		degrees celcius, adding increased cost to management of BTS sites. The increased costs are particularly around increasing energy costs for cooling.					
3	Uncertainty of physical risks	All MTN countries of operation are included in this section. The risk is the uncertainty surrounding the magnitude and timescale of potential physical risks and the ability to plan more effectively as a result.	Inability to do business	Unknown	Direct	More likely than not	Medium-high

5.1d

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

i) MTN's operations are susceptible to the forces of extreme weather events which can interrupt business continuity and damage infrastructure. In particular, the sites may be located in areas which are affected by lightning and storms. Costs associated with flooding incidents have historically been much lower and few incidents have been reported. An increase in events coupled with rising repair prices and/ or insurance costs could have a financial impact on MTN.

(ii) MTN understands that the effect of climate change may exacerbate these effects, potentially impacting the business further. As such MTN realises the need to quantify the effects of these possible changes in the climate on physical assets, and ensure that these risks are mitigated. MTN manages existing weather related risks by ensuring that sites are developed in a manner which reduces the risk e.g. raising the level of the site or key equipment and ensuring adequate drainage to reduce the risk of flooding. These actions do not necessarily give rise to significant costs if done in the planning stages. MTN is currently in the early phase of managing climate change across the group. The next phase in this process will involve creating databases of all infrastructure and associated geographical positions in all operations. MTN then intends to understand how a changing climate will impact its most material assets, and apply a quantitative analysis to this. This process is expected to span the medium term/ multiple reporting processes.
As part of the carbon footprint development, training on climate change, carbon footprint methods, as well as the associated climate risks and opportunities has taken place, and further plans to operationalise training on an on-demand and scheduled basis for a larger base of staff are currently underway.

(iii) Costs associated with creating a database of infrastructure have yet to be fully realised as the process is still in its infancy. The current carbon footprint study that is carried out annually helps identify areas that require increased efficiency to decrease operational costs. Carrying out quantitative analysis of the impacts of climate change will fall under the broader scope of a holistic climate change strategy. This strategy will be complete in the medium term and will drive future climate decisions and targets for MTN Group. During 2011 MTN rolled out internal training material with respect to carbon footprinting, encompassing energy efficiency for 9 of its OPCO's focussing on the risks (physical, reputational) climate change presents to MTN.

5.1e

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

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact

5.1f

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; (iii) the costs associated with these actions

5.1g

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

5.1h

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

5.1i

Please explain why you do not consider your company to be exposed to 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

Page: 2012-Investor-Risks&Opps-ClimateChangeOpp

6.1

Have you identified any climate change opportunities (current or future) 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

6.1a

Please describe your opportunities that are driven by changes in regulation

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
1	International agreements	MTN South Africa's 2-megawatt (MW), methane-driven tri-generation power plant at the 14th Avenue Head Office is the first of its kind on the African continent. The tri-gen project enabled MTN to be the first telecoms company in Africa to have a new Methodology approved by the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM) Executive Board, for such an installation to claim carbon credits. The tri-gen project has resulted in increased energy security in an energy constrained	Increased demand for existing products/services	Current	Direct	Virtually certain	Medium-high

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
		economy; avoidance of energy price increases; reduced exposure to potential carbon taxes; and a reduction of the Group carbon footprint. The success of this project has led to further investigations of implementation around the Group.					

6.1b

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

1.) International Agreements
(i) CDM projects can earnt saleable certified emission reduction (CER) credits, each equivalent to one tonne of CO2, which can be counted towards meeting Kyoto targets. MTN South Africa's 2-megawatt (MW), methane-driven tri-generation power plant at the 14th Avenue Head Office MTN to be the first telecoms company in Africa to have a new Methodology approved by the UNFCCC CDM Executive Board, for such an installation to claim carbon credits. The tri-gen project has resulted in increased energy security in an energy constrained economy; avoidance of energy price increases; reduced exposure to potential carbon taxes; and a reduction of the Group carbon footprint. The tri-generation plant has resulted in the avoidance of 8,585 tonnes in 2011 from carbon intensive electricity generation. The current price of CER's is roughly 4 Euros. Therefore 34,340 Euros of income would be generated by the first year of carbon credit generation.
(ii) The annual carbon footprint will enable MTN to plot the consumption patterns of various sites (including the tri-generation facility) and will enable MTN to identify savings made in terms of carbon emissions and cost. This will in turn identify the effectiveness of projects that fall under the scope of CDM. MTN started to develop a climate change management strategy starting in November 2011. This strategy aims to identify and prioritise specific areas of concern within the organisation to support future decision-making to reduce energy consumption and lower emissions as well as costs. CDM opportunities fall within the scope of quantifiable opportunities that MTN can take advantage of and these will be identified in the climate change strategy.
(iii) The cost of the TriGen facility was roughly R22 million. The credits are valued at approximately R15 million.

