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Second Party Opinion

Republic of South Africa Use of Proceeds Sustainable Finance Framework

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Location: Republic of South Africa

Sector: Sovereign

Alignment Summary

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

- ✓ Social Bond Principles, ICMA, 2025
- ✓ Social Loan Principles, LMA/LSTA/APLMA, 2025
- ✓ Green Bond Principles, ICMA, 2025
- ✓ Green Loan Principles, LMA/LSTA/APLMA, 2025
- ✓ Sustainability Bond Guidelines, ICMA, 2021

See [Alignment Assessment](#) for more detail.

Strengths

Eligible projects aim to address key sustainability challenges for South Africa, supporting the country's sustainable development efforts. Financing renewable energy and energy-efficient infrastructure supports initiatives that directly target the country's primary source of greenhouse gas emissions--electricity generation from coal--promoting a cleaner energy mix and reducing overall carbon emissions. In parallel, social projects such as employment generation, access to health services, and education are key to promoting economic and social development.

Weaknesses

Achieving the full environmental benefits of some projects will depend on the country's progress on decarbonization. Financing clean energy, energy efficiency, and clean transportation projects represents a significant step toward a low-carbon, climate resilient future. But achieving the full environmental benefits may be constrained by the country's high reliance on coal. Improving electricity access while lowering fossil fuel dependence is also key for achieving the full environmental benefit of many green projects.

Areas to watch

The framework's broad scope, typical for a sovereign issuer, creates uncertainty regarding future environmental, social, and climate risks and benefits of specific projects. Eligible project categories often have thresholds, and the issuer has provided examples of projects. However, some project categories lack detailed descriptions. Robust allocation and impact reporting from the issuer is therefore crucial.

Social projects must deliver the intended benefits. Eligible projects are framed within existing government programs. This should prioritize effective execution to deliver social benefits and minimize risk, such as limited access, debt, or misuse of funds.

Funds may be allocated to refinancing expenditure incurred before Dec. 31, 2025, due to the three-year lookback period. Certain green criteria within the framework expired on Dec. 31, 2025. The issuer has confirmed that expenditure from 2026 onward will not be evaluated against these expired criteria to determine eligibility.

Shades of Green Projects Assessment Summary

We assess eligible projects under the issuer's framework based on their environmental benefits and risks, using Shades of Green methodology.

Renewable energy Medium green

Manufacture of hydrogen

Production of electricity, heating, and cooling from solar photovoltaic (PV), concentrated solar power, wind power, and ocean energy

Production of electricity, heating, and cooling from hydropower

Production of electricity, heating, and cooling from geothermal

Production of electricity, heating, and cooling from bioenergy

Transmission and distribution of electricity

Transmission and distribution networks for renewable and low-carbon gases

Energy efficiency Medium green

Manufacture of low carbon and resource efficiency technologies

Storage of electricity

Storage of thermal energy

Storage of hydrogen

District heating/cooling distribution

Installation and operation of electric heat pumps

Data-driven solutions for greenhouse gas emission reductions

Pollution prevention and control Medium to Light green

Production of heating/cooling using waste heat

Anaerobic digestion of sewage sludge

Separate collection and transport of non-hazardous waste in source segregated fractions

Anaerobic digestion of bio-waste

Composting of bio-waste

Material recovery from non-hazardous waste

Landfill gas capture and utilization

Direct air capture of carbon dioxide (CO2)

Capture of greenhouse gas emissions

Transport of CO2

Permanent sequestration of captured CO2

Environmentally sustainable management of living natural resources and land use

 Dark to Medium green

Forestry and land rehabilitation

Clean transportation

 Medium to Light green


Commuter road, passenger rail, and freight rail transport

Infrastructure for low carbon transport

Passenger cars, road commercial vehicles, and road freight transport

Inland passenger and freight water transport

Sustainable water and wastewater management

 Medium to Light green

Water collection, storage, distribution, treatment, and supply

Centralized wastewater treatment

Climate change adaptation

 Medium green

Climate-resilient infrastructure upgrades

Circular economy-adapted products, production technologies and processes, and/or certified eco-efficient products

 Light green

Manufacture of cement

Manufacture of aluminum

Manufacture of iron and steel and ferroalloys

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Manufacture of other inorganic base chemicals

Manufacture of other organic base chemicals

Manufacture of fertilizers and nitrogen compounds

Manufacture of plastics in primary form

Green buildings

 **Light green**

Construction of new buildings (top-level)

Construction of new buildings (mid-level)

Construction of new buildings (entry-level)

Building renovation and major refurbishment (top-level)

Building renovation and major refurbishment (mid-level)

Building renovation and major refurbishment (entry-level)

Individual measures and professional services

Acquisition and ownership

See [Analysis Of Eligible Projects](#) for more detail.

Issuer Sustainability Context

This section provides an analysis of the issuer's sustainability management and the embeddedness of the financing framework within its overall strategy.

Issuer Description

The Republic of South Africa has an estimated land area of 1,220,813 square kilometers, with a population of 63.02 million. The World Bank classifies it as an upper-middle income country, with per capita GDP reaching \$6,253.4 in 2024, and average annual growth of about 0.7% over a 10-year period.

South Africa's economy shows relative diversification across sectors. Industry accounts for 27.5% of gross value added (GVA) with 18.1% of employment, whereas the services sector represents the largest share, contributing 69.4% of GVA and employing around two thirds of the population, according to U.N. data. Agriculture accounts for 3.2% of GVA and employs approximately 19.3% of the workforce. Commodities form a large part of exports, including gold, platinum group metals, iron ore, and coal, as well as automotive and agriculture products.

South Africa's unemployment rate stood at a high 32.9% for the first quarter of 2025, with youth unemployment at 46% and an estimated 63% of the population living below the upper-middle-income country poverty line in 2024, according to World Bank figures.

Material Sustainability Factors

Climate transition risk

Although broad support for the 2015 Paris Agreement on climate change lays a foundation for global action, current climate pledges fall well short of what's needed to reach net zero by 2050. The lack of supporting policies increases the challenge, making it unlikely that temperature increases can be contained to less than 1.5 degrees Celsius (1.5 C) above preindustrial levels. Current commitments would see global emissions remain at about 60 gigatons of carbon dioxide equivalent (CO₂e) annually, putting the world on track for over 3 C of warming by the year 2100.

Governments can spur action through regulations, incentives, and price signals--such as carbon taxes, subsidies, or penalties. Countries differ widely in their emissions profiles, shaped by economic development and fossil fuel use. Policymakers' willingness to act depends on factors like public support, international pressure, visible climate impacts, economic costs, competitiveness, and perceptions of their country's global influence and exposure to climate risks.

South Africa submitted its updated Nationally Determined Contribution (NDC) in 2025, involving an aspiration to reduce greenhouse gas emissions to a range of between 320 million tons of CO₂e (MtCO₂e) and 380 MtCO₂e by 2035 and achieve net-zero carbon emissions by 2050. To enable these reductions, South Africa will focus on the following initiatives (including but not limited to): energy and associated grid infrastructure, green hydrogen, and electric mobility, as well as reskilling coal workers, and phasing out and remodeling existing coal plants, and decommissioning, repurposing, and repowering of coal plants into renewable energy hubs.

Physical climate risk

Physical climate risks can affect many economic activities and increasing (unabated) greenhouse gas emissions will drive more frequent and severe climate hazards, absent adaptation. However, although the physical impacts from climate change and extreme weather events will continue globally, the direct impacts of climate hazards--including (but not limited to) heatwaves, flooding, and wildfires--are typically localized. The indirect impacts associated with such events may manifest through different channels (such as the volume and pricing of traded goods and services), extending beyond administrative borders and cascading through multiple sectors.

South Africa is vulnerable to physical climate risks, with water and food insecurity, alongside natural disasters such as droughts, floods, and storms, which have led to social and economic losses and are anticipated to worsen under future climate conditions. According to the World Bank, South Africa faces rising temperature, which is projected to rise 2 C above preindustrial levels by the 2050s and by 4.2 C by the 2090s under a high emissions scenario, leading to more frequent and severe heat extremes. South Africa ranks No. 94 out of 187 countries on the 2023 Notre Dame Global Adaptation Initiative Index, representing the country's vulnerability to climate change and other global challenges associated with its readiness to improve resilience.

Other environmental factors

Governments play a key role in protecting biodiversity and containing land, air, and water pollution. Economic development goals can exert considerable pressure on natural ecosystems locally and for trading partners. Environmental factors are often intertwined, including with climate transition and physical climate risks.

South Africa is exposed to various environmental challenges, including areas of water, pollution, and biodiversity. The country lies within the drought belt and is the fifth most water-scarce country in sub-Saharan Africa. As droughts become more frequent and severe water supplies, biodiversity, and agriculture are likely to suffer. Air quality also remains an area of concern, since large parts of the population are exposed to pollutant levels above the World Health Organization's (WHO) guidelines. This continues to pose notable public health risks, with the country among the most affected in Africa in terms of health impacts linked to particulate matter (PM2.5).

