MTN Group Limited

Climate Change Report
for the year ended 31 December 2022

Based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)
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Foreword from our Group President and CEO

As we present to you the second edition of our TCFD-aligned Climate Report, we stand at a pivotal moment in history. The world is racing against time to curb the devastating effects of climate change, and as a leading telecommunications company, MTN is determined to be part of the solution. COP27 – the African COP – shed a spotlight on the opportunities, as well as the challenges, in transitioning to Net Zero on the continent, and we were proud to be a part of the conversation. It was encouraging that governments took the groundbreaking decision to establish a dedicated fund to assist developing countries in responding to the loss and damage from climate change.

There is widespread recognition that the transition to a low-carbon economy must be fair and equitable, recognising the different national circumstances across the African continent. The low-carbon transition will only be a success if we can also expand access to modern energy services, improve energy reliability, expand access to modern telecommunications services, and create the opportunities for sustainable and resilient livelihoods. At every turn we must ask how our actions will serve the community’s long-term interests; how our investments will drive economic growth and job creation; and how we will shrink our carbon footprint.

We are acutely aware of the commitments made under the Paris Agreement and the urgent call by the Intergovernmental Panel on Climate Change (IPCC) to prevent global temperatures from rising beyond 1.5°C. A 1.5°C increase in global temperatures is still predicted to have a significant impact on the planet, but a 2°C increase is predicted to be far worse, according to the IPCC. In response, many governments across our geographic footprint have established ambitious climate targets. To answer this call, MTN launched Project Zero in 2021 with a vision to achieve Net Zero emissions by 2040. We firmly believe that our success should never come at the expense of our planet.

Our commitment extends beyond mere words. This past year, we submitted our climate targets for review and approval by the Science Based Targets Initiative (SBTi), reaffirming our dedication to this cause. We increased our alternative energy sites by over 4,300, showcasing our tangible efforts to transition towards renewable energy. Simultaneously, we strove to decouple the growth in our services from the release of greenhouse gas emissions by focusing on operational efficiency, greener energy solutions and circular economy strategies.

However, the path to Net Zero is not without its challenges. One of the most significant is ensuring that the increase in demand for our services does not lead to a rise in our energy usage and associated emissions. This has been a particular challenge in South Africa, as loadshedding continues to disrupt normal business operations, forcing increased reliance on diesel backup generators. We also recognise the critical role our suppliers play in our journey, and we are actively engaging with them to reduce emissions within our supply chain.

Transitioning to Net Zero is a complex process that requires substantial capital investment and technological innovation. However, as a company built on innovation and with a strong track record of managing large capital projects, we are ideally positioned to lead this transition.

We are humbled by the enormity of the task ahead of us, but we are not deterred. We are inspired by our Ambition 2025 strategy, which is built on the belief that everyone deserves the benefits of a modern, connected life. This belief fuels our commitment to a sustainable and inclusive world.

Our time is now, and we are prepared to step up to the challenge. Our commitment to you, our valued stakeholders, is that we will not waver in our efforts to deliver on our climate promises. We will face setbacks and obstacles along the way, but we are charting our path to Net Zero, and we invite you to join us on this journey. Thank you for your ongoing support and belief in our vision. Together, we can create a sustainable and inclusive world.

Group President and CEO
Ralph Mupita

Delivering on our commitments
Operational context

Our geographic footprint is wide, stretching over 19 markets on two continents. This makes robust operational oversight critical. We secure this through a management structure that reflects the contributions to Group earnings of each of our operations in South Africa and Nigeria and that of our regions – SEA, WECA and MENA – combined.

Who we are

Our purpose is to enable the benefits of a modern connected life for everyone.

MTN is a pan-African mobile operator with the strategic intent of ‘Leading digital solutions for Africa’s progress’.

Driven by a pioneering spirit, MTN has played a bold role in accelerating Africa’s development in the past two and half decades. When we started our journey in 1994, our ambition was to brighten lives through the power of connectivity.

Today, extending digital and financial inclusion is more critical than ever. We want the opportunities that the digital world offers to be universal, contributing as a positive force for the transformation of individuals, companies and society.

To support this, we are harnessing the power of MTN – our brand, footprint, connectivity infrastructure and technology platforms – to provide leading solutions that fuel Africa’s progress. We offer a diverse range of voice, data, fintech, digital, enterprise, wholesale and API services to more than 289 million customers in 19 markets across Africa and the Middle East.

Read more about MTN’s strategy and performance in our 2022 Integrated Report.

Our portfolio at 31 December 2022 (MTN Group effective shareholding)

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTN South Africa</td>
<td>100.0%</td>
</tr>
<tr>
<td>MTN Nigeria</td>
<td>75.7%</td>
</tr>
<tr>
<td>SEA</td>
<td></td>
</tr>
<tr>
<td>MTN Uganda</td>
<td>83.1%</td>
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<tr>
<td>MTN Rwanda</td>
<td>80.0%</td>
</tr>
<tr>
<td>MTN Zambian</td>
<td>89.8%</td>
</tr>
<tr>
<td>MTN South Sudan</td>
<td>100.0%</td>
</tr>
<tr>
<td>Mascom Botswana*</td>
<td>53.1%</td>
</tr>
<tr>
<td>MTN eSwatini*</td>
<td>30.0%</td>
</tr>
<tr>
<td>WECA</td>
<td></td>
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<tr>
<td>MTN Ghana</td>
<td>84.3%</td>
</tr>
<tr>
<td>MTN Cameroon</td>
<td>80.0%</td>
</tr>
<tr>
<td>MTN Côte d’Ivoire</td>
<td>66.8%</td>
</tr>
<tr>
<td>MTN Benin</td>
<td>75.0%</td>
</tr>
<tr>
<td>MTN Guinea-Conakry</td>
<td>75.0%</td>
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<tr>
<td>MTN Congo-Brazzaville</td>
<td>100.0%</td>
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<tr>
<td>LonestarCell (MTN Liberia)</td>
<td>60.0%</td>
</tr>
<tr>
<td>MTN Guinea-Bissau</td>
<td>100.0%</td>
</tr>
<tr>
<td>MENA</td>
<td></td>
</tr>
<tr>
<td>MTN Sudan</td>
<td>85.0%</td>
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<tr>
<td>MTN Afghanistan#</td>
<td>100.0%</td>
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<tr>
<td>MTN Irancell*</td>
<td>49.0%</td>
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<tr>
<td>Associates, JVs and other investments</td>
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<tr>
<td>Cityo</td>
<td>50.0%</td>
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<tr>
<td>IHS Group</td>
<td>25.7%</td>
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<tr>
<td>Iran Internet Group*</td>
<td>29.5%</td>
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<tr>
<td>Middle East Internet Holding*</td>
<td>50.0%</td>
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* Localisations.
* Exiting in an orderly manner over the medium term.
* Equity accounted.
* Legal ownership is 79.3%.

By geography %

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>South Africa</td>
<td>21.7%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>39.7%</td>
</tr>
<tr>
<td>SEA</td>
<td>9.8%</td>
</tr>
<tr>
<td>WECA</td>
<td>24.8%</td>
</tr>
<tr>
<td>MENA</td>
<td>3.0%</td>
</tr>
<tr>
<td>MTN GC</td>
<td>1.4%</td>
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By services (%)

<table>
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<tr>
<th>Service</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Voice</td>
<td>41.6%</td>
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<tr>
<td>Data</td>
<td>35.4%</td>
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<tr>
<td>Digital</td>
<td>8.4%</td>
</tr>
<tr>
<td>Fintech</td>
<td>8.4%</td>
</tr>
<tr>
<td>SMS</td>
<td>2.5%</td>
</tr>
<tr>
<td>Wholesale</td>
<td>3.4%</td>
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<tr>
<td>Other</td>
<td>7.1%</td>
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By geography (%)

<table>
<thead>
<tr>
<th>Region</th>
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<td>South Africa</td>
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<td>SEA</td>
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<tr>
<td>WECA</td>
<td>21.3%</td>
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<tr>
<td>MENA</td>
<td>3.0%</td>
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Climate Change Report 2022 03
Key accomplishments: 2022*

**Governance**
- Senior leaders attended the United Nations Climate Conference (COP27); the Group Chief Sustainability & Corporate Affairs Officer discussed how technology can empower green development.
- Published first TCFD-aligned climate report.
- Facilitated the adoption and understanding of environmental, social and governance (ESG) metrics across our operations.
- S&P Global ESG Rating improved by three points with a score of 47 in 2022.
- MTN has established a remuneration disclosure plan that links pay incentives to employee ESG performance.

**Strategy**
- Continued to work with OpCos to deliver on Net Zero emissions targets.
- Progressed Net Zero emissions work focused on Scope 3 supplier engagement.
- Undertook water and waste baseline assessment across MTN's facilities in 14 markets.
- Invested in programmes to drive responsible water use and waste management.
- In May 2023, MTN Group was named by Brand Africa as the number one African brand that is doing good for people, society and the environment in a new category of its annual awards.

**Risk management**
- MTN has launched a risk assessment pilot across key geographies to understand the physical risks of climate change better. The pilot project will establish a methodology that can be replicated across our footprint.
- Enhanced proactive management of ESG-specific risks using the Group’s risk management framework.

**Metrics and targets**
- MTN was on track with all KPIs in the 2022 ESG index, including our reduction target for Project Zero.
- MTN achieved a 13.9% reduction in absolute Scope 1 and 2 greenhouse gas (GHG) emissions, excluding MTN SA which was impacted by loadshedding. Including South Africa, the Group reduced its Scope 1 and 2 emissions by 9.85% in 2022.
- In May 2023, the SBTi validated MTN Group’s GHG reduction targets.
Our key metrics at a glance

**Emissions:**

- **-5%**
  Reduction in Scope 1 greenhouse gas emissions in 2022*

- **-11%**
  Reduction in Scope 2 greenhouse gas emissions in 2022*

- **-13.9%**
  Reduction in total Scope 1 and 2 greenhouse gas emissions in 2022*

**Key metrics for the mobile sector**

- Absolute Scope 1 and 2 emissions: 878,458tCO₂e
- Absolute Scope 1 and 2 emissions per 1 GB of data: 0.000071tCO₂e/GB
- % change in absolute Scope 1 and 2 emissions since last reporting period: -9.85% (-13.9% excluding SA)

- Absolute Scope 3 emissions: 4,417,894tCO₂e
- % change in absolute Scope 3 emissions since last reporting period: +9%

**Mitigation activities:**

- **2,674 sites**
  Renewable energy solutions at BTS sites across Africa

- **R700m**
  Capex set aside for Project Zero initiatives in 2023

- **817.2kg**
  Network waste diverted from landfill reducing emissions

* Including South Africa
* Excluding South Africa, which was impacted by loadshedding
Sustainability strategy framework

Our business strategy – Ambition 2025: Leading digital solutions for Africa’s progress – aims to accelerate growth by building the largest and most valuable platform businesses and driving industry-leading connectivity-leading operations.

We strive to create value for our stakeholders through responsible environmental, social, governance and economic value practices and solutions. At the heart of our strategy is a commitment to protecting our planet and achieving Net Zero emissions by 2040. Our commitment to the planet is linked to clear targets and measurable performance indicators, and each pillar is complemented by policies and procedures to reinforce our commitment and facilitate implementation by our operating companies and platform businesses.
More than a century of burning fossil fuels as well as unequal and unsustainable energy and land use has led to global warming of 1.1°C above pre-industrial levels. This has resulted in more frequent and more intense extreme weather events that have caused increasingly dangerous impacts on nature and people in every region of the world. Every increment of warming results in rapidly escalating hazards. More intense heatwaves, heavier rainfall and other weather extremes further increase risks for human health and ecosystems. In every region, people are dying from extreme heat. Climate-driven food and water insecurity is expected to increase with increased warming. When the risks combine with other adverse events, such as pandemics or conflicts, they become even more difficult to manage.

Source: IPCC

The average global temperature on Earth has increased by at least 1.1°C Celsius since 1880. The majority of the warming has occurred since 1975, at a rate of roughly 0.15 to 0.20°C per decade. Source: NASA Goddard Institute for Space Studies

The last nine years were the warmest on record. The global temperature anomaly (°C compared to the 1951-1980 average) has been consistently above 0.7°C for the last nine years. Source: NASA Goddard Institute for Space Studies

Observed climate trends calculated for 1980 – 2015

(a) Temperature trend
(b) Precipitation trend

Human-induced global warming has been more rapid in Africa than the rest of the world, according to the IPCC. Africa is being disproportionately affected by climate change, including water stress, reduced food production, and more frequent extreme weather events. Source: IPCC, AR6
2021 was the year in which climate change was a focus area in many industries, governments and the public. The use of mobile data has significantly increased post the COVID-19 pandemic, growing the sector's carbon footprint. The mobile industry contributes 0.4% of the world's emissions, of which 27% are attributed to customer use and supply chain. Only 19% is attributed to the sector's direct operations, which should decline as companies implement their decarbonisation strategies.

In their 2023 climate action report, GMSA reported an increase in the number of mobile operators who disclosed to the Carbon Disclosure Project, and 24% of the electricity used by mobile operators was purchased from renewable resources compared to 18% reported in 2022. The report also highlighted the difficulty of measuring and comparing Scope 3 emissions year-on-year. The industry remains committed to circularity, to refurbish, remanufacture, reuse and recycle.

We measure and report on metrics as recommended by the Global Reporting Initiative (GRI) and Sustainability Accounting Standards Board (SASB). In addition to GHG emissions reporting, we track our energy consumption, waste management, supply chain management as well as other material matters including:

- Regulatory environment
- Cybersecurity and digital safety
- Financial resilience
- Network and platform performance
- Geopolitical and macroeconomic conditions
- Future-fit skills and culture
- Delayering of the telecoms business model
- Greater focus on ESG

Scope 3 emissions across the whole value chain contribute the most towards the sector's carbon footprint (72%), encouraging greater collaboration in developing climate resilience, mitigation and adaptation strategies. The sector's operational networks (Scope 1 and 2) were estimated at 2% and 26%, respectively, as the sector rolls out smart technology and green investments.