6.1c

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

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
2	Change in precipitation extremes and droughts	Ericsson, MTN, the World Meteorological Organization (WMO), the Uganda Department of Meteorology, the National Lake Rescue Institute and Kalangala Fishing community have in a a unique partnership combined mobile technology, weather expertise and local know-how to provide a localised weather alert service to fishing villages on Lake Victoria. MTN Uganda, in partnership with the Uganda Department of Meteorology (UDoM) is now delivering this mobile service for free to their customers. The weather information will enable fishers and traders to make better decisions on when and where to go fishing in Lake Victoria, thus helping to save lives and livelihoods. This service offering follows a successful pilot project, run over the preceding year, by WMO and Ericsson in partnership with MTN, the Uganda Department of Meteorology and the National Lake Rescue Institute. The project delivered daily weather forecasts and well-timed warnings in local languages to 1000 fishermen from the Kalangala District of Lake Victoria. The pilot involved training 19 community leaders in basic understanding of weather forecasts, how to send messages and how to respond to various alerts. Equipped with mobile phones, the community leaders then passed on this knowledge to fishermen and traders to sign up to the Mobile Weather service.					

6.1d

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

Ericsson, MTN, the World Meteorological Organization (WMO), the Uganda Department of Meteorology, the National Lake Rescue Institute and Kalangala Fishing community have in a a unique partnership combined mobile technology, weather expertise and local know-how to provide a localized weather alert service to fishing villages on Lake Victoria. MTN Uganda, in partnership with the Uganda Department of Meteorology (UDoM) is now delivering this mobile service for free to our customers. The weather information enables fishers and traders to make better decisions on when and where to go fishing in Lake Victoria, thus helping to save lives and livelihoods. This service offering follows a successful pilot project, run over the preceding year, by WMO and Ericsson in partnership with MTN, the Uganda Department of Meteorology and the National Lake Rescue Institute. The project delivered daily weather forecasts and well-timed warnings in local languages to 1000 fishermen from the Kalangala District of Lake Victoria. The pilot involved training 19 community leaders in basic understanding of weather forecasts, how to send messages and how to respond to various alerts. Equipped with mobile phones, the community leaders then passed on this knowledge to fishermen and traders to sign up to the Mobile Weather service.

6.1e

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

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
1	Other drivers	According to the Gartner Group, while the ICT sector plans to significantly step up own energy efficiency, its largest influence will be by enabling energy efficiency in other sectors. The opportunity exists for MTN to develop solutions to help de-carbonise other sectors of economies through dematerialisation (e.g. replacement of physical travel through increased use of teleconferencing, or replacement of physical servers with virtual servers), efficiencies in transport and storage logistics, smart building technologies or information solutions for energy efficiency (e.g. for data centres) and improved management and monitoring of electricity grids (smart grids). ICT companies can help other sectors optimise how they operate, and how society works and lives to lower impact businesses. In so doing, ICT companies will be in a position to contribute in the fight against rising emissions and global warming. MTN is currently driving machine to machine (m2m) technology solutions to enable energy efficiency and environmental monitoring in other sectors. By using this technology, other sectors will have up-to-date data at their finger-tips at all times, enabling them to make informed decisions on ways forward and possible solutions. Amongst other benefits, this enables corporate and industrial customers to improve energy efficiency. MTN's telemetry partnerships include an application for fleet management, allowing companies to track vehicle movement in real-time, monitor aspects such including fuel cap and ignition access, thereby controlling fuel management, MTN's smart office management allows clients to track work flows of mobile workers, while Mobile Surveys allows for paperless surveys. MTN Business offers data centre solutions to clients.	New products/business services	1-5 years	Indirect (Client)	Very likely	Medium-high
2	Reputation	The opportunity to enhance reputation through proactive action on	Wider social	1-5 years	Indirect	Very likely	Medium

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		climate change and management/ reduction of carbon footprints, along with embracing more responsible technologies, and helping address consumer behaviour change through messages via text, billing, etc (e.g. remove chargers from sockets or use solar chargers) could result in customer and staff attraction and retention.	benefits		(Client)		