Social factors

Governments play a key role in socioeconomic development. Depending on national and local circumstances, governments might prioritize economic advancement; poverty, hunger, or inequality reduction; essential services or infrastructure access; and/or clean water or sanitation or other social goals.

South Africa is classified as an upper-middle-income economy with a Human Development Index of 0.741 (2024), ranking No. 106 out of 193 countries. It faces significant challenges related to poverty, inequality with a consumption expenditure Gini coefficient (a measure of inequality in household spending) of 0.67 in 2018. Unemployment and human rights concerns further exacerbate these issues. Since its transition to a democracy in the 1990s, South Africa has made notable strides in improving living conditions for its population, particularly in terms of access to health care and education, which are recognized as fundamental human rights. The government has aimed to ensure that all citizens have access to these essential services. However, structural challenges persist, such as unequal quality of education, insufficient infrastructure, and limited access to services in rural and vulnerable communities. Moreover, unemployment remains a critical issue, with job creation not keeping pace with the growing working force.

Issuer And Context Analysis

Eligible project categories seek to address some of South Africa's most material sustainability issues. Expenditure included in the renewable energy, energy efficiency, clean transportation, climate change adaptation, and green buildings categories will aim to address climate transition risk. The issuer intends to finance various adaptation efforts to make infrastructure more resilient to physical climate risks. Furthermore, sustainable management of living natural resources and land use projects focus on promoting forestry and land rehabilitation. Activities in the pollution prevention, sustainable water, wastewater management, and circular economy categories will address material environmental factors such as water usage, waste, and pollution. Eligible activities listed as social projects will contribute to addressing access to essential services, affordable housing, and infrastructure; socioeconomic empowerment; as well as employment generation and food security. These projects align with South Africa's sustainable development goals and are part of the country's development strategies. We see risks associated with the projects' implementation that could result in adverse environmental and social impacts.

South Africa faces challenges related to high emissions in the energy sector. This is primarily driven by its dependence on coal, which accounted for nearly 69% of total energy supply in 2023, followed by oil at 21%, according to the International Energy Agency (IEA). The energy sector remains the dominant source of emissions, contributing approximately 78% of national

greenhouse gases in 2022, followed by agriculture (11%), industrial processes and product use (6.4%), and waste (4%). After ratifying the Paris Agreement in 2016, South Africa has progressively strengthened its NDCs, with its latest update released in October 2025. In this most recent version, South Africa pledges to reduce emissions to a range of 320 MtCO_{2e} -380 MtCO_{2e} by 2035. The Organization for Economic Co-operation and Development (OECD) Economic Survey 2025 highlights that the 2030 goal requires emissions reductions of 3.6%–19.7% from 2022 levels.

The absence of a clearly defined pathway to net-zero emissions by 2050 highlights uncertainty regarding the country's long-term transition strategy. The 2023 Integrated Resource Plan (IRP), the government's strategic framework for planning South Africa's energy supply, scales back renewable energy targets from the 2019 IRP, lowering projected solar PV and wind capacity and delaying coal-plant decommissioning. Additionally, South Africa's "Just Energy Transition Implementation Plan" aims to support the country's transition to a low-carbon, climate-resilient economy while addressing issues of poverty, inequality, and unemployment.

South Africa's energy infrastructure challenges remain a critical issue affecting economic growth and living standards. Despite a drop in load shedding from 289 days in 2023 to about 70 days in 2024, South Africa's electricity sector still faces supply constraints due to aging coal infrastructure, financial instability, and inefficient municipal distribution. Chronic shortages and slow renewable energy growth highlight the urgent need for reform and investment to ensure energy security and support a clean transition.

South Africa is highly vulnerable to the impacts of climate change, such as prolonged droughts, flooding, wildfires, and heatwaves, which are projected to intensify in frequency and severity. The adverse impacts are expected to affect vulnerable communities, undermining livelihoods and resilience. In response, South Africa has strengthened its policy framework for climate adaptation and resilience. The National Climate Change Adaptation Strategy (2019) provides a cross-sectoral framework, while the Climate Change Act (2024) mandates climate risk and vulnerability assessments and the publication of adaptation plans at the provincial and municipal levels, further institutionalizing local-level responses. Additionally, the 2025 NDC sets adaptation goals by 2035, focused on making water and sanitation systems, food security, ecosystems, human settlements, and infrastructure more resilient to floods, droughts, heat, and other climate hazards, with implementation supported by sectoral monitoring. Additional mechanisms such as the Disaster Management Act provide a framework for disaster risk reduction and Climate Change Response Fund (2024) support funding of adaptation, loss and damage, and mitigation efforts.

South Africa faces different environmental pressures beyond carbon emissions, including air pollution, water scarcity, and biodiversity loss. Air quality presents significant challenges in the country, with average PM_{2.5} concentrations reaching 18.75 micrograms per cubic meter (µg/m³), nearly four times higher than the WHO's guideline. This underscores the need for measures and policy intervention with references to the levels of pollutants. South Africa faces risks from land degradation, soil erosion, deforestation, and biodiversity loss, with the 2025 NDCs projecting that biodiversity loss will escalate with every 0.5 C increase above present-day global warming. To address these challenges, the country's policy framework sets national objectives for conservation and sustainable management. Water scarcity adds to these risks, since the country experiences variable rainfall and recurring droughts, with future warming expected to negatively affect food systems and agricultural livelihoods. Although the policy architecture provides a strong foundation, effective implementation of mitigation policies and stronger adaptation measures will be needed to address the environmental risks.

The framework's financing of projects linked to health care, education, employment, and food security will help tackle social challenges and strengthen South Africa's development path. The country faces pronounced social challenges, with inequality, persistent poverty, and elevated unemployment rates. Regional and rural inequalities persist, particularly in access to electricity, clean water, and other essential services including adequate housing, higher education, and quality health care. Access to basic water and sanitation has improved, with 88% of households having access to basic water services and over 83% access to basic sanitation services. However, air pollution constitutes a significant public health risk, responsible for over

42,000 deaths in 2023, and disproportionately affecting low-income communities near industrial zones. Compounding these socioeconomic risks are pressing human-rights challenges, including rising gender-based violence, xenophobic rhetoric, and food poverty affecting nearly one-quarter of all children. South Africa's National Development Plan 2030 provides the overarching policy framework to eliminate poverty and reduce inequality through inclusive growth, improved education, and expanded access to basic services. However, despite ongoing reforms, effective implementation and further structural measures will be essential to achieve durable reductions in poverty, inequality, and unemployment. Likewise, perceived levels of corruption in the country remain high. This could diminish the correct application of policies and regulations and limit the proper implementation of projects, thereby reducing their potential social and environmental benefits.

Alignment Assessment

This section provides an analysis of the framework's alignment to the Social and Green Bond/Loan principles and the Sustainability Bond Guidelines.

Alignment Summary

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

- ✓ Social Bond Principles, ICMA, 2025
- ✓ Social Loan Principles, LMA/LSTA/APLMA, 2025
- ✓ Green Bond Principles, ICMA, 2025
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✓ Use of proceeds

We assess all the framework's green project categories as having a green shade and consider all social project categories to be aligned with the principles. The issuer commits to allocating the net proceeds issued under the framework exclusively to eligible green and social projects. South Africa can issue green, social, and sustainability financing instruments, such as bonds and/or loans (including private placements). Please refer to the Analysis of Eligible Projects section for more information on our analysis of the environmental and social benefits of the expected use of proceeds.

✓ Process for project evaluation and selection

The South African government has outlined its procedure for project evaluation and selection within its sustainable financing framework. The Sustainable Finance Working Group (SFWG), chaired by the National Treasury and comprising representatives from relevant ministries and key departments, will be responsible for the evaluation and selection process. The country's ministries and departments nominate potential eligible projects, after which the National Treasury will conduct an initial screening. As part of this process, the National Treasury will check whether any material environmental and social risks are identified and assessed, and key mitigants are in place for any residual risk. This may require conducting environmental impact assessments or undertaking community consultations. The short-listed projects are then submitted to the SFWG for a detailed review. Along with the National Treasury, the SFWG further assesses and provides final approval. Approved projects are subsequently added to the eligible projects register maintained by the National Treasury. The framework excludes activities related to oil and gas exploration, production, or refining and/or storage of fossil fuels, deforestation, degradation of forests, nuclear power generation, gambling, weapons, and child or forced labor, among others.