Plans for the sector's transition to a sustainable future are heavily reliant on our partner companies and the communities we serve. As MTN, we are committed to protecting our planet by achieving Net Zero emissions by 2040. To help deliver our purpose and reduce our environmental impact, MTN is a member of the GSMA Climate Action Taskforce. We value industry partnerships for impactful action and insight in collectively managing climate change impacts and meeting the ambition of the Paris Agreement of keeping warming below 1.5°C.

Learn more at:
Protecting our planet

MTN is committed to protecting our planet by integrating environmental considerations into our business operations and planning, and reducing greenhouse gas emissions across our entire value chain. This is the foundation of our climate change vision.

Why

MTN environmental management commitments are at the heart of sustainability

- Commit to environmental protection and management
- Commit to use natural resources and energy more efficiently
- Commit to reduce emissions and waste
- Commit to monitor and report MTN environmental performance

How

Actively pursue the reduction of our carbon footprint via the setting of science-based targets (in line with SBTi business ambition for the 1.5°C campaign) and carbon off-setting

- **Scope 1**
  - Emissions are direct emissions from owned or controlled sources.*
- **Scope 2**
  - Emissions are indirect emissions associated with the purchase of electricity and other energy.*
- **Scope 3**
  - Emissions are all indirect emissions (not included in Scope 1 or 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.*

Who

Everyone...
Most valuable progress can come from working with others

- MTN Group and operating companies
- Community
- Government
- Investors
- MTN employees
- Suppliers and vendors
- Customers

* These definitions are in line with the GHG Protocol Corporate Standard

Visit [link] for more information on our position on energy and climate change.
Our climate change vision

As mobile operators, we have significant challenges due to the ever-growing demand for digital services such as: the need to increase connectivity and speed while lowering carbon emissions. We must work to decouple the increasing demand for digital services from the environmental impacts associated with our energy use. At MTN, we have established a goal to attain Net Zero carbon emissions by 2040, 10 years earlier than the target set by the GSMA, in accordance with the Paris Agreement scenario that limits the rise in global temperatures to 1.5°C above pre-industrial levels.

We primarily operate in Africa which is especially vulnerable to climate change effects including floods, drought and desertification. As such, we understand the significance of maintaining a balance between the need to connect more people while also reducing our carbon footprint throughout the continent. Every additional connected person, device or data transmitted represent potential rise in energy consumption as economies and population increase.

Although, they may also raise and empower societies, our digital networks and technology can notably contribute to climate change mitigation through mobile money to replace cash transactions and digitisation enables programmes that improve sustainable living among our customers. This can help prevent deforestation and promote sustainable land use.

Generally, the effects of climate change and environmental degradation can have an extensive impact on our operations and overall value chain. Thus, the protection of our planet is critical for MTN’s long-term business success.

We are doing for the planet by:

1. Moving towards zero emissions and a cleaner energy supply
   - Reducing Scope 1 and 2 emissions and greening our energy supply through Project Zero.
   - Working with our suppliers to reduce Scope 3 emissions.

2. Developing a circular economy
   - Refurbishing, reusing and reselling network equipment.
   - Responsible e-waste management.

3. Using natural resources responsibly
   - Optimising water consumption.
   - Managing our waste.
Our climate change vision continued

Ensuring connectivity for more than 200 million people requires a substantial investment in network infrastructure, buildings and data centres, all of which require energy in the form of diesel, electricity, gas and refrigerant.

As a responsible corporate citizen, we acknowledge urgent action is needed to address climate change and we are intent on playing our role in lessening our environmental impact. MTN manages the need for urgent action on climate change through Project Zero, which concentrates our efforts on decreasing GHG emissions across our footprint and, in so doing, enhancing operational efficiencies, extending the lifecycle of network equipment, reducing energy use, and investing in renewable energy sources.

**Our commitments**

In line with the Paris Agreement scenario of limiting the global temperature rise to 1.5°C above pre-industrial levels, MTN has set out to achieve Net Zero GHG emissions by 2040, 10 years earlier than the objective set by the GSMA global telecoms industry body.

As part of ensuing alignment with SBTi verification requirements, MTN adjusted its baseline year to 2021 and updated our datasets accordingly. This resulted in slight change to the medium-term target from 47% to 50% reduction by 2030 and maintaining long-term target of Net Zero by 2040 as we push more aggressively for excellence.

As part of this effort, in 2021, we signed a pledge with the SBTi, which formally commits the MTN Group to achieve Net Zero emissions by 2040. We also formally submitted our targets to SBTi for validation in late 2022 and we are proud to report that SBTi validated our targets in May 2023.

To build on this milestone, in 2021, MTN pledged its support for the recommendations of the TCFD and in 2022, we issued our first TCFD fully-aligned climate report.

MTN SA worked to mitigate the impact of loadshedding through its network resilience plan, included in its move to a ‘power-as-a-service’ (PaaS) arrangement being implemented following the sale of its towers. We thus expect MTN SA’s emissions profile to change in the years ahead as the Opco becomes a TowerCo market. This will carve out the majority of related BTS sites and result in a significant portion of MTN SA’s emissions transferring from Scope 1 and 2, to Scope 3.

The decrease in our Group-wide emissions was delivered by a combination of energy-efficiency investments and clean energy supply, predominantly in markets such as Congo-Brazzaville, Côte d’Ivoire, eSwatini, Ghana, Guinea, Conakry, Kenya, Nigeria, Rwanda, Sudan and Uganda. In South Africa, we procured renewable energy certificates from local projects to offset the effects of loadshedding.

**Key projects contributing to reduction of emissions**

**Energy efficiency:**
- More efficient AC deployment, cable clean up under DC floors, deployment of hybrid gensets, data centre server virtualisation, server eco mode, DC lighting efficiency and BTS auto shutdowns.

**Energy supply:**
- Solar energy integration in large data centre facility, gas independent power producers (IPP) procurement, and other renewable initiatives at BTS sites and office buildings.

Based on year-on-year comparisons between 2021 and 2022, BTS sites continued to be the largest source of MTN’s Scope 1 and 2 emissions, contributing 65% of all Scope 1 and 2 emissions in 2022. This is due to the asset class heavy reliance on diesel and electricity. This picture is expected to shift in light of BTS sales to TowerCo in the coming year.

From an energy perspective, BTS accounted for 66.8% of total energy usage, followed by data centres (22.5%), buildings and switches (5.2%), and vehicles (1.7%). Overall, electricity (43%) and diesel (54%) account for the bulk of MTN’s total Scope 1 and 2 emissions.

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As part of our commitment to protect the planet, we achieved a 13.9%* reduction in absolute Scope 1 and 2 emissions (tCO₂e) in 2022, excluding MTN SA, against a 2022 reduction target of 3.5% reductions. Including South Africa, the Group achieved a 9.85% reduction in Scope 1 and 2 due to the challenges associated with loadshedding in MTN SA.

* Based on the latest data post-H1 data review by auditors; H2 review is underway and dataset may be adjusted slightly in future disclosures.

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**Data excludes Iran, which is outside of MTN’s operational control.**

South African emissions increased steeply owing to severe loadshedding throughout 2022, outside of MTN’s control. Our South Africa operations required unprecedented levels of diesel-generated power to continue operations. Scope 1 and 2 data is still subject to H2 audit processes. Scope 3 TowerCo data are based on spend estimates and will be updated on actuals.

Waste emissions data are not included at present. Data centres are under audit and also subject to adjustment post-audit findings.

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By the end of 2022, MTN Group had reduced its GHG emissions by 13.9% annualised across the Group compared with the previous year, while maintaining the same absolute emissions as 2021. MTN has reduced its Scope 1 and 2 emissions from 2021: 23% (2021: 21%) to 2022: 13.9% (2021: 21%) and 2022: 6% (2021: 5%) respectively.

**Emissions breakdown**

- **Scope 1** (2022: 6%)
- **Scope 2** (2022: 11%)
- **Scope 3** (2022: 83%)

**Energy consumption breakdown (GJ)**

- **Diesel** (2022: 54%)
- **Petrol** (2022: 1%)
- **Electricity** (2022: 43%)
- **Natural gas** (2022: 2%)

**Emissions breakdown per area**

- **BTS sites** (2022: 70%)
- **Data centres and switches** (2022: 23%)
- **Buildings** (2022: 9%)
- **Vehicles** (2022: 2%)

---

<table>
<thead>
<tr>
<th>Region</th>
<th>Emissions Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>(2022: 6%)</td>
</tr>
<tr>
<td>MENA</td>
<td>(2022: 8%)</td>
</tr>
<tr>
<td>WECA</td>
<td>(2022: 14%)</td>
</tr>
<tr>
<td>SEA</td>
<td>(2022: 37%)</td>
</tr>
<tr>
<td>South Africa</td>
<td>(2022: 35%)</td>
</tr>
</tbody>
</table>
Our climate change journey

One of the most significant ways that business is shaping the world we live in is through energy use and its contribution to climate change. We recognise that we have a role to play in contributing meaningfully to much-needed actions to mitigate and adapt to the impact of climate change. The timeline below shows some of the major milestones in our climate journey, as we have integrated climate-related considerations into our business.

---

**2003**

- Sustainability reporting: MTN publishes its first Sustainability Report in 2003

**2021**

- Nkululeko Sowazi named MTN Group’s designated climate change Board member

**2022**

- Joined JAC and GeSI* – promote technologies and practices that foster ESG within our supply chain

**2023**

- Commitment to Net Zero emissions by 2040 to contribute to a sustainable future

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*JAC – Joint Audit Cooperation, GeSI – Global Enabling Sustainability Initiative.

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**2023**

- ESG key performance indicators (KPIs) linked to executive remuneration for climate change

**2022**

- Carbon Disclosure Project (CDP) score changes to B- MTN achieved a B- rating for its CDP climate change reporting, showing continuing improvement

**2023**

- MTN becomes a TCFD supporter and its recommendations on climate-related risks and opportunities

**2023**

- SBTi completes validation of MTN GHG emission targets for Scope 1, 2 and 3
MTN Group disclosures are guided by international best practices, including the United Nations Global Compact (UNGC), the GRI Standards, CDP, the UN Guiding Principles on Business and Human Rights, the FTSE/JSE Responsible Investment Index Series and the King Code of Governance Principles (King IV), and the TCFD.

We remain committed to disclosing our ESG performance by preparing comprehensive annual reports on the Company’s sustainability efforts, which include an Integrated Report and a Sustainability Report. Our climate report, based on the recommendations of the TCFD, focuses on governance, strategy, risk management, metrics, and targets, the four areas fundamental to how organisations respond to climate risks and opportunities. Eleven separate recommendations are embedded in the TCFD framework, outlining the data that organisations should provide to promote transparency regarding climate-related risks and opportunities.

Since 2014, we have been participating in the environmental transparency process through CDP reporting. Our reporting has been rated on par with the Africa regional average for the media, telecommunications and data centre services sector. In 2021, we achieved a B- rating from CDP, but currently hold a C rating. While we encountered a setback in our CDP scoring in 2022, we are confident that our score will improve going forward due to our expanded climate change initiatives and adaptation efforts. Our CDP supplier engagement rating improvement is attributed to our ability to engage the value chain, set targets, and manage and disclose risks.

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TCFD overview

The TCFD was established to increase the transparency of organisations’ climate-related risks and opportunities so that investors may make well-informed decisions about how to allocate their capital. The TCFD published its recommendations in June 2017, offering businesses and other organisations a framework to create more effective financial disclosures about climate change using their current reporting procedures. Since then, there has been a considerable increase in the worldwide momentum behind the TCFD initiative, and as a result, numerous jurisdictions have proposed or finalised rules that call for disclosures that are comparable to or linked with the TCFD framework.

In February 2022, MTN became a TCFD supporter indicating that we believe that the TCFD recommendations provide a useful framework to increase transparency on climate-related risks and opportunities. By publicly declaring support for the TCFD and its recommendations, we intend to demonstrate the actions we are taking to build a more resilient financial system through climate-related disclosure.

We know there are opportunities and risks associated with climate change for our industry. This covers both transitional risks connected to economic, technological, or regulatory changes brought on by the shift to a greener economy as well as physical hazards brought on by the increased frequency and intensity of climatic and meteorological occurrences. Our strategic and commercial planning regularly takes the implications of climate change into account in order to maximise the value we provide to our clients, investors, and the communities where we operate. We also keep an eye on developments in the business environment and markets to identify potential growth areas as a result of the shift to a low-carbon economy.

TCFD framework

The TCFD framework is based on four key pillars: governance, strategy, risk management, and metrics and targets. These recommendations guide companies in preparing their climate-related disclosures to ensure greater consistency and alignment in corporate climate disclosures.

Core elements of recommended climate-related financial disclosures

1. Governance
   The Company’s governance around climate-related risks and opportunities

2. Strategy
   The actual and potential impacts of climate-related risks and opportunities on the Company’s businesses, strategy, and financial planning

3. Risk management
   The processes used by the Company to identify, assess and manage climate-related risks

4. Metrics and targets
   The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Learn more at: https://www.fsb-tcfd.org
# Alignment to the recommendations of the TCFD

<table>
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<th>Page</th>
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<td>a. Describe the Board's oversight of climate-related risks and opportunities.</td>
<td>17 – 18</td>
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<tr>
<td>b. Describe management's role in assessing and managing climate-related risks and opportunities.</td>
<td>19, 42 – 52</td>
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<td>22 – 24</td>
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<td>c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.</td>
<td>48 – 52, ongoing</td>
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<table>
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<td>a. Describe the organisation's processes for identifying and assessing climate-related risks.</td>
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<td>c. Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management.</td>
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<th>Metrics and targets</th>
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<td>a. Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.</td>
<td>56 – 59</td>
</tr>
<tr>
<td>b. Disclose Scope 1, 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.</td>
<td>59</td>
</tr>
<tr>
<td>c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.</td>
<td>58</td>
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</table>
Governance

Our climate change governance

Management’s oversight of climate-related risks and opportunities

Partnering to expand our impact
Our climate change governance

We are committed to creating and protecting value for our stakeholders, thus, maintaining superior corporate governance, transparency and accountability is essential for our business’s long-term sustainable performance and growth. MTN’s Board is committed to ensuring that climate change issues are carefully integrated into the Group’s strategy and operations.