6.1f

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

(1.) Other drivers – enabling energy efficiency in other sectors
(i) MTN is currently driving M2M technology to enable energy efficiency in other sectors. M2M uses a device (sensor, meter, etc.) to capture an 'event' (inventory level, energy use, etc.), which is relayed through a network (wireless, wired or hybrid) to an application (software program), that translates the captured event into meaningful information (e.g. trends/spikes). By using this technology, other sectors will have up-to-date data at their finger-tips at all times, enabling them to make informed decisions on ways forward and possible solutions. Providing a financial benefit from this action may prove difficult as many of the technologies that MTN can offer to increase energy efficiency in other sectors will only mature in the next 6 – 10 years. However internal business cases developed and subsequently approved for the commercialisation of these innovations indicate an attractive payback period. (ii) There is a specific team within MTN's Innovation Centre that is responsible for managing this opportunity and driving M2M forward into other sectors. These sectors include consumer, energy, utilities and industrial control. (iii) Costs are considered business development costs and cannot be provided.

(2.) Reputation
(i) The financial benefits gained from enhancing reputation by becoming a proactive climate change driven brand are difficult to quantify but will be represented by increased revenue driven by an increase in sales and subscribers. (ii) This opportunity would be managed through engagement with the public through the PR/marketing divisions of MTN and reporting obligations. The CDP provides a good indicator to investors and other interested parties as the initiatives that MTN are implementing to improve their environmental performance. It is important that MTN show the public what solutions have been implemented and how these solutions are resulting in a cleaner service being provided but also a more reliable service that is not exposed to the risks associated with climate change. MTN's climate change strategy would also include analysis and identification of the risks and opportunities that MTN faces by either not acting or acting on climate change and how this would affect revenue and potential subscribers. (iii) The costs associated with this would be included in the budget of the public relations and marketing departments. Reputational opportunities will also be addressed in the climate change strategy.

6.1g

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

6.1h

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

6.1i

Please explain why you do not consider your company to be exposed to 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

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading [Investor]

Page: 7. Emissions Methodology

7.1

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

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Sat 01 Jan 2011 - Sat 31 Dec 2011	536541	407492

7.2

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)
ISO 14064-1

7.2a

If you have selected "Other", please provide details below

7.3

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

Gas	Reference
CH4	IPCC Second Assessment Report (SAR - 100 year)
N2O	IPCC Second Assessment Report (SAR - 100 year)

Gas	Reference
CO2	IPCC Second Assessment Report (SAR - 100 year)
Other: HCFC-22	Other: GHG Protocol
Other: HFC-134a	Other: GHG Protocol
Other: R502	Other: GHG Protocol
Other: R22	Other: GHG Protocol
Other: Fire suppression equipment	Other: Business commentary

7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/Energy	Emission Factor	Unit	Reference
Motor gasoline	0.03	Other: GJ/L	
Motor gasoline	0.07	metric tonnes CO2 per GJ	
Motor gasoline	0.00	Other: Tonnes CH4/GJ	
Motor gasoline	0.00	Other: Tonnes N2O/GJ	
Diesel/Gas oil	0.04	Other: GJ/L	
Diesel/Gas oil	0.7	metric tonnes CO2 per GJ	
Diesel/Gas oil	0.00	Other: Tonnes CH4/GJ	
Diesel/Gas oil	0.00	Other: Tonnes N2O/GJ	
Diesel/Gas oil	43.00	Other: MJ/kg	
Liquefied petroleum gas (LPG)	47.30	Other: MJ/kg	
Liquefied petroleum gas (LPG)	17.20	Other: kg C/GJ	
Liquefied petroleum gas (LPG)	0.00	Other: kg CH4/GJ	
Liquefied petroleum gas (LPG)	0.00	Other: kg N2O/GJ	
Natural gas	48.00	Other: MJ/kg	
Natural gas	15.30	Other: kg C/GJ	
Natural gas	0.00	Other: kg CH4/GJ	
Natural gas	0.00	Other: kg N2O/GJ	

Page: 8. Emissions Data - (1 Jan 2011 - 31 Dec 2011)

8.1

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

Financial control

8.2a

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

536541

8.2b

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

Boundary	Gross global Scope 1 emissions (metric tonnes CO2e)	Comment

8.2c

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

Gross global Scope 1 emissions (metric tonnes CO2e) – Part 1 Total	Comment

8.2d

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e - Part 2

Boundary	Gross global Scope 1 emissions (metric tonnes CO2e)	Comment

8.3a

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

407492

8.3b

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 1 breakdown

Boundary	Gross global Scope 2 emissions (metric tonnes CO2e)	Comment

8.3c

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 1 Total

Gross global Scope 2 emissions (metric tonnes CO2e) - Total Part 1	Comment

8.3d

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

Boundary	Gross global Scope 2 emissions (metric tonnes CO2e) - Other operationally controlled entities, activities or facilities	Comment