✓ Management of proceeds

The issuer commits to tracking the net proceeds through the eligible projects register managed by the National Treasury. South Africa will manage the net proceeds from financing instruments on a per-issuance basis and states that allocations will be made on a notional basis. The issuer commits that the value of the eligible financing portfolio will match the value of outstanding instruments. In consultation with the nominating ministries, projects that no longer meet the eligibility criteria will be reallocated to eligible projects as soon as possible, on a best-effort basis. For any green loans falling under the scope of the framework, the issuer seeks to align with the 2025 update of the Green Loan Principles (GLP). With respect to the additional requirements of the GLP, if a green loan takes the form of one or more tranches of a loan facility, the issuer commits to labeling each tranche applicable to the eligible project(s) with an amount equivalent to the net proceeds of the green/social tranche(s), which will be tracked by National Treasury.

✓ Reporting

The government is committed to publishing annually both allocation and impact reports, until full allocation of the net proceeds or otherwise required by industry governing principles. Reporting will be available on the National Treasury’s website. Allocation reporting will include the allocated and unallocated proceeds, information on projects will be presented on an aggregated basis; and--where possible--granular details of the projects will be shared on a best-effort basis, as well as the breakdown of allocation of net proceeds by eligible category, and financing versus refinancing. Furthermore, the issuer commits to reporting annually on the impact of projects, encompassing each eligible green and social categories until full allocation. To the extent possible, the issuer seeks to align with the reporting practices in ICMA’s Harmonized Framework for Impact Reporting. Also, we view it as positive that the issuer commits to receiving and publishing an external assurance report on its allocation reporting.

Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the "[Analytical Approach: Shades Of Green Assessments](#)," as well as our analysis of eligible projects considered to have clear social benefits and to address or mitigate a key social issue.

Green project categories

Renewable energy

Assessment

 Medium green

Description

[7.2.5 Manufacture of hydrogen](#)

This activity complies with the lifecycle greenhouse gas (GHG) emissions savings requirement of 73.4% for hydrogen, resulting in 3 tons (t) of CO₂e per ton of hydrogen (H₂) and 70% for hydrogen-based synthetic fuels relative to a fossil fuel comparator of 94gCO₂e per milo-joule. Lifecycle GHG emissions savings are calculated using the methodology referred to in ISO 14067:2018 or ISO 14064-1:2018.

Quantified lifecycle GHG emission savings are verified by an independent third party.

Note: "Blue" hydrogen manufacturing for the refining of fossil fuels will be ineligible under this Framework.

[7.3.1 Production of electricity, heating, and cooling from solar PV, concentrated solar power, wind power, and ocean energy](#)

Construction and operation of electricity generation facilities that produce electricity, heating and cooling from solar PV, concentrated solar power (CSP), wind power, and ocean energy.

- For solar PV: The activity generates electricity using solar PV technology.
- For CSP: The activity generates electricity using CSP technology.
- For wind power: The activity generates electricity from wind power.
- For ocean energy: The activity generates electricity from ocean energy.

7.3.2 Production of electricity, heating, and cooling from hydropower

Construction and operation of electricity generation facilities that produce electricity, heating, and cooling from hydropower.

The activity complies with either of the following criteria:

- The electricity generation facility is a run-of-river plant and does not have an artificial reservoir
- The lifecycle GHG emissions from the generation of electricity from hydropower, including mixed-pumped hydropower storage connected to a free-flowing water source, are lower than 100gCO₂e per kilowatt hour (/kWh). The lifecycle GHG emissions are calculated using ISO 14067:2018 or ISO 14064-1:2018. Quantified lifecycle GHG emissions are verified by an independent third party.
- The power density of the electricity generation facility exceeds 5 W/m².

7.3.3 Production of electricity, heating, and cooling from geothermal sources

Construction and operation of electricity generation facilities that produce electricity, heating, and cooling from geothermal sources.

Any electricity, heating, and cooling generation technology or cogeneration technology can be deemed an eligible project if it can be demonstrated, using an ISO 14067 or a GHG Protocol Product Lifecycle Standard-compliant product carbon footprint (PCF) assessment, that the lifecycle impacts for producing 1 kWh of electricity are below the declining threshold.

A full PCF or GHG lifecycle assessment shall be applied, using project-specific data where relevant, and shall be subjected to review.

Declining threshold: Facilities operating at lifecycle emissions of 100gCO₂e/kWh or lower, declining to net-zero gCO₂e/kWh by 2050, are eligible.

- This threshold will be reduced every five years in line with South Africa's net-zero CO₂e in 2050-trajectory climate mitigation target.
- Assets and activities must meet the threshold at the point in time when eligibility approval is sought.

For activities that operate beyond 2050, it must be technically feasible to reach net-zero scope 1 emissions.

For a given investment or activity to be compatible with this trajectory, its average emissions over its physical lifetime, or 40 years (whichever is shorter), must be lower than the threshold.

7.3.4 Production of electricity, heating, and cooling from bioenergy

Construction and operation of electricity generation facilities that produce electricity, heating, and cooling from bioenergy (biomass, biogas, and biofuels).

Production of electricity, heating, and cooling from biofuels shall be assessed in relation to the relative fossil fuel comparator. Facilities operating above 80% of GHG emissions-reduction in relation to the relative fossil fuel comparator increasing to 100% by 2050, are eligible.

This threshold will be reduced every five years in line with South Africa's net zero CO₂e in 2050-trajectory climate mitigation target. Assets and activities must meet the threshold at the point in time when eligibility approval is sought.

For activities that go beyond 2050, it must be technically feasible to achieve net-zero emissions.

Anaerobic digestion of biowaste and sewage sludge are covered under separate activities within this framework. Any other anaerobic digestion of organic material, not covered under those activities, is eligible provided that:

- Methane leakage from relevant facilities (e.g. for biogas production and storage, energy generation, digestate storage) is controlled by a monitoring plan.
- The digestate produced is used as fertilizer/soil improver directly or after composting or any other treatment.

Food or feed crops are not used as bio-based feedstock for this activity.

7.3.5 Transmission and distribution of electricity

Construction and operation of transmission systems that transport the electricity on the extra high-voltage and high-voltage interconnected system.

Construction and operation of distribution systems that transport electricity on high-voltage, medium-voltage and low-voltage distribution systems.

Construction and operation of interconnections that transport electricity between separate systems.

All electricity transmission and distribution infrastructure or equipment in systems, which are on a trajectory to full decarbonization* are eligible, except for infrastructure that is dedicated to creating a direct connection, or expanding an existing direct connection between a power production plant that is more CO₂ intensive than 100gCO₂e/kWh, measured on a lifecycle emissions basis, and a substation or network.

*A system is deemed to be on a trajectory to full decarbonization if either:

- More than 67% of newly connected generation capacity in the system is below the generation threshold value of 100 gCO₂e/kWh measured on a PCF basis, over a rolling five-year period; or
- The average system grid emissions factor is below the threshold value of 100gCO₂e/kWh measured on a PCF basis, over a rolling five-year average period.

These criteria will be subject to regular review, in line with reviews of generation threshold values and progress to decarbonization.

The following transmission and distribution (T&D) grid-related activities are eligible, irrespective of whether the system is on a pathway to full decarbonization:

- Direct connection, or expansion of existing direct connection, of low carbon electricity generation below the threshold of 100 gCO₂e/kWh declining to 0gCO₂e/kWh in 2050, measured on a PCF basis, to a substation or network.

- EV charging stations and supporting electric infrastructure for the electrification of transport, subject to taxonomy eligibility under the transport section.
- Equipment and infrastructure where the main objective is an increase of the generation or use of renewable electricity generation.
- Equipment to increase the controllability and observability of the electricity system and enable the development and integration of renewable energy sources, this includes:
 - Sensors and measurement tools (including meteorological sensors for forecasting renewable production).
 - Communication and control (including advanced software and control rooms, automation of substations or feeders, and voltage control capabilities to adapt to more decentralized renewable infeed).
- Equipment to carry information to users for remotely acting on consumption.
- Equipment to allow for exchange of renewable electricity between users.
- Interconnectors between transmission systems are eligible, provided that one of the systems is eligible.

7.3.9 Transmission and distribution networks for renewable and low-carbon gases

Repurposing of gas networks for the distribution of gaseous fuels through a system of mains.

Repurposing of gas networks for long-distance transport of renewable and low-carbon gases by pipelines.

Construction or operation of transmission and distribution pipelines dedicated to the transport of hydrogen or other low-carbon gases.

Low-carbon gases include biogas/biomethane and hydrogen produced from hydrogen that complies with the technical screening criteria for the manufacture of hydrogen.

- The activity consists of one of the following:
 - Construction or operation of new transmission and distribution networks dedicated to hydrogen or other low-carbon gases;
 - Conversion/repurposing of existing natural gas networks to 100% hydrogen; and
 - Retrofitting of gas transmission and distribution networks, where the main purpose is the integration of hydrogen and other low-carbon gases, including any gas transmission or distribution network activity, which enables the network to increase the blend of hydrogen or other low carbon gasses in the gas system.
- The activity includes leak detection and repair of existing gas pipelines and other network elements to reduce methane leakage.