Our Board of Directors oversees the management of climate-related risks and opportunities, including our strategic approach to climate, climate-related commitments, disclosure, and risk management. The Board is integral in supporting our business and helping us deliver on our Net Zero strategy.

Several Board committees oversee the management of specific climate-related roles and responsibilities, which together provide a clear framework for decision making and accountability across our business. The committees report to the Board on a quarterly basis, and each committee operates under terms of reference setting out their roles and responsibilities, composition and scope of authority. Since climate is a cross-functional issue, five of the Board committees (out of six) focus on climate issues:

Social, Ethics and Sustainability Committee

- Approves sustainability strategy and associated policies.
- Oversees overall ESG performance and ensures implementation against key sustainability-related frameworks.
- Sets the ESG metrics that are material value drivers for the business.

Risk Management and Compliance Committee

- Oversees the sustainability risk register and ensures risk mitigation is adequate.
- Reviews compliance with sustainability-related policies.

Human Capital and Remuneration Committee

- Approves sustainability policies related to labour and employment, sets employment targets and monitors employment equity.
- Reviews, approves and assigns executive KPIs in respect of ESG targets.

Directors’ Affairs and Governance Committee

- Oversight on the ‘governance’ tenant on sustainability.
- Monitors the effectiveness of the governance structures, processes and policies.

Audit Committee

- Assesses the reliability of sustainability data and disclosures.
- Oversees fraud and corruption policies.
- Oversees the financial performance and financial reporting practices of the Group.

Sustainability Steering Committee

- Drives execution of sustainability programmes and partnerships to ensure delivery of ESG metrics.
- Resolves escalated issues and makes project decisions.

Road to Zero Council

- Provides direction and decisions on major deviations or course corrections to achieve Net Zero.
- Works with suppliers to provide guidance and steer the overall programme.
- Tracks progress against Group-wide emission reduction targets.

MTN governance structure with responsibility for climate change and other sustainability issues:

Social, Ethics and Sustainability Committee

Risk Management and Compliance Committee

Human Capital and Remuneration Committee

Directors’ Affairs and Governance Committee

Audit Committee

Sustainability Steering Committee

Road to Zero Council

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Our climate change governance continued

Human Capital and Remuneration Committee
- 4 meetings per year
- Discussion of climate-related topics
Reviews and assigns executive KPIs related to climate change and other ESG metrics. This includes progress toward Net Zero carbon emissions by 2040. In 2021, we set ESG-related long-term incentives (LTI) and short-term incentives (STI) targets for our executives (Group CEO, Group Executive Committee (Exco), and other management). MTN was on track with all KPIs in the 2022 ESG index, including our reduction target for Project Zero.

Directors’ Affairs and Governance Committee
- 4 meetings per year
- Discussion of climate-related topics
Monitors the effectiveness of the governance structures, processes, and policies. The committee has been critical in better integrating climate change into the Board structure.

Audit Committee
- 4 meetings per year
- Discussion of climate-related topics
Assesses the reliability of energy and emissions data and disclosures. This includes the ESG metrics disclosed in our annual Sustainability Report, as well as the Climate Report.

Exco facilitates the effective control of the Group’s operational activities in terms of its delegated authority approved by the Board. It is responsible for recommendations to the Board on the Group’s policies and strategy and for monitoring strategy implementation in line with the Board’s mandate. It meets at least monthly, and more often as required.

The Exco is ultimately accountable for the execution of the sustainability strategy and actions, with accountabilities assigned to relevant executives led by the Group President and CEO.

We extended our sustainability governance framework to include a Sustainability Steering Committee, which reports to the Executive Committee twice a year to dive deeply into sustainability topics. The Sustainability Steering Committee is supported by the Road to Zero Council and various management-led working groups.

Our committees are structured to promote cross-market and functional collaboration, which is essential to ensure sustainability is embedded throughout the organisation.

Road to Zero Council
The Road to Zero Committee is focused on identifying climate-related risks, tracking progress toward MTN’s Net Zero commitment and steering the Company’s strategy and investment decisions to achieving MTN’s Net Zero by 2040 mandate. The Road to Zero Committee’s work includes the identification of material climate-related risks in the short, medium and long term and taking appropriate action, as well as considering the related opportunities in the Company’s strategy. Further, the committee reports progress to the Social, Ethics and Sustainability Committee and is responsible for the reporting and disclosure on matters related to climate change.

Ralph Mupita
Group President and CEO

Nompilo Morafo
Group Chief Sustainability and Corporate Affairs Officer

Ferdi Moolman
Group Chief Risk Officer

Tsholofelo Malefe
Group Chief Financial Officer

Dirk Karl
Group Executive: Supply Chain

Amith Maharaj
Group Executive: Network Design and Planning

Mazen Mroué
Group Chief Technology and Information Officer

Read more about MTN’s corporate governance in our 2022 Integrated Report
Management’s oversight of climate-related risks and opportunities

Our management team – from the Group level to the individual operating companies – is responsible for the day-to-day execution of the Company’s climate change strategy. Like the Board committees, responsibility is shared across several levels of management.

**Group President and CEO**
Our commitment to climate change starts at the top. The MTN Group President and Chief Executive Officer, Ralph Mupita, has ultimate responsibility for the Company’s climate change strategy and commitments. For example, it was Ralph that signed our pledge with the SBTi that formally commits the MTN Group to a Net Zero ambition.

**Group Chief Risk Officer**
MTN’s Group Chief Risk Officer is responsible for managing enterprise-wide risk, which is integral to MTN’s growth strategy and includes climate-related risks and tracking of the required Group-wide risk mitigation measures.

**Group Chief Sustainability and Corporate Affairs Officer**
To better integrate ESG at the core of our business, the Group Chief Sustainability and Corporate Affairs Officer position was established in February 2022. Responsibilities include decarbonising, rural connectivity, greater diversity and inclusion, enhanced stakeholder management, and protecting digital human rights. The Group Chief Sustainability and Corporate Affairs Officer provides regular updates to the Social, Ethics and Sustainability Committee on the Company’s ESG priorities.

**Group Chief Technology and Information Officer**
Most of MTN’s emissions stem from its network. As a result, the Group Chief Technology and Information Systems Officer has a responsibility to the Project Zero programme to leverage the latest technologies and service partners to enable business sustainability via greater energy efficiencies, low-carbon emissions, risk reduction and cost control. The programme prioritises renewable solutions, efficient emerging technologies and energy storage.

**Climate-related training and awareness**
MTN is a member of the GSMA Climate Action Taskforce, which hosts webinars to support the members’ climate strategies. Webinar topics have included:
- Introduction to CDP
- Energy and renewables
- Scope 3 GHG reporting
- Biodiversity
- Climate transition plans
- Achieving climate targets
- Circular economy

MTN is an active participant in the GSMA Climate Change Taskforce, helping to advance our understanding of climate change topics.

MTN also conducts internal training on climate change and sustainability topics for our country managers. In 2022, some of the topics discussed with Opcos (with internal and external speakers) have included:
- Green office solutions
- Water and waste management
- SBTi
- Sustainable financing

MTN also participated in the UN Global Compact Academy course on how to set science-based targets.
Partnering to expand our impact

MTN participates in various climate change forums and initiatives to learn from our global peers and ensure that we are adopting best practices as we develop our climate change programmes.

**CDP (formerly known as the Carbon Disclosure Project)**
MTN Group has completed the annual CDP Climate Questionnaire since 2010. Disclosure through CDP is the global benchmark for corporate environmental reporting.

**Task Force on Climate-related Financial Disclosures**
In 2022, MTN pledged its support for the recommendations of the TCFD and published its first TCFD-aligned climate report. MTN supports the TCFD’s goal to build a more resilient financial system through climate-related disclosure.

**GSM Association (GSMA)**
MTN Group is a member of the GSMA Climate Action Taskforce. GSMA is a non-profit industry organisation representing the interests of mobile network operators worldwide. The GSMA and the Taskforce are working together to move the mobile industry towards Net Zero carbon emissions by 2050 at the latest.

**United Nations Global Compact**
MTN is committed to the UN Global Compact’s Sustainable Development Goals. We commit to continue making the Global Compact and its principles part of our strategy, our culture and the day-to-day operations of our Company.

**Science Based Targets initiative**
In 2023, SBTi validated MTN Group’s near- and long-term greenhouse gas emissions targets. SBTi is a partnership involving the UNGC, the World Resources Institute, CDP and the World Wide Fund for Nature. SBTi encourages companies to set targets in line with the Paris Agreement.

**Joint Audit Cooperation and Global Enabling Sustainability Initiative**
MTN is a member of JAC and GeSI, providing information, resources and best practices for achieving integrated social and environmental sustainability through digital technologies. MTN is a member of JAC’s Climate Change and Circular Economy Group and contributed towards JAC’s climate change report.

Strategy

Risks and opportunities
MTN’s Net Zero philosophy
Moving towards zero emissions and a cleaner energy supply
Country case study: Nigeria
Country case study: South Africa
Additional Project Zero updates
TowerCo emissions
Developing a circular economy
Using natural resources responsibly
Case study: Uganda
Case study: Ghana
How will we create an impact on our stakeholders?
Risks and opportunities

MTN recognises that climate change has the potential to impact our business, as well as the communities that we serve. We are taking actions to understand and evaluate these risks, guided by the TCFD framework. The physical risks of climate change are a particular concern for MTN, as a large owner and operator of infrastructure assets spread across a diverse geographic footprint. We are also increasing our focus on the potential opportunities in transitioning to a low-carbon economy and adopting clean energy technologies. We have already begun integrating electric vehicles, high-efficiency lighting, solar, wind and battery storage into our operations. With more than 289 million customers across Africa and parts of the Middle East, MTN also has an opportunity to raise awareness about climate change and deliver products and services to help customers reduce their energy use and emissions.

In the table that follows, we summarise the climate-related risks and opportunities with potential impact on our business over short (0–3 years), medium (3–6 years), and long-term (6–10 years) time horizons, as well as our strategies to manage and mitigate these risks. Risks are grouped in two broad categories as suggested by the TCFD framework: (1) physical risks from a warming planet (both acute and chronic); and (2) transition risks as we shift to a low-carbon economy.

We believe that businesses have a key role to play in tackling climate change using the latest available science, and we are proud to be joining over 5,200 companies and financial institutions that are taking vital steps to help deliver rapid emissions reductions, working with the SBTi.

— Ralph Mupita, Group President and CEO

Leading digital solutions for Africa's progress can only be achieved through the power of partnerships. Working with our supply chain partners, we can pool our technologies and expertise to drive greater access to connectivity, digital skills and greener and more sustainable solutions to the benefit of all.

— Nompilo Morafo, Group Chief Sustainability and Corporate Affairs Officer

We are working to understand the potential opportunities in transitioning to a low-carbon economy and adopting clean energy technologies. We have already started integrating electric vehicles, solar and wind energy and battery storage into our operations.

— Mazen Mroué, Group Chief Technology and Information Officer

As the impacts of climate change become increasingly visible around the world, MTN is committed to identifying and assessing climate-related risks and opportunities. We believe in a proactive approach to enhance overall business performance and resilience.

— Ferdi Moolman, Group Chief Risk Officer
The following are the climate-related risks and opportunities with potential impact to our business over short, medium and long-term time horizons, as well as our strategies to manage and mitigate these risks:

<table>
<thead>
<tr>
<th>Category</th>
<th>Risk</th>
<th>Impact</th>
<th>Mitigation strategies</th>
<th>Time horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical risks</td>
<td>Acute</td>
<td>Increased frequency and severity of severe weather events (e.g., precipitation and flooding), wildfire, drought, and heatwaves</td>
<td>Forward planning can minimise physical risks in site selection (environmental surveys and impact assessments).</td>
<td>Short term, Medium term, Long term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe weather conditions, flooding and wildfires can damage telecommunications infrastructure and equipment, while creating hazardous working conditions</td>
<td>Exposure analysis and flood vulnerability risk assessments are conducted to minimise exposure to damaging events.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic</td>
<td>Long-term changes in climate and weather patterns, including higher mean temperatures and sea-level rise</td>
<td>Periodic tower integrity checks and regular preventive maintenance, including corrosion painting, enhance the integrity and resilience of critical infrastructure.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increased cooling loads can increase energy costs</td>
<td>Specific sites also have diesel generators and backup power options if there are power outages.</td>
<td></td>
</tr>
<tr>
<td>Policy and legal</td>
<td>Environmental legislation and regulations, and potential climate-related litigation</td>
<td>Climate-related regulations and legislation may increase energy costs and could result in fines or litigation</td>
<td>MTN complies with all applicable environmental regulations and ensures that good ESG remains at the core value of the business.</td>
<td>Short term, Medium term, Long term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Renewable energy policies and permitting requirements could prevent or delay the deployment of renewable energy projects in certain jurisdictions</td>
<td>MTN is working to reduce its GHG emissions and MTN is collaborating with its suppliers and service providers to cut carbon emissions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MTN monitors changes in legislation and regulation in its markets. In South Africa, for example, a Carbon Tax Act was implemented in 2019. Nigeria’s Climate Change Act of 2021 directs the development of a carbon tax.</td>
<td></td>
</tr>
<tr>
<td>Transition risks</td>
<td>Technology</td>
<td>Deploying new low-carbon technologies, including renewables, energy storage and electric vehicles</td>
<td>There can be risks in transitioning to new technologies, such as renewable energy, battery storage and energy efficiency</td>
<td>MTN has been testing and adopting new clean energy technologies to ensure that we maintain competitive and reliable service for our customers. For example, MTN is implementing and monitoring inclusion of Group Radio Access Network (RAN) software features for energy efficiency.</td>
</tr>
<tr>
<td></td>
<td>Market and reputation</td>
<td>Changing customer behaviour and changing market conditions can increase energy and raw material costs</td>
<td>MTN operating companies have been developing country-specific action plans to leverage the latest technologies and service partners to improve energy efficiency, reduce emissions and control costs.</td>
<td>Short term, Medium term, Long term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Climate change, and the response to climate change, could affect supply and demand for certain commodities, products and services</td>
<td>MTN has also been actively engaging with our suppliers to address lifecycle emissions. Our climate change policies and practices impact our reputation. MTN conducts an annual Reputation Index Survey, which measures stakeholder perception on sustainability and climate change-related matters.</td>
<td></td>
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</tbody>
</table>
Risks and opportunities continued

Mitigating climate risks
Climate risk is a function of the specific climate-related risks and opportunities to which an organisation is exposed. Climate risk is also a function of an organisation’s strategic response to these future risks and opportunities. We refer to this as the residual risk in our risk management framework. Is the organisation managing its risks and seizing potential opportunities? The TCFD guidance recommends that organisations describe their plans for transitioning to a low-carbon economy, including specific activities to reduce GHG emissions in their operations and value chain.