8.4

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

8.4a

Please complete the table

Reporting Entity	Source	Scope	Explain why the source is excluded

8.4

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

Yes

8.4a

Please complete the table

Source	Scope	Explain why the source is excluded
Certain OPCO's not included	Scope 1 and 2	The remaining geographies that were excluded only account for 5% of MTN Group revenue and 22% of total subscriber numbers therefore it was decided that their emissions would not have a material overall impact. These operations will be analysed during latter 2012.

8.5

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

Scope 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
More than 2% but less than or equal to 5%	Data Gaps Metering/ Measurement Constraints	The uncertainty found in the data will continue to decrease as the carbon footprint data collection process becomes more institutionalised in in each country in which MTN operates (OPCO).	More than 2% but less than or equal to 5%	Data Gaps Metering/ Measurement Constraints	The uncertainty found in the data will continue to decrease as the carbon footprint data collection process becomes more institutionalised in each OPCO at MTN.

8.6

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

Not verified or assured

8.6a

Please indicate the proportion of your Scope 1 emissions that are verified/assured

8.6b

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached

8.7

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

Not verified or assured

8.7a

Please indicate the proportion of your Scope 2 emissions that are verified/assured

8.7b

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached

8.8

Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?

No

8.8a

Please provide the emissions in metric tonnes CO2e

Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2011 - 31 Dec 2011)

9.1

Do you have Scope 1 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

9.1a

Please complete the table below

Country	Scope 1 metric tonnes CO2e
Nigeria	432462
Uganda	41298

Country	Scope 1 metric tonnes CO2e
Ghana	25787
Cameroon	12408
South Africa	12241
Iran, Islamic Republic of	8950
Syrian Arab Republic	2515
Swaziland	536
Other: MTN Business	344

9.2

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

By activity

9.2a

Please break down your total gross global Scope 1 emissions by business division

Business Division	Scope 1 metric tonnes CO2e

9.2b

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

Facility	Scope 1 metric tonnes CO2e

9.2c

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

GHG type	Scope 1 metric tonnes CO2e

9.2d

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

Activity	Scope 1 metric tonnes CO2e
Stationary combustion	507463
Mobile combustion	25053
Refrigerant usage	4026
Fugitive emissions	1

Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2011 - 31 Dec 2011)

10.1

Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

10.1a

Please complete the table below

Country	Scope 2 metric tonnes CO2e
South Africa	182458
Iran, Islamic Republic of	103992
Nigeria	32956
Other: MTN Business	23582
Syrian Arab Republic	23431
Ghana	22490
Uganda	8703
Swaziland	5269
Cameroon	4611

10.2

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

By facility

10.2a

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

Business division	Scope 2 metric tonnes CO2e

10.2b

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

Facility	Scope 2 metric tonnes CO2e
BTS sites	282282
Switches	72447
Head/regional offices	29110
Data centres	23653

10.2c

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

Activity	Scope 2 metric tonnes CO2e

Page: 11. Emissions Scope 2 Contractual

11.1

Do you consider that the grid average factors used to report Scope 2 emissions in Question 8.3 reflect the contractual arrangements you have with electricity suppliers?

Yes

11.1a

You may report a total contractual Scope 2 figure in response to this question. Please provide your total global contractual Scope 2 GHG emissions figure in metric tonnes CO2e

11.1b

Explain the basis of the alternative figure (see guidance)

11.2

Has your organization retired any certificates, e.g. Renewable Energy Certificates, associated with zero or low carbon electricity within the reporting year or has this been done on your behalf?