Analytical considerations

- Renewable energy sources such as solar, wind, geothermal, and hydro are key elements in limiting global warming to well below 2 C. Still, these projects may cause land-use changes, adversely affect local biodiversity, and are exposed to physical risks. Manufacture of green hydrogen is important in the transition to a low-carbon future due to its low emissions and potential applications in otherwise difficult-to-decarbonize industrial processes and transportation. Bioenergy derived from sustainably produced feedstocks can provide a lower-emission alternative to fossil fuels, where electrification is not

possible. That said, risks and impacts depend on the type of feedstock; lifecycle emissions, including consideration of direct and indirect land-use changes, degrees of water stress, and levels of biodiversity threat. T&D projects are important for the transition of other sectors and the need for robust grids to support intermittent renewable energy.

- The importance of expanding the renewable energy capacity in Africa is highlighted by the fact that renewables such as wind and solar contribute only 2% of the country's energy supply. The country has very high potential for renewable energy-- especially solar and wind--due to its geographic and climatic conditions. The growth of renewable capacity will also help to ensure stable access to electricity. These investments also support South Africa's climate commitments under its NDCs. The government has informed us that large renewable energy projects are expected to be distributed to the grid and will exclude electrification of fossil fuel operations or other activities directly linked to fossil fuel.
- We see activities of all green shades in this category, for example some-- such as solar--are fully consistent with a low-carbon climate-resilient future, while the other (such as bioenergy) represents transitional steps. Therefore, given the broad scope of activities included in the category and without clarity of allocation of proceeds, we assign an overall Medium green shade to the project category.
- The manufacture of hydrogen is also important for the transition to a low-carbon future. Our understanding is that projects under this subcategory will mainly involve manufacture and storage of green hydrogen, which we view as a Dark green technology. Green hydrogen production relies on electrolysis, therefore water consumption needs to be carefully managed, while other environmental risks include potential end uses that are polluting and impacts of leaked hydrogen on the atmosphere. Because it is a nascent technology, such risks are not yet fully understood. The government has confirmed that leak detection is covered by relevant regulation. It has also informed us that this subcategory may include the manufacture of blue hydrogen, which in our view is a necessary activity in the transition to a low-carbon society. Provided that blue hydrogen is not used for fossil fuel refining, we consider it Light green due to the dependence on a fossil fuel value chain and the risk of locking in the use of natural gas.
- We consider investments in solar, wind, geothermal, and hydropower projects, and eligible activities related to ocean renewable energy--such as offshore power generation from wave and tidal energy--to be Dark green, though recognizing that some risks may arise from their end-of-life treatment. Geothermal projects financed under the framework should operate with lifecycle emissions of 100gCO₂e/kWh or lower and decline over time to net-zero grams of CO₂e/kWh by 2050. These sources of electricity allow the country to diversify the electricity mix, produce distributed generation, and provide grid electricity.
- For hydropower projects, significant emissions can arise from construction and water reservoirs. However, this concern is somewhat mitigated by the requirement that hydropower assets have lifecycle greenhouse gas emissions lower than 100gCO₂e/kWh; a power density higher than 5W/m²; or be run-of-river without an artificial reservoir, in line with the South African Green Finance Taxonomy's (SA GFT's) substantial contribution criteria. In addition, the construction and operation of large hydropower plants are associated with more significant environmental impacts, including on biodiversity, such as fish migration patterns, as well as alterations to river flows. Nevertheless, the government states that all projects will undergo an environmental impact assessment in line with national legislation.
- We view investments into bioenergy as Light green since associated risks are well managed. Bioenergy facilities eligible for financing must meet specific requirements of achieving greenhouse gas emissions savings of at least 80% compared with the relevant fossil fuel benchmarks. The government has also confirmed that feedstock such as food or feed crops is not eligible for bioenergy production. Direct and indirect land-use-change risks are managed via the national legislation framework. The combination of these factors provides enough safeguards to assign a Light green shade to this subcategory.
- Reliable and efficient electricity T&D networks are relevant to South Africa's electrification and decarbonization ambitions. Investments in T&D networks that facilitate the integration of renewable energy sources, such as solar, wind, hydro, and geothermal, are critical in reducing the emissions intensity of the country's grid. This subcategory includes a range of activities with shades ranging from Dark green to Light green, resulting in the overall Medium green shade. The grid's emissions intensity was 713gCO₂e/kWh in 2024 due to high reliance on coal. The country is planning to increase the share of generation from renewables to 33% of generation by 2030, which is supposed to lower the grid intensity over time. We view this kind of newly connected generation capacity with an emissions threshold below 100gCO₂e/kWh as Dark green and investments in the grid with higher grid intensity as Light green.
- The subcategory T&D networks for renewable and low-carbon gases receives a Light green shade because of the importance of having T&D networks that can enable the use of renewable and low-carbon gases by 2050. The infrastructure is currently fossil fuel based and remains exposed to significant transition risk until it distributes such gases. Such investments seek to reduce the transition risk to which networks distributing natural gas are exposed. Nonetheless, these investments remain

exposed to significant transition risk until they distribute renewable or low-carbon gases, such as natural gas or hydrogen produced from natural gas. Although renewable and low-carbon gases are seen as crucial for the future, there are risks and uncertainty relating to their increased production and use, and therefore their distribution. The criteria for this activity includes investments into methane leak detection and repair of existing gas pipelines and other network elements to reduce methane leakage.

- The South African government commits to screening environmental risks in renewable energy projects through environmental and social impact assessments (ESIAs), in line with the National Environmental Management Act, to evaluate and mitigate adverse effects. Regarding physical climate risks, South Africa has developed a Climate Risk And Vulnerability Framework that provides a standardized approach for assessing climate risks and vulnerabilities, enabling better climate change adaptation planning and implementation. However, the implication of this framework is not yet compulsory. Additionally, if a project is in scope of the Climate Change Act, it will need to, or will have had to, conduct a physical risk assessment. These types of environmental assessments will be applied for all green categories under the sustainable finance framework.

Energy efficiency

Assessment

 Medium green

Description

7.2.1 Manufacture of low-carbon and resource efficiency technologies

- Manufacture of products, key components, and machinery that are essential for eligible renewable energy technologies (geothermal power, hydropower, CSP, solar PV, solar thermal energy for district heat production, wind energy, ocean energy, bioenergy technologies that meet the conversion efficiency requirements, green hydrogen, and hydrogen electrolysis installation).
- Manufacture of low-carbon transport vehicles and their respective key components, fleets, and vessels meeting the following criteria:

Passenger cars and light commercial vehicles, category M1 and N1:

- Until Dec. 31, 2025: vehicles with tailpipe emission intensity of maximum 50 gCO₂/km using the worldwide harmonized light-duty vehicles test procedure (WLTP). This includes zero-tailpipe emission vehicles (e.g. electric, hydrogen).
- From Jan. 1, 2026, onward: only vehicles with emission intensity of 0gCO₂/km (WLTP).

For category L vehicles:

- Zero-tailpipe emission vehicles (incl. hydrogen, fuel cell, electric).

Heavy duty vehicles: N2 and N3:

- Zero direct emission heavy-duty vehicles that emit less than 1gCO₂/kWh (or 1gCO₂/km for certain N2 vehicles).
- Low-emission heavy-duty vehicles with specific direct CO₂ emissions of less than 50% of the reference CO₂ emissions of all vehicles in the same subgroup.

Rail fleets:

- Zero direct-emission trains

Urban, suburban, and interurban passenger land transport fleets:

- Zero direct-emission land transport fleets (e.g. light rail transit, metro, tram, trolleybus, bus, and rail)

Water transport

- Zero direct-emission waterborne vessels.
 - Until Dec. 31, 2025, hybrid vessels using at least 50% of zero direct (tailpipe) CO₂ emission fuel mass or plug-in power for their normal operation
1. Manufacture of the following products (with thresholds where appropriate) for energy-efficient equipment for buildings and their key components:
 - Installation of building management systems
 - High-efficiency windows with a U-value better than 0.7 watts per square meter Kelvin (W/m²K; U-value measures thermal transmittance; the lower the U value, the better the insulation)
 - High-efficiency doors (U-value better than 1.2 W/m²K)
 - Insulation products with low thermal conductivity (lambda lower or equal to 0.045 W/mK), external cladding with U-value of 0.5 W/m²K or lower and roofing systems with U-value of 0.3 W/m²K or lower
 - Hot-water fittings (e.g. taps, showers) that are rated in the top class of the Water Efficiency Labelling and Standards scheme
 - Household appliances (e.g. washing machines, dishwashers) rated in the top available class according to South African Energy Efficiency Labelling
 - High-efficiency lighting appliances rated in the highest class of the energy efficiency label (or higher classes) according to South African Energy Efficiency Labelling
 - Presence and daylight controls for lighting systems
 - Highly efficient space heating and domestic hot water systems rated in the highest class significantly populated in the energy efficiency label (or higher classes) according to South African Energy Efficiency Labelling
 - Highly efficient cooling and ventilation systems rated in the highest class significantly populated in the energy efficiency label or higher classes according to South African Energy Efficiency Labelling
 - Heat pumps compliant with the criteria for heat pumps in the energy section of the SA GFT
 - Façade and roofing elements with solar shading or solar control function, including those that support the growing of vegetation
 - Energy-efficient building automation and control systems for commercial buildings
 - Zoned thermostats and devices for the smart monitoring of the main electricity loads for residential buildings, and sensor equipment, e.g. motion control
 - Products for heat metering and thermostatic controls for individual homes connected to district heating systems, and individual flats connected to central heating systems serving a whole building.
 2. The manufacture of low-carbon technologies and their key components that result in substantial GHG emission reductions in other sectors of the economy (including private households) is eligible if these technologies and components demonstrate substantially higher net GHG emission reductions than the best performing alternative technology, product, or solution available on the market on the basis of a recognized or standardized cradle-to-cradle carbon footprint assessment (e.g. ISO 14067, 14040, Environmental Product Declaration or Product Environmental Footprint) validated by a third party.