At MTN, we are committed to achieving Net Zero emissions by 2040 and a 50% reduction in emissions by 2030. Reducing our GHG footprint will mitigate climate risks by contributing to the global effort to reduce emissions and reducing our potential exposure to carbon regulation, while at the same time seizing the opportunities to reduce energy costs through efficiency gains and clean energy technologies.

With our strategic intent to lead digital solutions for Africa’s progress, we provide a diverse range of services, including fintech, digital and API. Our long-term approach is hinged on resilient strategies in digital platforms to mitigate the unpredictable impacts of climate change and lower our carbon footprint. Our 5G and fibre network deployment in the near future will further increase energy efficiency in terms of energy consumption per traffic unit.

<table>
<thead>
<tr>
<th>Category</th>
<th>Opportunity</th>
<th>Management resolutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate-related opportunities</td>
<td>Resource efficiency and clean energy sources</td>
<td>The MTN Group Project Zero initiative includes energy management solutions, monitoring, measurements and focuses on GHG emission reduction. Project Zero seeks to leverage the latest technologies and service partners to enable business sustainability via greater energy efficiencies, low GHG emissions, risk reduction and cost control. MTN manages waste impacts by applying the hierarchy of principles of first reducing the use of existing resources and reducing the procurement of new resources; secondly, reusing where feasible and safe; thirdly, refurbishing existing resources; and lastly, recycling resources. Employee awareness and support are critical to ensuring that individual actions to conserve these resources result in meaningful outcomes.</td>
</tr>
<tr>
<td>Products, services and markets</td>
<td>Development of networks, products and services that are low carbon and climate friendly. Supply chain decarbonisation knowledge gap and scarce resources</td>
<td>The use of electronic systems for approvals and payments to reduce energy and paper consumption. Collaborate with industry suppliers to grow the knowledge base and shape future-fit skill solutions.</td>
</tr>
</tbody>
</table>
MTN’s Net Zero philosophy

The TCFD guidance recommends that companies “describe the impact of climate-related risks and opportunities on the organisation’s businesses, strategy, and financial planning.” Our ambition is to achieve Net Zero carbon emissions in our operations by 2040. This will require a range of strategies implemented across our business operations and supply chain:

• Greening our energy supply by purchasing renewable energy and investing in renewable energy projects
• Reducing energy usage by improving energy efficiency
• Replacing conventional vehicles with electric vehicles powered through renewables
• Investing in climate-resilient networks
• Engaging with our suppliers to reduce their own greenhouse gas emissions
• Partnering with our suppliers to deploy technologies to reduce energy use and emissions
• Adopting better lifecycle management practices and extending the life of our products
• Collaborating with others to accelerate the transition to a low-carbon economy
• Offsetting hard-to-abate emissions

The following discussion details the measures that we are taking to reduce our carbon footprint, including efforts to reduce our direct operational emissions as well as our indirect supply chain emissions.

To bring our philosophy to fruition, we launched Project Zero to drive our vision to become Net Zero by 2040.

MTN understands the importance of conducting and growing its business in a sustainable manner. To contribute to global GHG emission reduction, improve energy security and enhance operational performance, we need to be a Net Zero business.

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[Notes and references:](https://www.ng-voice.com/sustainability/telecommunications-industry/)
[1] Africa’s electricity shortages have health and economic costs (qz.com)
Moving towards zero emissions and a cleaner energy supply

Reducing our Scope 1 and 2 emissions and greening our energy supply through Project Zero

Project Zero
To realise our Net Zero targets, MTN launched its Project Zero, which concentrates our efforts on decreasing GHG emissions across our footprint and in so doing, enhancing operational efficiencies, extending the lifecycle of network equipment, reducing energy use and investing in renewable energy sources. The initiative focuses on GHG emission reduction and includes energy management solutions, monitoring and measurements.

MTN’s Net Zero strategy is based on three climate actions

1. **Reduce energy usage by improving energy efficiency** through the rollout of initiatives such as swapping energy-intensive infrastructure for more efficient options.

2. **Substitute non-green energy sources** by replacing fossil fuel-based energy with renewable energy as offerings mature in each market.

3. **Invest in certified climate protection projects** with high environmental and social standards to offset the emissions that cannot be avoided. This lever will be implemented post-2030 once we exhaust all other substitute activities.

Developing tailored Project Zero strategies for each market
As each of our operating companies faces unique energy challenges and opportunities, we are currently developing individualised Project Zero strategies, enabling us to reduce in Scope 1 and 2 emissions.

During 2022, Net Zero strategies were developed for five of our biggest markets, namely South Africa, Ghana, Sudan, Nigeria and Cameroon. These strategies are currently underpinned by energy efficiency and the greening of energy supply.

The following initiatives were implemented:
- Performed a granular emission review and audit per asset class for Scope 1 and 2.
- Conducted a market-specific regulatory and policy assessment to understand the renewable energy landscape and policy parameters.
- Developed a customised Scope 1 and 2 strategy per asset class, which included initiatives to increase energy efficiency, green energy supply and outline investment considerations for climate projects.
- Detailed a decarbonisation implementation plan leveraging the initiatives identified and team capacities.
- Defined the financing requirement and approach to enable the plan.
- Drove several central technology requests for proposal (RFPs) to enable technology innovation in each country.

In addition, a proof-of-concept energy management and emission measurement tool was deployed by MTN Ghana with completion expected during 2023.

Each operating company’s progress is measured through KPIs biannually and forms part of the Group’s ESG KPI index.

Case study: Liberia

MTN Liberia is installing smart solar-hybrid generators at critical sites across the country to meet its Project Zero aim of reducing its environmental impact from using fossil fuels. Lonestar MTN intends to reduce carbon emissions by 90% using the smart power technology to help minimise its carbon footprint.

Over 50 Smart Solar-hybrid generators have been installed at tower locations in Monrovia and outside of Montserrado County. The smart power system relies heavily on solar energy during the day and lithium batteries at night, resulting in a significant reduction in fuel use and expense.
MTN in Nigeria

Nigeria is among MTN’s largest markets. MTN provides extensive network coverage across the country, offering voice and data services (among others) to over 75 million subscribers. The Company has invested heavily in expanding its network infrastructure, including towers and base stations, to ensure broad coverage in both urban and rural areas.

Operating our system in Nigeria results in both direct and indirect greenhouse gas emissions. Scope 3 emissions (or supply chain emissions) dominate in terms of MTN Nigeria’s total emissions (88.9%).

Scope 1 emissions accounted for 7.5% of MTN Nigeria’s emissions in 2022. Backup generation is a major challenge for MTN Nigeria given the challenges associated with the country’s electric grid. MTN Nigeria spends more than US$3 million per month on diesel fuel and generator maintenance. Backup generators at network sites and data centres account for 72.6% of Scope 1 emissions.

Indirect emissions from electricity use (Scope 2) are the third largest source of emissions (3.6%). The electric system in Nigeria is powered primarily by natural gas, although efforts are underway to promote renewable energy projects in the country.

MTN Nigeria accounts for 35.0% of MTN Group’s total emissions (2022).

Observed temperature for Nigeria, 1901–2020

Climate change policy

Nigeria has committed to achieving Net Zero carbon emissions by 2060

- Nigeria is a signatory to the Paris Agreement and the United Nations Framework Convention on Climate Change (UNFCCC). By joining these agreements, Nigeria has committed to reducing its greenhouse gas emissions and adapting to the impacts of climate change.
- In 2012, Nigeria unveiled the National Climate Change Policy and Response Strategy (NCCPRS) as a framework to guide its climate change actions. The policy aims to promote sustainable development, mitigate greenhouse gas emissions, and enhance the country’s resilience to climate change impacts.
- In November 2021, Nigeria passed the Climate Change Act, establishing the National Council on Climate Change (NCCC) with the authority to establish a carbon tax or emissions trading system. The government is also looking to develop a strategy for voluntary carbon markets.

Nigeria has experienced temperature increases of 0.03°C per decade between 1901–2016, with stronger increases occurring over the last 30 years of 0.19°C per decade.

MTN Nigeria is investing in energy efficiency and clean energy technologies to reduce emissions, while helping Nigeria to achieve its Net Zero commitments.

**Efforts to reduce GHG emissions in Nigeria**

MTN Nigeria has partnered with an IPP to deploy a compressed natural gas (CNG) power plant to supply its corporate office (MTN Plaza) and main data centre (Ikoyi). The power plant is connected to the MTN facility via an underground cable, ensuring reliability when grid power is unavailable.

This innovative solution, utilising three 1.1 megawatt (MW) gas generators, has significantly reduced greenhouse gas emissions and lowered energy costs. The CNG cost per kilowatt hour (kWh) is 60% lower than diesel fuel, leading to a significant reduction in diesel fuel combustion in 2022. The project has also reduced overall energy costs by more than NGN 570 million.

In addition to our investments in backup generation, MTN Nigeria has been retrofitting its facilities with high-efficiency LED lighting, upgrading more than 7,000 fixtures in 2022. MTN Nigeria also installed motion light sensors in buildings and switching centres to optimise power consumption. And MTN Nigeria installed a 56 kilowatt proof-of-concept solar project, delivering more than 4,000 kilowatt hours of clean electricity each month.

UN SDG Goal 13 calls on “everyone to take urgent action to combat climate change and its impacts.” MTN Nigeria is integrating climate change measures into its strategies to reduce Scope 1, 2 and 3 emissions.
Country case study: South Africa

MTN South Africa

South Africa, MTN’s largest market, offers a wide range of mobile and fixed-line services, including voice calls, data, mobile money, and digital solutions. Our subscriber base continues to grow, reaching 36.5 million in 2022. MTN has invested significantly in network expansion and modernisation. The Company has rolled out 4G and 5G networks to enhance data speeds and coverage. MTN South Africa has also deployed advanced technologies like carrier aggregation and Massive MIMO (Multiple Input, Multiple Output) to optimise network performance.

MTN South Africa generates both direct and indirect greenhouse gas emissions. Scope 3 emissions, also known as supply chain emissions, account for 64% of MTN South Africa’s total greenhouse gas emissions (2022). These are primarily indirect emissions from purchased goods and services.

Scope 2 emissions (indirect emissions from electricity use) account for 34% of MTN South Africa’s greenhouse gas emissions (2022). South Africa is heavily dependent on coal with more than 80% of its electricity produced by coal-fired power stations.

South Africa faces a major energy crisis as power cuts continue across the country. South Africa experienced 200 days of loadshedding in 2022 and the situation is expected to worsen by 2023. MTN spent R8.8 billion in capital expenditure in South Africa in 2022 to build out its tower infrastructure, which included backup batteries and generators to ensure power reliability. During loadshedding, when electricity supply is disrupted, MTN South Africa depends on diesel generators and battery storage to maintain operations. MTN South Africa was able to reduce its Scope 1 emissions in 2022, but the reductions would have been greater with less reliance on backup generators.

Climate change policy

South Africa has committed to achieve Net Zero carbon emissions by 2050

- South Africa is a party to both the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, having acceded to the Convention in 1997 and ratified the Kyoto Protocol in 2002. By joining these agreements, South Africa has committed to reducing its greenhouse gas emissions and adapting to the impacts of climate change.
- In 2011, South Africa published the NCCPRS as a White Paper to guide its climate change actions. The policy outlines a vision for climate change response, transitioning to a climate-resilient, lower-carbon economy and society.
- In 2015, the Government released the first National Climate Resilience and Adaptation Strategy (NAS). The NAS focuses on building resilience and adapting to the impacts of climate change in South Africa.
- In 2011, the Government of South Africa launched a competitive procurement programme for renewable energy called the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). The REIPPPP’s aim is to reduce reliance on fossil fuels and promote renewable energy.
- In June 2019, South Africa introduced a Carbon Tax Act as a market-based instrument to incentivise the reduction of GHG emissions.

Climate Change Report 2022
Efforts to reduce GHG emissions in South Africa

MTN South Africa has been actively investing in renewable energy projects to power its operations. In 2022, MTN announced a four-phase green energy programme, including (1) rooftop solar and solar carports at its 14th Avenue Campus, (2) a solar project on vacant land adjacent to the 14th Avenue Campus, (3) rooftop and ground-mounted solar at various MTN facilities, and (4) purchased electricity from off-site renewable generators. MTN already has 30 off-grid renewable energy facilities which supply 57 kilowatts of clean energy in remote areas.