No

11.2a

Please provide details including the number and type of certificates

Type of certificate	Number of certificates	Comments

Page: 12. Energy

12.1

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

More than 10% but less than or equal to 15%

12.2

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

Energy type	MWh

Energy type	MWh
Fuel	1958656
Electricity	683014
Heat	0
Steam	0
Cooling	0

12.3

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

Fuels	MWh
Diesel/Gas oil	1907840
Motor gasoline	50816

Page: 13. Emissions Performance

13.1

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

Decreased

13.1a

Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Change in boundary	2	Decrease	MTN Zambia data was not available for the 2011 report scope. At less than 8% relative group carbon footprint contribution based on historical data, this is not considered a material factor in the reduction
Emissions reduction activities	7	Decrease	Energy efficiency and alternative energy measures are being implemented across the Group and in those countries that are being reported on. See full range of solutions as described in 3.3.b of this report.
Other: Moving from diesel to grid electricity power	7	Decrease	In many African countries, the supply of grid electricity is unstable. However in many countries that MTN operate in, efforts have been made to utilise what little grid is available more efficiently. Voltage stabilizers have been implemented that enable grid power to be used reliably. Also, MTN has made efforts to connect into national grids where it previously was not possible, especially where these grids are alternatively-powered e.g. hydro-powered grids in some parts of Africa. A shift away from diesel has seen a decrease in total emissions.

13.2

Please describe your gross 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
0.000008	metric tonnes CO2e	unit total revenue	14	Decrease	Scope 1 and Scope 2 emissions have decreased while revenue has increased. This has led to a 14% decrease in this metric.

13.3

Please describe your gross 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
43	metric tonnes	FTE Employee	39	Decrease	A reduction of 6.9% in FTE staff and a 15,7%

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for Change
	CO2e				reduction in CO2 emissions over 2011.

13.4

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
0.006	metric tonnes CO2e	Other: Number of subscribers	33	Decrease	Subscriber numbers increased from 141.6 million in 2010 to 164.5m in 2010. This, coupled with an decrease in the carbon emissions reported due to emission reduction initiatives from engineering, design and alternative energy interventions has resulted in a reduction of the carbn footprint.

Page: 14. Emissions Trading

14.1

Do you participate in any emission trading schemes?

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

14.1a

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

14.1b

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

14.2

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

Yes

14.2a

Please complete the following table

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 retired	Purpose e.g. compliance
Credit Origination	Energy efficiency: own generation	2 Megawatt Tri Generation with Methane Gas (the first Tri-Generation Plant with absorption cooling) completed at the 14th Avenue Head Office site. MTN South Africa’s 2-megawatt (MW), methane-driven tri-generation power plant at the 14th Avenue Head Office is the first of its kind on the African continent. The energy generated is used to power some of MTN South Africa's	CDM	112335		Not relevant	Voluntary Offsetting

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 retired	Purpose e.g. compliance
		data and switching centre's and server rooms. The heat that is generated as a by-product of the process is sent through lithium bromide absorption chillers to cool water, which is then used for the cooling air for electronic equipment, as well as for office air-conditioning needs. The tri-gen project enabled MTN to be the first telecoms company in Africa to have a new Methodology approved by the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM) Executive Board, for such an installation to claim carbon credits. The aim of this activity is to decrease the use of electricity. This would target Scope 2 emissions and is a voluntary activity. This initiative is currently in operation with measurable success.					
Credit Origination	Energy efficiency: own generation	A tri-generation Programme of Activities for a number of MTN South Africa network sites is currently under development, and if successful will be verified to the CDM standard. The number of credits that will be generated is still under assessment.	Not Yet Verified				

Page: 2012-Investor-Scope 3 Emissions

15.1

Please provide data on sources of Scope 3 emissions that are relevant to your organization

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them
Business travel	6531	Scope 3 emissions account for other indirect emissions associated but not controlled by the company. In this case Scope 3 emissions include air travel and business mileage from rented vehicles only.	

15.2

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

Not verified or assured

15.2a

Please indicate the proportion of your Scope 3 emissions that are verified/assured

15.2b

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached

15.3

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

Yes

15.3a

Please complete the table

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Business travel	Other: Improved data collection for scope 3 emissions	38	Increase	Improved data collection as a result of improved travel management has seen emissions associated with business travel increase.

Module: 2012-Investor-ICT

Page: 2012-Investor-ICT-ICT1.DataCenterActivities

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"

As an ICT operator, data centres offer core and essential services to both the business operations, and for commercial revenue-generating services (fixed and mobile network access, networking, security, internet service provider solutions, Software as a Service (SaaS) applications, etc).