7.3.6 Storage of electricity

Construction and operation of facilities that store electricity and return it at a later time in the form of electricity.

7.3.7 Storage of thermal energy

Construction and operation of facilities that store thermal energy and return it at a later time in the form of thermal energy or other energy vectors.

Currently all thermal energy storage is eligible under the sustainable finance framework including thermal energy storage or aquifer thermal energy storage, subject to regular review.

7.3.8 Storage of hydrogen

Construction and operation of facilities that store hydrogen and return it at a later time in the form of hydrogen or other energy vectors.

This activity comprises one of the following:

- Construction of hydrogen storage facilities.
- Conversion of existing underground gas storage facilities into storage facilities dedicated to hydrogen-storage.
- Operation of hydrogen storage facilities where the hydrogen stored in the facility meets the criteria for manufacture of hydrogen set out elsewhere in this sustainability finance framework.

7.3.10 District heating/cooling distribution

Construction and operation of pipelines and associated infrastructure for distribution of heating and cooling, ending at the substation or heat exchanger.

Construction and operation of pipelines and associated infrastructure for distributing heating and cooling is currently eligible if the system uses at least 50% renewable energy or 50% waste heat, or 75% cogenerated heat or 50% of a combination of such energy and heat.

The following activities are always eligible:

- Modifications to lower temperature regimes
- Advanced pilot systems (control and energy management systems, Internet of Things)

7.3.11 Installation and operation of electric heat pumps

Currently, installation and operation of electric heat pumps is eligible, if:

- The refrigerant threshold has a global warming potential (GWP) ≤ 675 ; and
- A minimum requirement is the implementation and adherence to a recognized environmental management system (ISO 14001 or equivalent).

7.6.2 Data-driven solutions for GHG emission reductions

Development and/or use of information and communication technology (ICT) solutions to collect, transmit, and store data and the modelling and use of ICT when these activities are

exclusively aimed at the provision of data and analytics for decision-making (by the public and private sectors) enabling GHG emission reductions.

Analytical considerations

- Activities that seek to improve energy efficiency are necessary to transition to a low-carbon economy in line with the Paris Agreement's 2050 objectives. This is because they allow for the reduction in overall energy consumption and decrease primary energy demand. According to the Intergovernmental Panel on Climate Change (IPCC), the breakdown of average mitigation investment flows and investment needs until 2030 shows that energy efficiency is one area that requires the most significant investments.
- Activities that qualify under this category vary in shade, for example Dark green for electricity storage, and Light green for hybrid solutions. Without clarity on allocation of proceeds, we assign an overall Medium green shade to the project category.
- Energy/electricity storage plays a key role in net-zero energy systems through providing flexibility and adaptability by balancing the intermittency of most renewable energy sources. South Africa is planning to use pumped hydropower storage that complies with the hydropower criteria from the renewable energy category. We assess the development of these projects for renewable energy as Dark green because these systems will improve intermittent supply from renewable sources and thereby increase the integration of renewables into electricity networks.
- We consider the country's investments in the installation of electric heat pumps to be Dark green because these measures will reduce energy consumption and subsequently emissions. The eligibility criteria for this subcategory are in line with the SA GFT's substantial contribution criteria, including a refrigerant threshold (GWP no higher than 675) and requirements related to equipment design (durable and recyclable) and adequate waste management.
- The subcategory, manufacture of low-carbon and resource efficiency technologies, is assessed as Medium green. Supporting the scaling up of enabling technologies--such as renewable energy technologies, low-carbon transportation, energy equipment, and other low-carbon solutions--is crucial for a low-carbon economy. The manufacturing of products, key components, and machinery for eligible renewable energy technologies plays a crucial role in supporting the extension of renewable energy technologies. The manufacture of products for energy-efficient equipment for buildings will contribute to the improvement of households and small industrial processes energy use. Additionally, we view as positive that the eligibility criteria state these technologies will need to be externally certified for their environmental footprint, which limits potential environmental risks.
- One of the subcategories focuses on investments into low-carbon transport vehicles and their key components. Zero tailpipe-emission vehicles and rolling stock have an important role in the decarbonization of transportation. However, their production entails climate and environmental risks and impacts. These include energy-intensive manufacturing processes, the mining of raw materials and metals (especially for batteries), and circularity. The use of biofuels and synthetic fuels in electric road and rail transport may also help reduce emissions, as long as climate and environmental risks such as feedstock sourcing, direct and indirect land-use changes, and the energy intensity of production are effectively mitigated. The government has also confirmed that production machinery or equipment using fossil fuels will not be eligible to receive allocations under the framework. Investments under this subcategory are assessed as Medium green because they include zero direct-emission transport, which we view as Medium green, but also hybrid transport (which we view as Light green) until the end of 2025.
- For district heating and cooling systems, South Africa aims to finance initiatives that incorporate at least 50% renewable energy, 50% waste heat, 75% cogenerated heat, or a combination of these sources in line with the SA GFT's requirements. These kinds of projects carry inherited risks linked to remaining sources of energy. We view positively that the activity applies specific thresholds for feedstock and assess it as Medium green.
- We assign a Light green shade to the subcategory data-driven solutions for GHG emission reductions, reflecting that the issuer aims to finance the manufacturing of technologies enabling GHG reductions using data-driven solutions. We note there is some uncertainty as to what types of production could be eligible and the associated benefits.

Pollution prevention and control

Assessment

 **Medium to Light green**

Description

7.3.12 production of heating/cooling using waste heat

This activity produces heating/cooling from waste heat.

7.4.3 Anaerobic digestion of sewage sludge

Treatment of sewage sludge in wastewater treatment plants or in other dedicated installation with the resulting production and utilization of biogas.

- A monitoring plan is in place for methane leakage at the facility.
- The produced biogas is used directly for the generation of electricity or heat, upgraded to biomethane for injection into the natural gas grid or used as vehicle fuel or feedstock in the chemicals industry.

7.4.4 Separate collection and transport of nonhazardous waste in source-segregated fractions

Separate collection and transport of nonhazardous waste is eligible provided that source-segregated waste (in single or comingled fractions) is separately collected with the aim of preparing it for reuse and/or recycling. No threshold applies.

7.4.5 Anaerobic digestion of bio-waste

Treatment of separately collected biowaste through anaerobic digestion in dedicated plants with the resulting production and utilization of biogas and digestate.

Anaerobic digestion of bio-waste is eligible provided that (cumulative):

- The biowaste is source segregated and collected separately;
- Methane leakage from relevant facilities (e.g. for biogas production and storage, energy generation, digestate storage) is controlled by a monitoring plan;
- The produced biogas is used directly for the generation of electricity and/or heat, or upgraded to biomethane for injection into the natural gas grid, or used as vehicle fuel (e.g. as bioCNG) or feedstock in the chemicals industry (e.g. for production of hydrogen and ammonia);
- The digestate produced is used as fertilizer/soil improver, directly or after composting or any other treatment; and
- In dedicated biowaste treatment plants, biowaste constitutes a major share of the input feedstock (at least 70%, measured in weight, as an annual average). Co-digestion is eligible only with a minor share (up to 30% of the input feedstock) of advanced bioenergy feedstock. If energy crop feedstock is used (with a minor share of up to 30%) it will comply with the National Environmental Management Act (No.107 of 1998) as amended, the National Environmental Management Air Quality (Act 39 of 2004), the National Environmental Management Waste Act (Act 59 of 2008), and the Gas Act (Act 48 of 2001).

7.4.6 Composting of bio-waste

Treatment of separately collected biowaste through composting (aerobic digestion) in dedicated facilities with the resulting production and utilization of compost.