In addition to its solar energy investments, MTN South Africa is using Combined Cooling Heat and Power (CCHP) technology (Tri Generation) at three of its switching centres to generate 4.75 MW of power to support building electrical base load, reducing its reliance on the Eskom grid. MTN South Africa has also been implementing energy-efficiency solutions in its buildings, replacing lighting fixtures and decommissioning legacy hardware.

MTN also plans to invest in combined wind and solar projects, starting with a small-scale project in Worcester (Western Cape) followed by a series of projects in the Eastern Cape, which has a strong wind resource.

MTN aims to reduce diesel emissions and improve power reliability by switching to alternative energy sources like wind, solar, and battery storage. This will minimise generator operation hours and strengthen network resilience. This approach also reduces loadshedding effects on sites. MTN South Africa deployed 2 000 backup generators in 2022 in response to increased loadshedding, consuming over 400 000 litres of fuel oil per month.

MTN continues to deploy innovative technologies to ensure that we drive sustainable solutions across our network. Innovation in generating green energy is critical in achieving MTN Net Zero goals.

UN SDG Goal 7 calls on “access to affordable, reliable, sustainable and modern energy for all.” MTN SA is working to expand its reliance on renewable energy, while at the same time upgrading technology and equipment to improve the energy efficiency of its operations.

CEO: MTN SA
Charles Molapisi

MTN South Africa

Climate Change Report 2022
Additional Project Zero updates

Uganda case study
MTN Uganda has deployed numerous small-scale solar projects (with battery storage) at its BTS sites. The projects are driving a steady reduction in carbon emissions, while at the same time reducing operating costs associated with diesel fuel use. More than 10 solar installations have been completed at MTN Uganda BTS sites (through Q2 2023), with more underway.

MTN Uganda also leases space at tower sites owned by tower companies. These sites account for the majority of MTN Uganda’s carbon footprint. These sites are also transitioning to solar energy with battery backup. More than 300 sites across the country have installed solar and lithium-ion battery systems. Many sites have also connected to the Uganda electricity grid (>60 sites). The electricity grid in Uganda is dominated by renewable energy resources (>90% hydroelectric and solar). ATC Uganda and UBUNTU Towers own these BTS sites.

MTN Uganda is also planning to install an 800 kilowatt solar power supply project at its headquarters in Kampala. The feasibility study and design specifications are complete. MTN Uganda is now working to select a vendor to develop the project.

Ghana case study
MTN Ghana has been upgrading numerous equipment to improve energy efficiency and reduce emissions. The company is in the process of upgrading thousands of conventional light fixtures with high-efficiency LED lights. Each upgrade translates to a substantial improvement in energy efficiency.

MTN Ghana has also been modernising its air conditioning units, which are critical at data centres and switching stations. Heat and humidity can damage vital equipment, disrupting service. Air conditioning units are essential for maintaining the right operating conditions.

With its clean energy investments, MTN Ghana is seeking to continue shrinking its carbon footprint.

We will leave no stone unturned as we strive for Net Zero emissions. We are deploying technology solutions in all of our markets to reduce emissions and increase resilience.
Partnering to reduce emissions throughout the value chain

In 2021, we undertook a Scope 3 materiality assessment to better understand the emissions across our value chain and improve our Scope 3 emissions reporting and understanding. We strengthened our commitment to reducing our total impact, by including Scope 3 emissions targets in Project Zero. We also set a near-term Scope 3 supplier engagement target, which aims to see 80% of suppliers (by spend) committed to setting emission reduction targets by 2026.

To achieve this, MTN is engaging with our suppliers and key TowerCo and other partners to educate and encourage them to set their own emission reduction targets in line with SBTi guidance. This education layer is pivotal, in starting supplier dialogues and encouraging supplier commitment to climate science, we indirectly drive Scope 3 emission reductions as suppliers improve their knowledge and start deploying emission reduction strategies and projects.

We are encouraging our suppliers to sign a pledge to join MTN's road to Net Zero to reduce Scope 3 emissions and are asking them to work beside us to:

1. Commit to set emission-reduction targets in alignment with science-based targets by 2026 for your organisation and publicly communicating your commitment.
2. Consider joining CDP supply chain programme as a member by reporting environmental data through CDP’s questionnaires and then sharing your emission data with us.
3. Prepare a carbon emission reduction roadmap by identifying potential decarbonisation levers across Scope 1, 2 and 3 that can be implemented across your organisation’s global footprint.
4. Consider adopting waste management and circular economy practices, and actively supporting our activities to provide lifecycle product service to our customers including trade-ins and recycling options.

Reducing Scope 3

Our strategy

Programme (SEP)

Goal: 80% of suppliers by spend commit to setting emission reduction targets in line with the SBTi by 2026, as well as drive education and commitment to carbon emission reduction across the industry.

Strategic supplier collaboration

Goal: Suppliers shall support and commitment to an emission-reduction trajectory of reducing emissions by 50% by 2030 aligning with our Net Zero ambition.

Supplier incentivisation programme

Goal: To reward suppliers in the RFx process based on climate performance, as well as provide shout-out and recognition via awards.

Internal carbon pricing

Goal: Onboarding low-carbon suppliers.

Carbon offsetting

Goal: Few hard-to-abate emissions will be reduced via carbon offsetting (only 10%) to achieve Net Zero status.

Our action plan

Vendor outreach sessions to engage with critical suppliers on climate agenda.

Supplier’s evaluation and contracts management

Integrate climate performance clauses in contracts.

Collaborate with our highest emitting suppliers to support emission reduction.

Prioritise high-performing suppliers in contract biddings or make environmental performance a part of the procurement process.

Incorporation of internal carbon pricing in business decision making (procurement).

Purchase carbon offsets from 2030 to compensate for remaining emissions (~ up to 10%).

Partnering with suppliers

MTN has been collaborating with key suppliers, like Huawei, Nokia, and Ericsson, to achieve Net Zero greenhouse gas emissions. For example, MTN will be collaborating with Huawei to decarbonise MTN’s telecommunications infrastructure, including radio access network (RAN) sites, transport networks, storage, and data centres. Huawei has developed solutions like PowerStar (technology to co-ordinate energy savings on mobile networks), intelligent batteries, and passive cabinets that do not require airconditioning. Through the partnership, we can pool our technologies and expertise to drive greater access to connectivity, digital skills, and greener and more sustainable solutions to the benefit of all.
BTS sites and data centres contribute the majority of Scope 1 and 2 emissions in most markets in which we operate due to direct emissions from diesel generators and indirect emissions from grid electricity use.

In a few markets in which we operate, BTS sites do not constitute a significant portion of Scope 1 and 2 emissions because MTN has leased these sites from TowerCos, reporting the emissions from network sites as Scope 3 (purchased services) outside of MTN’s direct operational control. MTN Scope 1 and 2 emissions may shift to Scope 3 as MTN leases additional BTS sites (provided the power assets ownership is transferred to the TowerCo as part of the transaction).

MTN is actively engaging with its TowerCos sharing information on technology options for reducing greenhouse gas emissions, sharing information on our respective greenhouse gas reduction targets, and collaborating on achieving Net Zero targets, as part of our strategy to reduce Scope 3 emissions.
Committing to recovering and reusing materials responsibly

During 2022, we developed a playbook and training materials to guide operating companies in implementing Project Infinity, our circular economy programme. The core principle of Project Infinity is the reuse and redeployment of refurbished equipment to extend product lifecycles. As our circular economy practices mature, we intend to expand Project Infinity to include handsets and consumer devices.

We are working with other operators through the GSMA and JAC to work on specific recommendations to improve circularity in the telecommunications sector. These recommendations resulted in a joint strategy paper with the GSMA.

Partnering to recover and resell network technology

We partnered with a reputable third party to deliver expertise and mitigate reselling risk associated with quality control, original equipment manufacturers (OEMs) support, cross-border trade compliance and transfer pricing. Our third-party partners provide:

- Screening, testing, refurbishment and warehousing of used network equipment.
- A marketplace platform that delivers visibility, access and intelligence/analytics on supply/demand matching.
- Shipping and handling: packaging, logistics and acting as the exporter of record.

Traditional economic activity and equipment design are needed to integrate reuse and recycling potential, which considerably impacts the environment and society. Therefore, MTN is adopting better lifecycle management practices and ensuring key circular economy principles are embedded in our strategy, processes and business lines.

By extending the life of our equipment through repair, refurbishment and recycling solutions, we are reducing the use of resources needed for making new products and limiting the amount of waste entering landfills.

Project Infinity

As technology advances and telecommunications needs change rapidly, the equipment required to operate our network also changes. As we upgrade our network, we are identifying reuse opportunities for legacy technology, working with suppliers to extend the life of network technology, and exploring opportunities to recycle industry-specific equipment.

To increase our network waste recycling rate, we are working with industry partners and customers to recover technology for reuse and recycling.

Responsible consumption

MTN + enablers
Benefits through testing, refurbishment, inventory audits, brokerage and logistics enable reuse of resources.

Responsible production

MTN + manufacturers/suppliers
Benefits through co-operation with manufacturers, suppliers, regulators and other operators.

Responsible disposal

MTN + recyclers
Benefits through increased recovery of natural resources and responsible waste management.

The benefits

Environmental
Conserve natural resources, reduce waste and emissions

Operational
Reduce obsolete, idle inventory and lead times

Financial
Savings compared to buying new from OEMs

Resilience
In-house alternative source for supply chain disruptions

Project Infinity in action

During 2022, MTN implemented successful reselling transactions from South Africa to Liberia and Afghanistan, with active opportunities ongoing in Rwanda, Guinea-Conakry and Cameroon. Each operating company realised financial benefits, with the seller gaining income from decommissioned equipment and the buyer saving considerably on the full costs of new equipment.
Developing a circular economy

Improving lifecycle management

Managing e-waste
Our primary source of waste generation includes electronic and electrical waste included in our upstream and downstream supply chain (e.g. radio transmission equipment, batteries, lighting, computers, consumer devices, cellular handsets and SIM cards).

Replacing plastic with e-SIMs
MTN is committed to reducing plastic waste and has initiated a move to recyclable plastic SIM cards and packaging optimisation that will result in a 50% reduction in SIM card size with biodegradable and recyclable plastic being used. This initiative will save 310 tonnes of plastic.

During 2022, we launched e-SIMs in South Africa and Nigeria.

Performance summary

US$656 392 saved in 2022 through refurbishing, reusing and reselling network equipment (capital expenditure avoided or saved)

774.9 tonnes network waste diverted from landfills

23.3 tonnes reused

251.7 tonnes of serialised e-waste recycled

499.9 tonnes of bulk e-waste recycled

2 293 units of network equipment repaired or reused

2 164.2tCO$_2$e emissions avoided by reusing and recycling (excludes bulk e-waste recycled TBD)

Network waste materials recovered or recycled

<table>
<thead>
<tr>
<th>Material</th>
<th>Volume (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium</td>
<td>268 047.11</td>
</tr>
<tr>
<td>Lead</td>
<td>61 076.80</td>
</tr>
<tr>
<td>Iron</td>
<td>51 880.60</td>
</tr>
<tr>
<td>Zinc</td>
<td>39 482.27</td>
</tr>
<tr>
<td>Other elements</td>
<td>35 652.06</td>
</tr>
<tr>
<td>Copper</td>
<td>29 117.79</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>10 177.90</td>
</tr>
<tr>
<td>Other metals</td>
<td>1 057.16</td>
</tr>
<tr>
<td>Antimony</td>
<td>1 017.79</td>
</tr>
<tr>
<td>Silicon</td>
<td>343.71</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>310.02</td>
</tr>
<tr>
<td>Cobalt</td>
<td>181.26</td>
</tr>
<tr>
<td>Plastics</td>
<td>149.28</td>
</tr>
<tr>
<td>Trace elements and impurities</td>
<td>146.88</td>
</tr>
<tr>
<td>Sulphur</td>
<td>92.11</td>
</tr>
<tr>
<td>Carbon</td>
<td>73.44</td>
</tr>
<tr>
<td>Chromium</td>
<td>22.46</td>
</tr>
<tr>
<td>Tin</td>
<td>18.80</td>
</tr>
<tr>
<td>Nickel</td>
<td>9.40</td>
</tr>
<tr>
<td>Manganese</td>
<td>8.09</td>
</tr>
</tbody>
</table>

Employee awareness and support are critical to ensuring individual actions to conserve these resources and result in meaningful outcomes.
Our operations span a significant geographic footprint across Africa and the Middle East. Many operating companies face challenges of land degradation, deforestation, biodiversity loss and extreme vulnerability as a result of climate change. Yet, enormous potential exists to contribute to sustainable development within these countries. We believe growth and success of any business should not come at the expense of the future of our planet. As a result, we are committed to leading by example and using our scale and voice to drive better environmental outcomes.

MTN manages environmental impacts through our Group’s environmental principles and various environmental management systems, which align with the ISO 14001 standard across our footprint.

During 2022, we undertook the development of a comprehensive and integrated Group Environmental Policy. As we operate across many diverse environments, the policy serves as a guiding light to enable broad Group adherence to international best-practice standards and Group-wide commitments.

We are committed to environmental protection and management.

**Water management**

Water scarcity and droughts increasingly affect many regions of Africa, with climate change and population growth predicted to continue aggravating the issue. On the contrary, some regions or countries have excess water, but this is only sometimes available as safe for human consumption. MTN operates in many African countries that face similar challenges.

Together with the National Cleaner Production Centre, MTN undertook an assessment to determine a more comprehensive baseline for water and waste for its offices and facilities in 14 markets across Africa.

### Most common uses of water across MTN’s operations

Ablution facilities and kitchen taps. A benchmark water use intensity of 32 litres per day is selected for the MTN markets, which is an average observed in regions in the Association of Southeast Asian Nations regions.