ICT1.2

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

Business Activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)
Data centers	201	23653

ICT1.3

Please provide the annual electricity consumption of your data center(s) in MWh

23989

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 which you wish to provide (tick all that apply)

ICT1.4a

Please provide your average PUE across your data centers

Average PUE	Comment

ICT1.4b

Please provide the range of PUE values across your data centers

PUE Minimum Value	PUE Maximum Value	Comment

ICT1.4c

Please provide your PUE values of all your data centers

Data center reference	PUE value	Comment

ICT1.5

Please provide details of how you have calculated your PUE value

ICT1.6

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

Energy efficiency measure	Comment
Cooling Efficiencies	Hot aisle/cold aisle alignment
Server Virtualization	MTN operating country data environments are being clustered into regional shared service hubs to achieve greater efficiencies, and infrastructure consolidation & virtualisation initiatives save space & reduce cooling (and other) costs
Server Consolidation	MTN operating country data environments are being clustered into regional shared service hubs to achieve greater efficiencies, and infrastructure consolidation & virtualisation initiatives save space & reduce cooling (and other) costs
Power Management Efficiencies	Lighting sensors

ICT1.7

Please describe the measures you are planning to implement to increase the energy efficiency of your data center(s)

Energy efficiency measure	Comment
Other	We are trailing the use of of blower doors on Room Air Condtioner (RAC) units to decrease need for air-conditioned cooling. This method blows air directly onto RAC units from air cooled by water piped in to doors. We are also assessing the use of desiccants

ICT1.8

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

ICT1.8a

What methodology do you use to calculate this?

ICT1.9

Do you provide carbon emissions data to your clients?

No

ICT1.9a

How do you do this?

ICT1.10

Do you participate in any other data center efficiency schemes (e.g. The Green Grid, EU Code of Conduct, etc)?

Yes

ICT1.10a

Please provide details

MTN Group has adopted both the Green Grid and EU Code of Conduct to improve data centre efficiency.

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

2 Megawatt Tri Generation with Methane Gas (the first Tri-Generation Plant with absorption cooling) completed at the 14th Avenue Head Office site. MTN South Africa’s 2-megawatt (MW), methane-driven tri-generation power plant at the 14th Avenue Head Office is the first of its kind on the African continent. The energy generated is used to power some of MTN South Africa's data and switching centre’s and server rooms. The heat that is generated as a by-product of the process is sent through lithium bromide absorption chillers to cool water, which is then used for the cooling air for electronic equipment, as well as for office air-conditioning needs. The tri-gen project enabled MTN to be the first telecoms company in Africa to have a new Methodology approved by the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM) Executive Board, for such an installation to claim carbon credits.The aim of this

activity is to decrease the use of electricity. This would target Scope 2 emissions and is a voluntary activity.

Page: 2012-Investor-ICT-ICT2.ProvisionNetworkConnect

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"

The MTN Group is a multi-national telecommunications group offering voice and data communications products and services to individuals and businesses, with GSM licences in 21 countries and internet service provider businesses in 13 countries. The Group is also a large investor in submarine and terrestrial broadband fibre optic capacity between and around both coasts and inland Africa, and between Asia and Europe.

ICT2.2

Please provide your absolute Scope 1 and 2 emissions 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)
Provision of network/connectivity services		

ICT2.3

Please describe your gross combined Scope 1 and 2 emissions for the provision of network/connectivity services component of your business in metric tonnes per terabyte of network traffic

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
	metric tonnes CO2e	terabyte of network traffic			

ICT2.4

Please describe your electricity use for the provision of network/connectivity services component of your business in MWh per terabyte of network traffic

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
	MWh	terabyte of network traffic			

ICT2.5

Please explain how you calculated the intensity figures given in response to Question ICT2.3 and ICT2.4

Since this is the core nature of MTN's business the scope 1 and 2 calculations provided within this report account for emissions associated with provision and network connectivity services.

Page: 2012-Investor-ICT-ICT3.ManufactureOfHardware

ICT0.1c

Please identify whether "manufacture of hardware" comprise a significant component of your business within your reporting boundary

No

ICT3.1

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

ICT3.2

Please provide your absolute Scope 1 and 2 emissions for the manufacture of hardware component of your business

Business Activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)

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

Page: 2012-Investor-ICT-ICT4.ManufactureOfSoftware

ICT0.1d

Please identify whether "manufacture of software" comprise 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 for the software manufacture component of your business

Business activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)

ICT4.3

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

Page: 2012-Investor-ICT-ICT5.BusinessServices

ICT0.1e

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

No

ICT5.1

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

ICT5.2

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

Business services	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)

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

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

Page: 2012-Investor-ICT-ICT6.OtherActivities

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 for the identified other activity component of your business

Activity	Scope 1 emissions (metric tonnes CO2e)	Scope 2 emissions (metric tonnes CO2e)

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

Module: Sign Off

Page: Sign Off

Please enter the name of the individual that has signed off (approved) the response and their job title

Zakhiya Rehman, Group Sustainability Manager