Composting of biowaste is eligible provided that (cumulative):

- The biowaste is source segregated and collected separately;
- Anaerobic digestion is not a technically and economically viable alternative; or
- The compost produced is used as fertilizer/soil improver

No threshold applies.

7.4.7 Material recovery from nonhazardous waste

Sorting and processing of separately collected nonhazardous waste streams into secondary raw materials involving a mechanical transformation process.

Material recovery from separately collected nonhazardous waste is eligible provided that:

- It produces secondary raw materials suitable for substitution of virgin materials in production processes.
- At least 50%, in terms of weight, of the processed separately collected nonhazardous waste is converted into secondary raw materials.

7.4.8 Landfill gas capture and utilization

Landfill gas capture and utilization in permanently closed landfills using new (or supplementary) dedicated technical facilities and equipment installed during or after a landfill's closure.

Collection and utilization of landfill gas is eligible provided that (cumulative):

- The landfill has not been opened after the date of entry into force of the SA GFT;
- The landfill (or landfill cell) where the system is newly installed, or extended and/or retrofitted, is permanently closed and is not taking further waste;
- The produced landfill gas is used directly for the generation of electricity and/or heat, or upgraded to biomethane for injection into the natural gas grid, or used as vehicle fuel (e.g. as bioCNG) or as feedstock in the chemicals industry (e.g. for production of hydrogen and ammonia); and
- Methane emissions from the landfill and leakages from the landfill gas collection and utilization facilities are controlled by a monitoring plan.

No threshold applies.

7.4.9 Direct air capture of CO2

Because direct air capture is energy intensive, energy usage needs to be based on a low-emission energy source. As a result, the overall lifecycle emissions for scope 1 and 2 must be no more than 20% of the quantity of CO2 removed to realize an 80% reduction in emissions.

7.4.10 Capture of greenhouse gas emissions

Capture of greenhouse gas emissions is currently eligible provided that:

- It enables the economic activity to operate below its respective threshold; and
- It shows that the captured CO₂ will be offloaded to a SA GFT-eligible CO₂ transportation operation and permanent sequestration facility.

This criterion is subject to regular review.

7.4.11 Transport of CO₂

Transport of captured CO₂ by rail, ship, and pipeline.

Transport modalities that contribute to the transport of CO₂ to eligible permanent sequestration sites are eligible only if the asset operates below the leakage/tonne of CO₂ threshold.

Leakage/tonne of CO₂ transported from head(s) of the transport network to injection point(s) is less than 0.5%, and the CO₂ is delivered to a SA GFT-eligible permanent sequestration site or to other transport modalities that lead directly to an eligible permanent sequestration site.

Assets or activities that enable carbon capture and utilization (CCU) will render all the connected elements of an existing transport network ineligible.

Assets that increase the flexibility and management of an existing network, without expanding the network to include carbon capture and use activities is eligible.

This criterion is subject to regular review.

7.4.12 Permanent sequestration of captured CO₂

Operation of a permanent CO₂ storage facility is eligible if the facility complies with ISO 27914:2017 for geological storage of CO₂. These requirements are subject to periodical review.

Carbon Credits Markets

Enabling the scaling of the voluntary and compliance carbon credits markets through development, financing, acquisition, implementation, investment in and/or research and development (R&D) of projects that are otherwise eligible within this framework and that are developed under a methodology and standard that meet at least one of the following requirements:

- Accredited under the International Carbon Reduction and Offset Alliance;
- Accredited under The Integrity Council for the Voluntary Carbon Market;
- Accredited under the Carbon Offsetting and Reduction Scheme for International Aviation;
- Eligible as per section 19 of the South African Carbon Tax Act; eligible under the standards for mitigation outcomes that are agreed on by parties to cooperative approaches under Article 6, paragraph 2 of the Paris Agreement; eligible under the Sustainable Development Mechanism under Article 6, paragraph 4 of the Paris Agreement; or
- Eligible under other credible jurisdictional specific carbon pricing mechanisms.

Energy Attribute Markets

Enabling the scaling of the voluntary and compliance energy attribute markets through the development, financing, acquisition, implementation, investment in and/or R&D of projects

that are otherwise eligible within this framework, and that have been certified in terms of at least one of the following standards:

- The Renewable Energy Certificate South Africa (administered by zaRECs (Pty) Ltd);
- The International Renewable Energy Certificate Standard [I-REC Product Code for Electricity, I-REC(E)];
- The Tradable Instrument for Global Renewables Registry; the European Standard CEN-EN 16325, based on Renewable Energy Directive 2018/2001(EU); or
- Other credible country-specific energy-attribute-certification schemes.

Note: Where a project is being considered for a category in addition to carbon financing or energy-attribute certificates, double counting of allocation and impacts will be avoided.

Analytical considerations

- Waste management is an important pollution-prevention measure that can avoid harm to human health and local ecosystems. Recycling, if implemented properly, will reduce emissions and benefit energy and natural-resource use. According to Statistics South Africa, only about 10% of general waste is recycled. The majority of waste is sent to landfills or dumped illegally. South Africa's approach to reducing landfill waste focuses on developing a secondary resources economy by processing waste materials within a circular economy framework. Measures such as sorting and collection projects need to be implemented in combination with other key steps. The use of bioenergy and waste heat for energy production can contribute to the transition to a low-carbon, climate-resilient future. Sustainability benefits vary depending on the feedstock used and the management of value-chain risks, namely land-use change, biodiversity, and greenhouse gas emissions. Activities that qualify under this category vary in shade, resulting in an overall shade of Medium-to-Light green.
- Anaerobic digestion of waste can result in biogas for the generation of electricity or heat or upgraded to biomethane for injection into the natural gas grid or used as vehicle fuel or as feedstock in the chemicals industry. That said, risks and impacts depend on the type of feedstock; lifecycle emissions, including consideration of direct and indirect land-use changes; degrees of water stress; and levels of biodiversity threat. We view activities such as anaerobic digestion of sewage sludge and biowaste as Medium green. It is positive that, in both cases, the criteria notes a monitoring plan is in place for methane leakage at relevant facilities. We also view as beneficial the circular use of digestate (residue that is leftover after anaerobic digestion biogas production) as fertilizer, though it could pose risks such as local pollution if not applied carefully.
- We assess activities linked to waste collection, sorting, and recovery as Medium green. Such investments improve recycling rates and help recover raw materials. The eligibility criteria have specific thresholds such as at least 50% separately collected nonhazardous waste is converted into secondary raw materials, which we view as positive. However, due to the local context--such as the low penetration of clean transportation and a carbon-intensive grid--these activities will rely to some extent on fossil-fuel-powered equipment or transport.
- South Africa faces significant limitations in available landfill space, along with difficulties in managing and closing landfills in compliance with licensing requirements. Building and running new landfills are costly for local governments and often opposed by nearby communities. Once waste is sent to a landfill, the land loses its economic value and, without gas capture, produces methane. The capture of landfill gases can contribute to the reduction of methane emissions, though later combustion of the captured gas entails emissions. The framework limits such projects to those with decommissioned landfills after the date the SA GFT took effect, that is April 1, 2022, and with a monitoring plan for methane emissions from landfills and leakages from landfill gas collection and utilization facilities. We assign this project category a shade of Light green.
- Carbon capture, utilization, and storage (CCUS) is likely to play a critical role in the low-carbon, climate resilient future. CO₂ may be directly removed from the air or captured at power generation and/or industrial facilities. Captured CO₂ is then transported to long-term geological storage facilities, or it can be used as an input in other industrial processes. We view CCUS-related activities that can be financed under the framework--such as direct air capture of CO₂, capture of GHG emissions, transport of CO₂, and permanent sequestration of captured CO₂--as Medium green. All these activities have specific criteria in line with the SA GFT. One of the potential negative impacts of these activities is the risk of leaks during CO₂ transportation and storage. The eligibility criteria for transport of CO₂ has a cap of less than 0.5% leakage/tonne of CO₂ transported from the head(s) of the transport network to injection point(s). Additionally, the issuer has stated it will follow

applicable national regulations in regard to leakage monitoring and detection and other environmental risks. The issuer has also informed us that CCUS-related activities will be linked only to assets aligned with the objective of achieving net-zero carbon emissions by 2050 and have an exclusion for application in new coal and enhanced oil recovery. However, our assessment is limited due to lack of visibility into the specific projects financed under this subcategory.