Generally, sufficient water is available for use requirements in all buildings assessed at MTN’s various premises. Where supply issues are known, large capacity storage reservoirs are installed to mitigate supply shortfall. The recommendations of the baselines will be unpacked during the course of 2023 to implement a more proactive approach to water management.

Some recommendations include keeping accurate tracing and monitoring of usage patterns, building awareness and education on responsible water management in the face of water scarcity and climate change.

<table>
<thead>
<tr>
<th>Fixture</th>
<th>Estimated usage (litres per unit)</th>
<th>Number of uses (/day)</th>
<th>Notes and assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilet (single flush)</td>
<td>9</td>
<td>3</td>
<td>Women flush on average three times/day while men use the toilets only 1.6 times for serious convenience breaks.</td>
</tr>
<tr>
<td>Toilet (dual flush)</td>
<td>3.5:5.0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Urinals</td>
<td>2.0</td>
<td>2.4</td>
<td>Men flush on average three times/day but this was split between toilets (40%) and urinals (60%).</td>
</tr>
<tr>
<td>Taps – kitchenette</td>
<td>4.5</td>
<td>78%</td>
<td>Water used for washing and cleaning food containers. This ranges between 3.5 and 5.0 litres per person per day, from a 9.0 litres per minute (LPM) tap, was assumed.</td>
</tr>
<tr>
<td>Basin taps</td>
<td>3.0</td>
<td>3</td>
<td>Various tap fittings were noted, ranging from mixers and individual taps to push button (high water use).</td>
</tr>
</tbody>
</table>

### Read more:
- Environmental resources position statement
- Water management position statement
- Networks and environment position statement
- MTN’s TCFD Report 2022
- Supplier code of conduct
Increasingly, different countries across the world are facing water scarcity because of climate change, which threatens the future of human and animal life in those countries. Out of its population of 45 million people in Uganda, 38 million (83% of the population) lack access to a reliable, safely managed source of water, and seven million people (17%) lack access to improved sanitation solutions.

To bridge this gap, there is a need for collaboration between both non-profit and profit organisations geared towards increasing access to clean water in the country. Companies such as MTN are making progress in this initiative. Over the years, the telecom company dedicated proceeds from MTN Kampala Marathon towards construction of boreholes in water-scarce areas of Northern Uganda including Amuria and Nakapiripirit.

The MTN Foundation in Uganda, working together with the National Water and Sewerage Corporation (NWSC), launched the community water supply scheme during the COVID-19 pandemic to provide 23 bulk water points to water-stressed areas of Kampala to mitigate the spread of the virus owing to lack of water.

There is a community-appointed liaison officer who has access to the padlock keys for the tank. Each tank is fitted with a meter for billing purposes. Each container is filled at a discounted cost of 500 UGX (about R2.5/kL) versus the nominal charge of 4 000 UGX/kL (~R20/kL). The scheme visited is still functional after three years of operation and NWSC representatives see this as an opportunity to expand the programme.

Through the deliberate water programme, the objective is to increase access to water to the most-needy communities and potentially contribute to improved hygiene, which contributes to the UNSDGs and UNICEF's Water, Sanitation and Hygiene programme. This initiative has been piloted in 18 communities. The boreholes have extended access to clean water to more than 4 000 people, including refugees in the country.
Increased population growth and rapid urbanisation resulted in the generation of large quantities of solid waste across major urban cities in Ghana, placing strain on the local authorities. In Ghana, on average, approximately 13,000 tonnes of solid waste are generated daily, with 10% collected and disposed of at designated dumping sites.

At MTN in Ghana, the waste streams generated are a mixture of general office waste, which includes paper, co-mingle recycling paper, used electronic gadgets, food waste, organics and network waste from different markets. Much of MTN’s service delivery activity relates to customer services. However, waste is generated daily, and improved measures are required continuously in line with the road to Net Zero.

In terms of optimising and integrating waste collection (leveraging mechanisms), it is important to first separate waste. Ghana is demonstrating good waste management practices for separating waste at source, as depicted in the image. This allows for greater efficiency of waste management and recycling initiatives. It is also important to weigh the separated waste streams to understand the volumes of waste generated. Separation and weighing present a clearer picture of how feasible identified leveraging mechanisms may be and how the segregated and weighed waste can be optimised. In addition to this, MTN Ghana is implementing the plastic synergy programme with a local toy manufacturer to reuse all the plastic to make toys.

Case study: Ghana

Increased population growth and rapid urbanisation resulted in the generation of large quantities of solid waste across major urban cities in Ghana, placing strain on the local authorities. In Ghana, on average, approximately 13,000 tonnes of solid waste are generated daily, with 10% collected and disposed of at designated dumping sites.

At MTN in Ghana, the waste streams generated are a mixture of general office waste, which includes paper, packaging waste, plastics, cardboard, food waste, cans, construction and demolition waste, and electronic waste (e-waste). Waste is collected by the Accra State Waste Management Authority in collaboration with Environmental Protection Agency (EPA). EPA has transitioned to being the complete regulator in the waste-management sector in Ghana and its primary responsibility is to manage refuse collection and disposal. EPA regulates, manages and provides the following:

- Disposal sites.
- Resource, recovery and recycling.
- Education and awareness.
- Operations.
- Achievements and awards.
- An educational platform for waste management – the EPA Academy – which focuses on literacy improvement and career development.

In terms of optimising and integrating waste collection (leveraging mechanisms), it is important to first separate waste. Ghana is demonstrating good waste management practices for separating waste at source, as depicted in the image. This allows for greater efficiency of waste management and recycling initiatives. It is also important to weigh the separated waste streams to understand the volumes of waste generated. Separation and weighing present a clearer picture of how feasible identified leveraging mechanisms may be and how the segregated and weighed waste can be optimised. In addition to this, MTN Ghana is implementing the plastic synergy programme with a local toy manufacturer to reuse all the plastic to make toys.
Using natural resources responsibly  

Total waste recycled: 176 tonnes

- Metals recycled: 0.99 tonnes
- Glass recycled: 0.2 tonnes
- Food waste recycled: 7 tonnes
- Plastic recycled: 99.2 tonnes
- E-waste recycled: 20 tonnes

Total waste generated across all markets: 588 tonnes
How will we create an impact on our stakeholders?

Through our Net Zero philosophy of *Connecting the world in a sustainable way*, we intend to create a positive impact on all our stakeholders through our Net Zero commitment:

- **Customers**: Driving innovation in the telecommunication space and in other digital and financial services.
- **Suppliers**: Supporting suppliers in decarbonising their own operations for a more widespread impact.
- **Community**: Contributing to a cleaner and greener environment where the community can thrive.
- **Employees**: Working towards providing a safe and healthy environment to employees, while spreading awareness about the importance of addressing climate change at individual and organisational level.
- **Investors**: Providing an opportunity to invest in a sustainable business while enhancing shareholder value.
- **Government**: Supporting governments in achieving broader climate targets and championing green growth and development.
Risk management

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Integration of climate-related risks into the overall risk management practices

Identifying and assessing climate-related risks

Managing risk is a key part of doing business and we strive to manage risks across our diverse markets continuously. MTN has established an enterprise-wide risk management (ERM) framework to identify, prioritise, and manage risks to the business. This includes risks related to MTN’s energy strategy, carbon footprint, climate change, extreme weather conditions and climate policies.

We view risk management as a core competency by embedding a risk culture supported by top-down and bottom-up processes, ensuring completeness, proportionality to our business and the robustness of mitigating actions. Identified risks are incorporated into a risk register, including any mitigation measures and the action owner within the organisation.

1. ERM at MTN is a centrally driven strategy and process
2. Its objective is to ensure that management has the tools and techniques to identify threats and opportunities that impact strategic and operational objectives
3. Dedicated ERM resources are in place at Group and each Opco
4. Management Exco teams have risk management as a standing agenda item
5. Risk committees (and teams) at Group and Opco-levels drive the Ambition 2025 objectives of elevating ERM and internal control
6. The scope of ERM covers the entire ambit of all MTN activities, which the principal risk universe seeks to capture
Our processes for identifying and assessing climate-related risks

MTN has identified climate-related risks by reviewing published reports such as publications on climate change data, sector literature describing potential climate change impacts on the telecom industry, and TCFD recommendations on potential risks and opportunities. By engaging with the operating companies through workshop sessions and working with external subject matter experts, we continuously monitor and review the identified climate-related risks and opportunities.

MTN has established a comprehensive compliance universe encompassing all relevant ESG laws and regulations across our markets. As part of our commitment, we have re-prioritised most climate-related laws and regulations within our compliance universe, as core, to give greater emphasis to the growing importance of environmental issues.

To assess materiality of climate-related risks we maintain comprehensive risk registers at each Opco. The risk register identifies a risk owner to ensure accountability. It also identifies the probability and potential impact of an identified risk, which is combined with a risk rating.

We continue to explore options to better evaluate the likelihood and materiality of potential climate-related risks. This year we have started a pilot to quantify the physical climate-related risks on a selection of MTN’s assets, which we will describe in more detail on the following pages. We have not yet modelled the potential financial impacts of different climate scenarios. However, we do incorporate climate risks into our ERM framework and engage with the local operating companies on these issues.
Our processes for managing climate-related risks

The risk register identifies controls or mitigation measures in place to determine the 'residual risk' impact and the residual risk rating. This residual risk rating allows MTN to prioritise climate-related risks. Finally, the risk register identifies any additional action plans for each climate-related risk.

To ensure compliance with core ESG laws and regulations, we have also developed comprehensive compliance risk management plans that delineate the specific ESG obligations that must be met and define the necessary controls to achieve compliance. In addition, we verify our level of compliance through a robust process of monitoring and testing, which involves assessing the adequacy and effectiveness of our control environment. We aim to test our entire compliance universe over three years to ensure adherence to our compliance requirements.

MTN’s Board and its committees oversee an integrated risk management process through regular engagement with management across a broad scope of activities to ensure the effectiveness of risk management. Opco-level risks are discussed at Opco Exco and Opco Audit and Risk committees.

1. **Identify:** Potential climate-related risks and opportunities and perform a materiality assessment

2. **Model:** Assess the probability of the risk impact and likelihood of our material risks and opportunities

3. **Manage:** Monitor and mitigate risks, as well as develop and maintain effective internal controls

4. **Report:** Integrate into the overall risk management framework

**Risk management process**
Tracking climate policy developments

Net Zero commitments in Africa

As of May 2022, 53 African countries had submitted a Nationally Determined Contribution (NDC) – a climate action plan to mitigate greenhouse gas emissions and adapt to climate change. These plans fulfil the requirements of the Paris Agreement, which requests each country to outline and communicate its future climate actions. Twelve African countries have announced long-term Net Zero emissions pledges, aiming to reach carbon neutrality between 2050 and 2070. These include several major economies, notably Nigeria and South Africa, as well as several smaller nations.

In addition to their NDCs, several African governments have made commitments related to other important climate and environmental goals. Morocco, for example, has pledged not to build any new coal-fired power plants, while Egypt has committed to phase out coal-fired power stations. South Africa has also committed to decarbonise its economy, phase down coal use and plans for steady increases in its carbon tax. Nigeria is planning to adopt a carbon tax or emission trading system.

Many African NDCs include targets that are conditional on financial support from developed countries. Financial support from the advanced economies will be vital to efforts decarbonising Africa’s energy systems and implementing the NDCs. The vast majority of African NDCs contain mitigation and adaptation targets that are conditional on receiving international financial, technical and capacity-building support. In aggregate to date, 48 African countries have requested over USD 1.2 trillion of international financial support by 2030 to implement their NDCs. Almost 60% is for climate mitigation actions, around 30% for adaptation and the remaining 10% unspecified or for both mitigation and adaptation. Six countries – Cameroon, Egypt, Ethiopia, Nigeria, Somalia and South Africa – account for a combined 60% of the finance requested to implement their NDCs.

Announced Net Zero emissions pledges

<table>
<thead>
<tr>
<th>African countries</th>
<th>Announced pledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabo Verde</td>
<td>Climate neutral by 2050</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>Carbon neutral by 2030</td>
</tr>
<tr>
<td>Liberia</td>
<td>Climate neutral by 2050</td>
</tr>
<tr>
<td>Malawi</td>
<td>Carbon neutral by 2050</td>
</tr>
<tr>
<td>Mauritania</td>
<td>Carbon neutral by 2050</td>
</tr>
<tr>
<td>Mauritius</td>
<td>Carbon neutral by 2070</td>
</tr>
<tr>
<td>Namibia</td>
<td>Climate neutral by 2050</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Climate neutral by 2060</td>
</tr>
<tr>
<td>Rwanda</td>
<td>Carbon neutral by 2050</td>
</tr>
<tr>
<td>São Tomé and Príncipe</td>
<td>Climate neutral achieved in 1998</td>
</tr>
<tr>
<td>Seychelles</td>
<td>Climate neutral by 2050</td>
</tr>
<tr>
<td>South Africa</td>
<td>Climate neutral by 2050</td>
</tr>
</tbody>
</table>

Notes: Announced pledges include verbal pledges made by heads of states at COP26 as well as formal submissions and announcements. São Tomé and Príncipe reached climate neutrality in 1998, and now deems itself ‘carbon negative’, which refers to the situation where the net effect between the emissions and sinks of a country is negative.