- Companies aiming to achieve ambitious decarbonization goals may need to use technologies like carbon credits. These solutions are recognized by global stakeholders as playing a crucial role in decarbonizing the economy. However, they also come with technological, financial, policy, and stakeholder perception risks.
- Carbon credits are certificates that represent the reduction, avoidance, or removal of 1 metric ton of carbon by a specific activity. The credibility of underlying projects is crucial; potential issues can arise for carbon credits based on perceived benefits that can be difficult to substantiate or can simply lead to adverse effects elsewhere. We regard as Light green the financing of projects that would generate carbon credits under the selected schemes. Our view is constrained by the limited transparency provided on the type of projects involved. However, the methodologies and standards listed in the framework provide credible verification schemes. Crediting schemes also require that the creation of carbon credits be limited to reduction or removal projects that would not otherwise be economically viable without the additional source of revenue the credits provide. Moreover, the support of the voluntary market could also support the development of new technologies. It is important to note that the project category does not include acquisition or purchase of carbon credits for the purpose of carbon offsetting, which may struggle to demonstrate positive environmental impact.
- We consider projects linked to energy attribute markets to be Light green, given there are challenges related to the impact and additional environmental benefits. In assessing the environmental benefits of these strategies, we focus on two main aspects: whether the projects appear more likely to support additional renewable energy production, since these have a greater potential to reduce global emissions; and the full lifecycle of emissions associated with the power generated.

Environmentally sustainable management of living natural resources and land use

Assessment

 Dark to Medium green

Description

7.1.1 Forestry and land rehabilitation

Forestry and land rehabilitation includes the following activities, as defined further in the SA GFT: afforestation, reforestation, existing forest management, conservation forestry, rehabilitation, and restoration.

- Application of the Climate Bonds Initiative’s Forestry and Land Conservation & Restoration Criteria is demonstrated and disclosed at 10-year intervals through a forest management plan (or equivalent) that shall be reviewed by an independent third-party certifier and/or competent authorities.
- A verified GHG balance baseline is calculated for above-ground carbon pools, based on growth yield curves for species per m³/year/hectare (ha), carbon convertible. Calculating the GHG balance baseline requires knowledge of the area, as well as the species and number of trees (in case of afforestation and reforestation). Using the growth yield curves, information will be given on the annual increment in m³/year/ha, which can be used for the basis of the GHG balance. The methodology is consistent with the approach in the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines); it recommends recalculation of the amount of carbon sequestered, 1 ton of biomass representing approximately 0.5 ton of carbon. A further 1 ton of carbon equals 44/12 = 3.67 tons of CO₂.
- Above-ground carbon stocks shall increase above the carbon baseline over a period of not less than 20 years. Changes in carbon stocks should be disclosed based on growth yield curves in 10-year intervals through a forest management plan (or equivalent instrument) that shall be reviewed by an independent third-party certifier and/or competent authorities.

Analytical considerations

- Forests can contribute to carbon sequestration and support biodiversity habitats. The OECD's Economic Surveys for South Africa reports that in 2022, land use, land-use change, and forestry sector absorb about 9% of the country's net emissions, marking the largest sectoral decline. Due to climate and the long-standing impact of fires, natural forests cover only about 0.2% of South Africa's land area, while plantation forests occupy about 1.2% of the country's combined arable and grazing land. Forests provide ecosystem services, such as water regulation and soil stabilization, which improve climate resilience. Implementing sustainable forestry management practices, avoiding harmful land-use changes, and managing physical climate risks, including wildfires and pests, are key to achieving these benefits. We assess the overall category as Dark-to-Medium green, reflecting its strong features, such as a mandate to increase carbon stock, although the category's broad scope limits our visibility into the specific projects financed.
- Nature-based solutions such as reforestation, conservation forestry, rehabilitation, and restoration can provide climate cobenefits by increasing carbon storage in biomass and soils. The framework states the forest carbon sink shall increase and the changes in carbon stocks should be disclosed, which we view positively. In addition, the framework mandates the use of formal carbon-quantification methodologies consistent with the approach in the IPCC Guidelines, which supports transparent and reliable measurement and verification of mitigation outcomes.
- The government has confirmed that financed activities will not lead to direct land-use changes or conversion of habitats specifically sensitive to biodiversity loss or of high conservation value, such as grasslands and any high carbon stock area (e.g. peat lands and wetlands), and areas set aside for the restoration of such habitats in line with national legislation.
- The framework applies the Climate Bonds Initiative's (CBI) Forestry and Land Conservation & Restoration Criteria, which include mitigation and resilience components. Both components require demonstration of compliance via forest certifications such as from the Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC), or compliance with management plans and demonstration of forest or habitat maintenance or improvement over time. FSC certification is generally seen as the most robust global standard for forest management, while PEFC has important complementary properties such as greater scrutiny of supply chains. The requirements in these certifications provide important safeguards against harmful practices and promote more sustainable management measures beyond regulatory requirements. Nevertheless, concerns remain about the stringency and real benefits of forest certifications, both in relation to the requirements (most reasonably run companies are likely to qualify) and application (audits seldom lead to the suspension of certifications). The management plan based on the CBI criteria has requirements for a variety of environmental issues such as soil health, water and fire management, biodiversity management, forest protection, and others and is sufficient to mitigate risks relevant for the forest management activities.

Clean transportation

Assessment

 **Medium to Light green**

Description

7.5.1 Commuter-road, passenger rail, and freight rail transport

For commuter road:

The direct (tailpipe) CO2 emissions of vehicles are zero.

For passenger rail:

- The activity complies with one or both of the following criteria:
 - Trains and passenger coaches have zero direct (tailpipe) CO2 emissions.
 - Trains and passenger coaches have zero direct tailpipe CO2 emission when operated on a track with necessary infrastructure, and use a conventional engine where such infrastructure is not available (bimode).

For freight rail:

- The activity complies with one or both of the following criteria:
 - Trains and wagons have zero direct tailpipe CO2 emissions.

- Trains and wagons have zero direct tailpipe CO2 emission when operated on a track with necessary infrastructure and use a conventional engine where such infrastructure is not available (bimode).

Trains and wagons are not dedicated to the transport of fossil fuels.

7.5.2 Infrastructure for low-carbon transport

Infrastructure for personal mobility or cycling logistics

The infrastructure that is constructed and operated is dedicated to personal mobility or cycle logistics: pavements, bike lanes, and pedestrian zones, as well as electrical charging and hydrogen refueling installations for personal mobility devices.

Infrastructure for rail transport:

The activity complies with one of the following criteria:

- The infrastructure is either:
 - Electrified trackside infrastructure and associated subsystems: infrastructure, energy, onboard control command and signaling, and trackside control command and signaling subsystems.
 - New and existing trackside infrastructure and associated subsystems where there is a plan for electrification as regards line tracks and, to the extent necessary for electric train operations, as regards sidings, or where the infrastructure will be fit for use by zero tailpipe CO2 emission trains within 10 years from the beginning of the activity: infrastructure, energy, onboard control command and signaling, and trackside control command and signaling subsystems.
- The infrastructure and installations are dedicated to transshipping freight between the modes: terminal infrastructure and superstructures for loading, unloading, and transshipment of goods; or
- The infrastructure and installations are dedicated to the transfer of passengers from rail to rail or from other modes to rail.

The infrastructure is not dedicated to the transport or storage of fossil fuels.

Infrastructure enabling low-carbon road transport and public transport

- The activity complies with one of the following criteria:
 - The infrastructure is dedicated to the operation of vehicles with zero tailpipe CO2 emissions: electric charging points, electricity grid connection upgrades, hydrogen fueling stations, or electric road systems;
 - The infrastructure and installations are dedicated to transshipping freight between the modes: terminal infrastructure and superstructures for loading, unloading, and transshipment of goods; or
 - The infrastructure and installations are dedicated to urban and suburban public passenger transport, including associated signaling systems for metro, tram, and rail systems.
- The infrastructure is not dedicated to the transport or storage of fossil fuels.

Infrastructure enabling low-carbon water transport

- The activity complies with one of the following criteria:
 - The infrastructure is dedicated to the operation of vessels with zero direct (tailpipe) CO₂ emissions: electricity charging or hydrogen-based refueling;
 - The infrastructure is dedicated to the performance of the port's own operations with zero direct (tailpipe) CO₂ emissions; or
 - The infrastructure and installations are dedicated to transshipping freight between the modes: terminal infrastructure and superstructures for loading, unloading, and transshipment of goods.
- The infrastructure is not dedicated to the transport or storage of fossil fuels.

Low-carbon airport infrastructure

- The activity complies with one of the following criteria:
 - The infrastructure is dedicated to the operation of aircraft with zero tailpipe CO₂ emissions: electricity charging and hydrogen refueling;
 - The infrastructure is dedicated to the provision of fixed electrical ground power and preconditioned air to stationary aircrafts; or
 - The infrastructure is dedicated to the zero direct emissions performance of the airport's own operations: electric charging points, electricity grid connection upgrades, and hydrogen refueling stations.
- The infrastructure is not dedicated to the transport or storage of fossil fuels

7.5.3 Passenger cars, road commercial vehicles and road freight transport

For heavy-duty vehicles, eligible are:

- Zero direct emission heavy-duty vehicles.
- Low-emission heavy-duty vehicles with specific direct CO₂ emissions of less than 50% of the reference CO₂ emissions of all vehicles in the same sub-group.
- Dedicated vehicles solely using advanced biofuels or renewable liquid and gaseous transport fuels of non-biological origin, as well as low indirect land-use change risk biofuels.