Source: Africa Energy Outlook 2022
The physical risks of climate change

Africa is one of the most vulnerable regions in the world to climate change, according to the IPCC. Africa is already more severely affected by climate change than most other regions, with infrastructure for transportation, telecommunications, water supply, and electricity under threat. Every region of the continent was adversely affected by extreme weather events in 2022, from devastating flooding in South Africa to cyclones in Nigeria.
Physical climate change-related events already being experienced in Africa

Physical climate change-related events and their impact on critical infrastructure

<table>
<thead>
<tr>
<th>Type of climate event</th>
<th>Location</th>
<th>Date</th>
<th>Impacts/Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flooding</td>
<td>South Africa</td>
<td>April 2022</td>
<td>Parts of southeast South Africa had record-breaking severe rain from 9 to 13 April, 2022. Between 11 and 12 April, 304mm (12 inches) of rain fell in the KwaZulu-Natal province, the largest 24-hour rainfall totals in the past 60 years. Durban was one of the worst impacted cities, with over 300 fatalities due to floods and landslides. Homes, bridges, and roads were also destroyed due to the intense rain. Flooding in the KZN region has caused power outages at more than 500 sites.</td>
</tr>
<tr>
<td>Tropical Storm Ana</td>
<td>Mozambique</td>
<td>January 2023</td>
<td>Ana made landfall in Northern Mozambique, destroying over 12 000 dwellings, 25 medical facilities, roads, electrical poles, and water supply infrastructure. Floods were triggered by the storm’s heavy rain, inundating 37 000 hectares of crop. Falling trees and poles caused power outages.</td>
</tr>
<tr>
<td>Flooding</td>
<td>Nigeria</td>
<td>October 2022</td>
<td>In October, flooding in Nigeria’s south caused hundreds of thousands of people to be displaced and disrupted transport and food and fuel supplies. Transport was affected for at least two weeks, and more than 500 casualties were reported. The ongoing large MTN network modernisation and swap-out project was impacted by the flood catastrophe.</td>
</tr>
<tr>
<td>Drought</td>
<td>Zambia</td>
<td>July 2022</td>
<td>Most of Zambia’s grid electricity is generated by hydropower. Droughts have caused unprecedented power outages due to low reservoir levels. Drought conditions have increased energy costs and increased energy insecurity over the past few years.</td>
</tr>
<tr>
<td>Heavy rains</td>
<td>Rwanda</td>
<td>January 2022</td>
<td>Severe weather, including torrential rain, thunderstorms, and strong winds, has caused floods and landslides in western Rwanda since 1 January. Approximately 15 fatalities and 37 injuries have been reported, with seven of the deaths and 26 of the injuries caused by lightning. Flooding and landslides have destroyed 130 properties in the region. Business interruption due to flooding impacted operations, including interruptions to supply chain.</td>
</tr>
<tr>
<td>Cyclone</td>
<td>Madagascar</td>
<td>February 2022</td>
<td>Tropical cyclone Batsirai caused severe damage to Mananjary, Madagascar, with winds of up to 235km/h, damaging houses, sweeping crops away, and causing 120 deaths due to landslides and flooding. Moreover, Batsirai has caused damage to roads and transport links, leaving some areas inaccessible, with 19 roads and 17 bridges destroyed.</td>
</tr>
<tr>
<td>Wildfires</td>
<td>Botswana</td>
<td>August 2022</td>
<td>Fire activity in early August 2022 was short-lived, with several active blazes filling the sky by mid-month. The fires burned within and just outside the Central Kalahari and Khulse game reserves. The Botswana Meteorological Services reported a fire danger index of ‘very dangerous’ to ‘extremely dangerous’ on 14 August, indicating that any fire could spread rapidly and be difficult to control.</td>
</tr>
</tbody>
</table>
Climate change risk assessment pilot project

We are in process of conducting a pilot climate change risk assessment (CCRA) (physical risk) that will assess the potential impact of climate change on MTN’s selected assets. The physical CCRA will consider the potential impact climate events may have on MTN across our operations.

We are embarking on this physical CCRA as we are aware that climate change, and the associated political and social response, are already presenting material risks and opportunities to businesses across Africa. These risks and opportunities have grown in prominence over the last five to 10 years and are expected to increase significantly in scale and coverage in the next decade.

The physical impacts of climate change pose a threat to MTN’s business operations and may have financial consequences, through impacts of extreme weather events such as storms, floods, and droughts. The effect of these changes could result in business interruption through damage to our physical assets. Understanding the nature of these risks will support us in increasing our resilience against climate change.

The objectives of this MTN pilot project are to: (1) on a sample basis, to undertake a physical CCRA for selected regions (27 assets over six countries), identifying specific asset types within each to understand the risks and opportunities posed through the impacts of climate change; (2) to develop a methodology/standard operating procedure that can be replicated for our other regions with similar asset classes and risk types; and lastly to then (3) incorporate this methodology into our existing risk management framework.

We have selected the following asset types: Data centres; BTS in urban areas and in rural areas; buildings and warehouses to be assessed in this pilot project.

In alignment with internationally recognised guidance set out within EP4 (2020) and TCFD documentation, we will assess the pilot project under baseline conditions as well as two future climate scenarios as recommended by the TCFD. Hence, the scenarios selected for this pilot project cover both a best-case and a worse-case projection scenario, as seen in the adjacent table. Additionally, the time horizons that will be used within this assessment will be baseline, 2030 and 2050.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Definition</th>
<th>Mean annual temperature increase by 2100 compared to pre-industrial averages (1850)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSP1-2.6</td>
<td>Envisions a central pathway in which trends continue their historical patterns without substantial deviations</td>
<td>+1.8°C (very likely range of 1.0°C to 1.8°C)</td>
</tr>
<tr>
<td>SSP5-8.5</td>
<td>High challenges for mitigation (resource/fossil fuel intensive) and low for adapt (rapid development)</td>
<td>+4.4°C (very likely range of 3.3°C to 5.7°C)</td>
</tr>
</tbody>
</table>
Climate change risk assessment pilot project

The CCRA pilot project is focused on six countries and a selection of 27 different assets for location-specific assessments. The locations of the selected MTN assets are in South Africa, Nigeria, Ghana, Cameroon, Liberia and Uganda. The assets were selected to provide a range of asset types and climate conditions for the study. Both urban and rural sites were selected.

The CCRA Pilot included a diverse range of geographies and some of MTN’s largest markets:

- **28.6 million Subscribers***
  - 2.2% GHG Emissions (Scope 1 and 2)**

- **10.7 million Subscribers***
  - 1.3% GHG Emissions (Scope 1 and 2)**

- **2.0 million Subscribers***
  - 2.3% GHG Emissions (Scope 1 and 2)**

- **76.0 million Subscribers***
  - 9.4% GHG Emissions (Scope 1 and 2)**

- **17.1 million Subscribers***
  - 0.6% GHG Emissions (Scope 1 and 2)**

- **36.5 million Subscribers***
  - 59.1% GHG Emissions (Scope 1 and 2)**


**% GHG Emissions (Scope 1 and 2) based on 2022 data as reported in MTN Group Sustainability Report

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*Climate Change Report 2022  49*
As part of the pilot project, MTN has reviewed the public literature on the potential physical risks of climate change within our initial study area. The studies highlight a range of potential impacts with in-country variability depending on the region of concern. The following are some of the key climate-related risks identified in the study area:

**Ghana**

Climate change is expected to increase temperatures and impact water availability throughout the country. Some areas may also experience flooding due to increased intensity of rainfall, coastal erosion, and storm surges. The country's capacity to handle predicted climate changes is considered weak; increasing vulnerability. (World Bank Group, 2021)

**Uganda**

Climate change is causing concerns in Uganda, with rising temperatures, water scarcity, and extreme weather events. Future dry and wet periods are expected to become more extreme, with increased precipitation and flooding potentially increasing malaria risks. Additionally, climate change is expected to cause infrastructure damage. (Federal Ministry for Economic Cooperation and Development, 2022)

**Cameroon**

Climate change is expected to impact Cameroon's infrastructure through extreme weather events. Heavy rain events will cause flooding, while high temperatures can cause roads, bridges, and coastal infrastructures to develop cracks and degrade more quickly. Sea-level rise threatens coastal communities and may cause saltwater intrusion in waterways and groundwater reservoirs. (Potsdam Institute for Climate Impact Research, 2022)

**South Africa**

South Africa is already experiencing climate change impacts due to increased temperatures and rainfall variability. The country is warming at over twice the global rate, with a pronounced increase in western and northeast regions. Extreme weather events are also increasing, with heatwave conditions becoming more frequent, dry spell durations lengthening slightly, and rainfall intensity increasing. (South Africa NDC, 2021)

**Nigeria**

Nigeria's coastal states face extensive risks from storm surge along the coast and inland flooding and wildfires in the Niger Delta region. Moreover, the country's eastern and central areas are expected to experience increased aridity and drought, significantly impacting on livelihoods. (World Bank Group, 2021)

**Liberia**

Climate change is expected to increase temperatures and impact water availability throughout the country. Some areas may also experience flooding due to increased intensity of rainfall, coastal erosion, and storm surges. The country's capacity to handle predicted climate changes is considered weak; increasing vulnerability. (World Bank Group, 2021)
The pilot project is designed to screen our MTN assets against a number of climate hazards (see table). The CCRA climate hazard risk screening process identifies the selected MTN assets that have exposure to one or more climate hazards, and then determines the scale of the magnitude of that exposure.

**Evaluation process**

**Step 1 – Screening**
This includes a high-level screening of each asset’s operations and associated facilities against a range of physical climate hazards that are potentially of material risk to each asset.

**Step 2 – Climate data collection**
The team will compile climate data for the baseline period and future projected climatic conditions, for all relevant climate hazards.

**Step 3 – Climate data trend analysis**
The team will evaluate the baseline climate data to identify the presence and intensity of any hazards within each geographic area. The team will rely on modelled climate data combined with the best available literature to determine how each climate hazard is projected to change in the future.

**Step 4 – Risk review**
Trends in the climate data are then assessed alongside relevant asset/facility information, to review the presence and potential materiality of climate risks to each asset.
Climate change risk assessment pilot project continued

Physical CCRA pilot project preliminary findings

The following is a sampling of the climate risk scores assigned to a sampling of assets in one of our key markets. This provides us with a consistent and comprehensive approach to evaluating physical climate risk and the potential implications for our assets. The analysis focuses on 2050, under two different global warming scenarios (SSP1-2.6 and SSP5-8.5). All of the assets fall within areas where water stress is projected to be very high with rising temperatures. Based on this approach, which we will continue to refine over time, our operating companies can factor physical climate risks into planning and future investment decisions. Building improvements, maintenance operations, emergency planning can all serve to mitigate potential climate hazards. In some cases, we might also need to consider relocating certain critical assets. We can also factor in potential climate risks in the siting of new infrastructure.

A sampling of climate hazard risk scores for one pilot project jurisdiction
(period: 2050, scenario: SSP1-2.6 & SSP5-8.5*)

<table>
<thead>
<tr>
<th>Asset</th>
<th>Criticality</th>
<th>Scenario and period</th>
<th>Extreme heat</th>
<th>Water stress and drought</th>
<th>River flooding</th>
<th>Extreme rainfall flooding</th>
<th>Wildfires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Centre</td>
<td>Very critical</td>
<td>SSP1-2.6 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SSP5-8.5 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>BTS – Urban</td>
<td>Critical</td>
<td>SSP1-2.6 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SSP5-8.5 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>BTS – Rural</td>
<td>Critical</td>
<td>SSP1-2.6 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SSP5-8.5 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Building</td>
<td>Critical</td>
<td>SSP1-2.6 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SSP5-8.5 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Warehouse</td>
<td>Very critical</td>
<td>SSP1-2.6 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SSP5-8.5 (2050)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

*Shared Socioeconomic Pathways (SSPs) based on the IPCC Sixth Assessment Report (AR6)). SSP1-2.6 is the low emissions scenario, SSP5-8.5 scenario is the very high emissions scenario/the worst-case scenario of ‘business as usual’.
Case study: physical impacts of flooding

Flooding caused severe landslides in South Africa

In April 2022, South Africa experienced widespread flooding along the KwaZulu-Natal and Eastern Cape coastline affecting more than 500 MTN sites. Severe landslides affected MTN infrastructure including fibre breaks and exacerbated power cuts in affected areas, which led to loss of connectivity. The area that experienced the most damage was within a 100 km radius of Durban Central.

Throughout the flooding event, MTN headquarters co-ordinated with the Global Network Operation Centre (GNOC), Huawei, and regional managers to restore services. MTN management worked collaboratively with transmission staff to strategise and develop plans prioritising connectivity restoration at different sites and transmission hubs.

In some areas, damaged roads caused difficulties in site accessibility and prompt service restoration. The technical team was acting as decision maker and informing the field workers of actions to take. This strategy proved to be very effective. Updates on service recovery, ongoing actions and active outages was shared twice daily.

MTN had 150 backup generators of which 50 were running continuously. The remaining 100 generators ran as required during individual power failures and loadshedding. An additional 40 generators were deployed to the region to provide backup power to sites affected by power-related issues. Generators utilised during this period resulted in total diesel usage of approximately 10 000 litres per day.

Climate change is predicted to result in more intense rainfall events because warmer air can hold more moisture, which may increase the chances of flash flooding and landslides. MTN has been evaluating the risk of flooding to improve the resilience of its infrastructure.
Case study: physical impacts of wildfire

Destructive wildfires in Knysna in South Africa

South Africa experienced a destructive wildfire in Knysna-Plettenberg Bay in the Western Cape between 7 and 11 June, 2017, affecting over 19,000 hectares and 1,400 homes. Eight fatalities were reported, with more likely due to heart attacks. The region's dense vegetation and the dry, flammable conditions facilitated the rapid spread of the fire, turning into an uncontrollable inferno. As the flames engulfed the Knysna area, at least 10,000 residents were forced to flee their homes, seeking safety and shelter.

The suburbs of Kanonkop, Knysna Heights and Paradise were the most affected, with a total of 241 dwellings destroyed or severely damaged. Belvidere suffered less damage with only 31 structures lost. Kranshoek had limited damage.

The Knysna wildfire caused damage to telecommunication infrastructure, including fibre networks, cell towers and communication lines. About 255 sites went down due to the fire, but most (241) were restored on the same evening. Some customers in Cape Town and the Eastern Cape experienced intermittent service disruptions due to damaged power lines.

MTN deployed technical teams to assess and repair network infrastructure, restoring connectivity and reestablishing communication channels for residents and emergency services. This helped co-ordinate relief efforts and allowed customers to contact family members. MTN actively engaged with the Knysna community, offering support beyond just infrastructure and financial assistance.

Around the world, wildfires are growing in intensity and spreading in range, wreaking havoc on the environment, human health, and infrastructure. Climate change creates the conditions for more destructive wildfires, and we must learn to better manage and mitigate the risk of wildfires.
Metrics and targets

Our targets and performance
MTN ESG data 2017 – 2022

Climate Change Report 2022
Our targets and performance

Metrics and targets are used to assess and manage material climate-related risks and opportunities. The TCFD recommends that organisations disclose the metrics and targets they use to evaluate and monitor climate-related risks and opportunities, including their Scope 1, 2 and, if appropriate, 3 emissions.

MTN relies on various metrics to measure its environmental and social performance. Iran is included in our sustainability reporting, except for carbon management information, which is excluded based on our indirect ownership holding.

Our emissions profile
MTN's Scope 1 and 2 emissions decreased by ~13.9% in 2022, excluding MTN SA, against a 2022 reduction target of 3.5%. Including South Africa, the Group achieved 9.85% reduction in Scope 1 and 2 emissions due to the challenges associated with loadshedding in MTN SA. Scope 1 emissions decreased by 5% and Scope 2 emissions decreased by 11% in 2022 compared to 2021. Operating companies continue to implement carbon and energy reduction initiatives driving reductions in Scope 1 and 2 emissions.

Base Transceiver Station (BTS) sites accounted for 65% of Scope 1 and 2 emissions, utilising a significant amount of electricity and diesel. However, this is a decrease relative to 2021 (71.7%). MTN Scope 1 and 2 emissions may shift to Scope 3 as MTN leases additional BTS sites (provided the power assets ownership is transferred to the TowerCo as part of the transaction).

South Africa (59.1%) and Nigeria (9.4%) are the highest contributors for Scope 1 and 2 emissions for 2022 as they are MTN’s two largest markets and have an extensive network coverage. South Africa is heavily reliant on coal for the production of electricity (>80%), which results in relatively high Scope 2 emissions. By contrast, natural gas is Nigeria’s dominant electricity generation source, resulting in a lower-carbon intensity.

Measuring our GHG emissions
MTN relies on the guidance provided by the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard and the Greenhouse Gas Protocol Scope 3 Corporate Value Chain Standard in developing its Scope 1, 2, and 3 emissions inventory. All MTN OPCOs are included, and further segmented into facility types within each Opco (BTS Sites, Data Centres, Retail Stores, Buildings, Mobile Equipment, etc.).

MTN collects energy consumption data on a monthly basis from each of the Opscos for calculating Scope 1 and 2 emissions. Scope 1 emissions include all stationary, mobile, and fugitive emissions for each Opco. Scope 2 emissions are calculated based on grid and IPP metered electric supply. The Scope 1 and 2 data undergo thorough quality control processes on a monthly basis to identify any potential outliers, including a rigorous internal audit process. We are also considering an external verification process. Scope 3 emissions are calculated biannually and are calculated for all relevant Scope 3 categories based on Opco-level data. Scope 3 emissions account for nearly 80% of MTN’s total GHG emissions. Scope 3 emissions are also the most challenging to compile.

Emissions data are reflected in real time (for Scope 1 and 2) and biannually for Scope 3, on the PowerBi Dashboard for MTN’s Project Zero Tracking. Opscos can view how they are tracking against Net Zero targets for the current year and how they are tracking in comparison to historical consumption/emissions.
MTN submitted its climate targets for validation by the SBTi in 2022. SBTi is a partnership involving the UNGC, the World Resources Institute, CDP and the World Wide Fund for Nature. SBTi encourages companies to set targets in line with the Paris Agreement. In May 2023, the SBTi validated MTN Group’s greenhouse gas reduction targets. After a detailed review, SBTi determined that the MTN Group targets were in conformance with the SBTi criteria and recommendations.

Other metrics
In addition to our GHG emissions, MTN also tracks and reports additional metrics, or KPIs, specific to mobile operators. These additional metrics are recommended by the GRI and SASB. The KPIs help companies to identify and manage emerging opportunities and risks, while demonstrating to stakeholders how their corporate purpose is brought to life. Additionally, the framework creates an opportunity for the industry to reinforce its environmental and social impact by aligning operators around the same guiding KPIs.

We recognise that by focusing on ESG and addressing global challenges, such as climate change, we can build resilience and drive long-term value creation. MTN also acknowledges the need to provide information consistently and diligently on these material topics such as energy consumption, responsible procurement and supply chain, digital inclusion, water and waste management in addition to GHG emissions reporting.

As discussed in the Governance section, the Board of Directors works closely with the management team to develop an informed view of MTN’s key short and long-term business risks, including climate-related risks and opportunities. MTN’s management team is organised into functional groups responsible for specific issues. To this end, we have linked 2022 executive remuneration for STIs and LTIs to ESG, focusing on Net Zero, diversity and inclusion and the expansion of rural broadband.
MTN Group has established an ambitious set of science-based targets based on the advice and recommendations of the SBTi:

- **Boundary**: Targets include all entities for which MTN Group has operational control, including data centres, BTS sites, offices, retail locations, and warehouses.

- **Targets**: Targets for Scope 1 and 2 emissions based on absolute reduction targets (absolute contraction approach). Scope 3 emissions are divided into two parts. 5.1% of base year emissions are subject to an absolute reduction target (-50% by 2030), 62.1% of base-year emissions are subject to supplier engagement target.

- **Baseline**: Recent base year period (2021)

- **Scope**: All greenhouse gases are included within the target (e.g., CO₂, methane, HFCs)

- **Timeline**: Medium and long-term reduction targets

### Scope 1 and 2 emissions targets

<table>
<thead>
<tr>
<th>Year</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
<th>2030</th>
<th>2040</th>
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</thead>
<tbody>
<tr>
<td>Scope 1</td>
<td>-3.5%</td>
<td>-7.5%</td>
<td>-12.5%</td>
<td>-17.5%</td>
<td>-23.5%</td>
<td>-29.5%</td>
<td>-36%</td>
<td>-43%</td>
<td>-50%</td>
<td>Net Zero</td>
</tr>
<tr>
<td>Scope 2</td>
<td>-3.5%</td>
<td>-7.5%</td>
<td>-12.5%</td>
<td>-17.5%</td>
<td>-23.5%</td>
<td>-29.5%</td>
<td>-36%</td>
<td>-43%</td>
<td>-50%</td>
<td>Net Zero</td>
</tr>
</tbody>
</table>

**The official wording of our SBTi approved science-based target:**

“MTN Group Limited commits to reduce absolute Scope 1 and 2 GHG emissions 50% by 2030 from a 2021 base year. MTN Group Limited also commits to reduce absolute Scope 3 GHG emissions from fuel and energy-related activities 50% by 2030 from a 2021 base year. MTN Group Limited commits that 80% of its suppliers by spend covering purchased goods and services and capital goods will have science-based targets by 2026.”
## MTN ESG data 2017 – 2022

### Doing for planet

<table>
<thead>
<tr>
<th>Energy consumption – Total</th>
<th>Unit</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>GJ</td>
<td>6 446 323</td>
<td>7 042 639</td>
<td>8 974 540</td>
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<tr>
<td>GJ</td>
<td>2 773 817</td>
<td>3 137 099</td>
<td>5 525 569</td>
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<tr>
<td>GJ</td>
<td>34 215</td>
<td>28 358</td>
<td>165 573</td>
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<tr>
<td>GJ</td>
<td>155 265</td>
<td>217 902</td>
<td>165 573</td>
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<tr>
<td>GJ</td>
<td>3 483 026</td>
<td>3 659 279</td>
<td>3 283 398</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GHG emissions – Total (Scope 1, 2 and 3)</th>
<th>tCO2e</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>GJ</td>
<td>5 296 351</td>
<td>5 021 071</td>
<td>2 138 527</td>
<td>2 281 348</td>
<td>2 131 042</td>
<td>2 006 248</td>
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<tr>
<td>GJ</td>
<td>2 93 867</td>
<td>308 810</td>
<td>272 695</td>
<td>466 163</td>
<td>270 721</td>
<td>324 101</td>
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<tr>
<td>GJ</td>
<td>584 591</td>
<td>658 345</td>
<td>953 361</td>
<td>895 748</td>
<td>973 465</td>
<td>806 339</td>
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<tr>
<td>GJ</td>
<td>4 417 894</td>
<td>4 053 915</td>
<td>912 471</td>
<td>919 437</td>
<td>886 857</td>
<td>875 808</td>
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<tr>
<td>GJ</td>
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<td></td>
</tr>
</tbody>
</table>

### Scope 3 emissions breakdown

| GJ | 2 663 484 | 2 648 685 |
| GJ | 143 188 | 703 518 |
| GJ | 179 459 | 215 206 |
| GJ | 25 760 | 25 760 |
| GJ | 2 474 | 2 563 |
| GJ | 24 903 | 25 245 |
| GJ | 1 348 118 | 452 606 |
| GJ | 15 724 | 5 098 |
| GJ | 3 929 | 13 878 |

<table>
<thead>
<tr>
<th>GHG emissions (Scope 1 and 2) per subscriber</th>
<th>tCO2e/number of subscribers</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>GJ</td>
<td>0.0183201</td>
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<td>0.0076376</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GHG emissions (Scope 1 and 2) per revenue</th>
<th>tCO2e/revenue (Rm)</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>GJ</td>
<td>0.0000256</td>
<td>0.0000288</td>
<td>0.0000119</td>
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</table>

### Total alternative energy sites

<table>
<thead>
<tr>
<th>Number</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>GJ</td>
<td>14 794</td>
<td>10 485</td>
<td>8 396</td>
</tr>
<tr>
<td>GJ</td>
<td>3 002</td>
<td>3 005</td>
<td>2 435</td>
</tr>
<tr>
<td>GJ</td>
<td>8 840</td>
<td>4 831</td>
<td>3 937</td>
</tr>
<tr>
<td>GJ</td>
<td>2 952</td>
<td>2 861</td>
<td>2 276</td>
</tr>
</tbody>
</table>

### MTN Group management services CDP score

<table>
<thead>
<tr>
<th>Rating</th>
<th>C</th>
<th>B-</th>
<th>C</th>
<th>C</th>
<th>C</th>
<th>C</th>
</tr>
</thead>
</table>

### Water and waste

| GJ | 99.20 | 16.04 | 31 | 784 | 272 | 216 |
| GJ | 928 000 | 30 084 | 18 353 | 2 477 | 225 | 1 617 685 |
| GJ | 1 392 253 | 139 000 | 49 492 | 1 059 129 | 477 723 | 807 181 |
| GJ | 65 | Not reported | 2 112 | Not reported | 86 | 144 000 |

1. Scope 3 only includes all currently relevant and applicable Scope 3 categories. MTN underwent a full Scope 3 screening in FY2021.
2. Total energy includes Scope 1 and Scope 2.
3. MTN Group Internal Audit and Forensic Services performed an audit over the carbon footprint data inputs for data completeness and accuracy of a sample of the most representative MTN operations. This included Scope 1 areas (Stationary Combustion, Mobile Combustion and Fugitive Emissions) and Scope 2 (Electricity). All process and control deficiencies identified will form part of a remediation plan that management will address to improve the control environment.
4. Emissions for Scope 2 were restated from 953 351tCO2e previously reported to 953 361tCO2e.
Going forward
MTN's sustainability commitments are a testament to the Company’s belief that sustainability is essential for business growth. By creating shared value for its stakeholders through environmental, social, governance and economic value-added business practices and solutions, MTN is not only creating a more sustainable business model but is also playing a significant role in improving the lives of people in Africa.

As we look to the future, MTN is committed to sharing our progress and experiences throughout our sustainability journey on the Road to Zero. We faced several challenges in 2022 as a result of loadshedding and severe weather events, but we are confident in the resilience of our business strategy and the investments that we are making to reduce our carbon footprint. With our governance structures focused on climate change and a robust risk management approach, we are committed to responsibly managing the evolving challenges of climate change.

Our priorities going forward include:
• Delivering on our commitments to achieve Net Zero emissions;
• Tracking our progress against our new SBTi validated goals;
• Identifying new, innovative solutions to reduce supply chain emissions;
• Strengthening our approach to climate risk assessment;
• Continuing to expand and improve our climate disclosures;
• Exploring options for internal carbon pricing; and
• Engaging with our Board members, employees, and customers on the risks and opportunities associated with climate change.

There are no silver bullets, but with a strong commitment to responsible action and a talented team of individuals to deliver on our strategy, we are optimistic about the future and our ability to make a positive impact for the planet.

Stay up to date on our progress
Visit our sustainability page
Forward looking information

Opinions and forward looking statements expressed in this report represent those of the Company at the time. Undue reliance should not be placed on such statements and opinions because by nature, they are subjective to known and unknown risk and uncertainties and can be affected by other factors that could cause actual results and Company plans and objectives to differ materially from those expressed or implied in the forward looking statements.

Neither the Company nor any of its respective affiliates, advisers or representatives shall have any liability whatsoever (based on negligence or otherwise) for any loss howsoever arising from any use of this report or its contents or otherwise arising in connection with this presentation and do not undertake to publicly update or revise any of its opinions or forward looking statements whether to reflect new information or future events or circumstances otherwise.

Mapping our SDG impact

In 2021, MTN Group implemented an SDG prioritisation tool to determine the SDGs and SDG Ambition Benchmarks on which we could deliver the biggest impact, while creating business value. It considers three dimensions – impact potential, strategic alignment and risk management potential – for which scores are attributed against defined qualitative criteria. The tool considers various internal and external assessments such as our risk register and industry research. It also incorporates stakeholder views collected through surveys, workshops and materially assessments. The results are then refined to ensure alignment with our strategy.