Fleets of vehicles dedicated to transport fossil fuels or fossil fuels blended with alternative fuels are not eligible.

7.5.4 Inland passenger and freight water transport

- Zero direct emissions inland waterway vessels are eligible subject to review every five years.
- Dedicated vessels solely using biofuels or renewable liquid and gaseous transport fuels. In addition, for an investment in new vessels, only vessels with efficiency corresponding to direct emissions below 95g of CO₂ emissions per passenger kilometer (gCO₂e/pkm), (including biogenic CO₂) are eligible. Eligibility should be reviewed latest by 2025.
- Other inland waterway vessels are eligible if direct emissions are below 50gCO₂e/pkm or 92.6 g per passenger nautical mile. Eligibility should be reviewed in 2025.

- Vessels that are dedicated to the transport of fossil fuels or any blended fossil fuels are not eligible even if meeting the criteria above.

Analytical considerations

- Mitigating greenhouse gas emissions from transportation will be crucial to achieving global decarbonization goals, since the transport sector accounts for 23% of global energy-related greenhouse gas emissions, according to the IPCC. Fossil fuel-powered vehicles also create air pollution, such as nitrogen oxides and sulfur oxides. Electric and low-carbon vehicles are key to decarbonizing land transportation. However, their production entails climate and environmental risks and impacts, such as the mining of raw materials and metals (especially for batteries). The use of biofuels and synthetic fuels may also contribute to lower emissions if climate and environmental risks such as feedstock sourcing, direct and indirect land-use change, and energy intensity of production are effectively mitigated.
- According to the OECD's Economic Survey, transport contributes 11% of total emissions in South Africa, with road transport identified as the primary source of transport-related CO₂ emissions, contributing 91.2% of total transport GHG emissions. Public transport faces challenges related to accessibility, reliability, safety, and affordability. Additionally, urban sprawl increases pressure on the transport network, while rail continues to carry a low proportion of freight. Therefore, the country is implementing its Green Transport Strategy, which aims to cut greenhouse gas emissions and other environmental impacts from the transport sector by 5% by 2050.
- Eligible projects include lower-emission transport such as rail, road, and water and the related infrastructure needed to support them, across private, public, and freight transport. Our Medium to Light green assessment captures the climate benefits of lower-emission vehicles and related infrastructure, especially in a region where charging infrastructure remains limited. We believe these projects can support the decarbonization of the transportation sector, although we consider that they may carry certain lock-in risks.
- Eligible projects for commuter road transport include low-carbon vehicle purchases and leases, acquisition of low-carbon vehicle manufacturers, investment in vehicle manufacturing facilities, subsidies for low-carbon vehicles, loans granted and similar. Rail transport includes rolling stock with zero tailpipe emissions, but also bimode trains. These trains rely on conventional engines when necessary infrastructure is not available and therefore assessed as Light green.
- Road transport includes zero direct- and low-emission heavy-duty vehicles. The inclusion of low-emission vehicles may allow for the financing of fossil-fuel-based technologies, such as plug-in hybrids, which can emit significantly more under real-world conditions. Second, supporting technologies that are not fully zero emission may delay the broader shift to clean transport by creating long-lived infrastructure or fleets. The category also includes vehicles that use biofuel. The criteria states that feedstock should be of nonbiological origin and with low indirect land-use change risks. We view these projects as Light green.
- Eligible projects include inland passenger and freight water transport. These comprise either zero direct-emission vessels, vessels using biofuels or renewable liquid and gaseous transport fuels with direct emissions below 95gCO₂e/pkm, or other inland waterways vessels, which are eligible if direct emissions are lower than 50gCO₂e/pkm.
- The decarbonization of all modes of transport will require a significant expansion of low-carbon transport infrastructure. The category includes investments for infrastructure enabling low carbon road, water, rail, and airport infrastructure as well as personal mobility. The criteria are clear that infrastructure dedicated to transport or storage of fossil fuel is not eligible. The category includes the deployment of electric vehicles and the development of related infrastructure, such as charging stations. We view as positive that these projects directly support zero-emission mobility at the tailpipe, which aligns with climate mitigation goals. However, since South Africa's power grid shows emission intensity of 713gCO₂e/kWh due to a coal-heavy generation mix, the environmental benefits of electric vehicles are significantly reduced because emissions associated with electricity generation are high, limiting our shade to Medium green.

Sustainable water and wastewater management

Assessment

 **Medium to Light green**

Description

7.4.1 Water collection, storage, distribution, treatment, and supply

The front-to-end water collection, storage, distribution, treatment, and supply system is eligible provided that its performance in terms of energy consumption per cubic meter of final water supply is high or substantially improved.

Eligibility is demonstrated by adherence to one of two optional thresholds:

- Option 1: The front-to-end water supply, storage, and distribution system has a high degree of energy efficiency characterized by average energy consumption of the system (including abstraction, treatment, and distribution) of 0.5 kWh per cubic meter billed/unbilled authorized water supply or less.
- Option 2: The energy efficiency of the front-to-end water supply storage and distribution system is increased substantially by decreasing the average energy consumption of the system by at least 20% (including abstraction, treatment, and distribution; measured in kWh per cubic meter billed/unbilled authorized water supply).

or

- By closing the gap between the actual leakage of the water supply storage and distribution network and a given target value of low leakage by at least 20%.

The unit of measurement is the Infrastructure Leakage Index (ILI), and the target value of low leakage is an ILI of 1.5.

7.4.2 Centralized wastewater treatment

Treatment of wastewater in centralized systems (including collection and wastewater treatment plants), substituting treatment systems causing high GHG emissions (e.g. onsite sanitation, anaerobic lagoons).

Construction or extension of centralized wastewater systems including collection (sewer network) and treatment is eligible, provided that:

- The new wastewater treatment replaces more GHG-emission-intensive wastewater treatment systems (such as pit latrines, septic tanks, or anaerobic lagoons).

No threshold applies.

Analytical considerations

- As a form of natural capital, water is necessary for economic activity, thriving ecosystems, and public health. Therefore, water supply systems are important to secure a future where all stakeholders have reliable access to sufficient water of adequate quality. That said, these systems are energy intensive and, if not sufficiently managed, can exacerbate water stress for other stakeholders and disrupt hydrology and aquatic ecosystems. South Africa’s freshwater supply system is already under pressure and is expected to face growing challenges due to climate change. Water shortages could severely affect both economic growth and the quality of life. Cape Town came close to running out of municipal water in 2019, and Johannesburg experienced frequent supply disruptions throughout 2024. Meanwhile, rising demand from a growing population and expanding industry is adding further strain to water resources. According to the national State of Water report, 98% of South Africa’s available water resources are already allocated, leaving limited potential to meet future demand through traditional surface water sources.
- We believe South Africa’s water and wastewater management projects have environmental benefits and comply with local regulatory requirements because the eligibility criteria are in line with the SA GFT. It is worth noting that, although we understand the jurisdictional constraints, we do not consider projects that rely on fossil fuel-powered equipment and

transport as fully aligned with a low-carbon, climate-resilient future. As a result, we classify these projects as Medium green to Light green.

- Eligible expenditure includes front-to-end water collection, storage, distribution, treatment, and supply systems, as well as centralized wastewater treatment systems. Water projects must meet energy efficiency thresholds, either by maintaining consumption at 0.5 kWh per cubic meter of supply or lower, or by demonstrating improvements of at least 20% in energy performance or leakage reduction, which we view positively.
- The government has informed us that eligible expenditure may include desalination plants. In addition, projects involving desalination activities follow relevant national legislation with regard to water-treatment-plant brine and other waste streams, and should primarily rely on renewable energy. We believe these safeguards help manage environmental impacts associated with desalination plants; therefore, we classify this project as Medium green.
- Wastewater projects focus on replacing more emission-intensive treatment methods, such as pit latrines, septic tanks, or anaerobic lagoons, with centralized collection and treatment facilities. Treated wastewater is generally reused to reduce reliance on raw water extraction, while sludge management must comply with national regulations, which also encourage beneficial use in agriculture, soil conditioning, and energy production. In addition, methane emissions from wastewater facilities are monitored under national legislation, with applicable guidelines promoting capture and safe disposal.
- ESIA's will be conducted for relevant projects, with material considerations including greenhouse gas emissions, sludge management, and impacts on local hydrology. In addition, the issuer commits to avoiding disposing of untreated waste from wastewater treatment in landfills, prioritizing nutrient recovery and the reuse of biosolids.

Climate change adaptation

Assessment

 **Medium green**

Description

Climate-resilient infrastructure upgrades

The activity contributes to maintaining or enhancing the climate resiliency of existing infrastructure, including the preparation for, response to, and recovery from the impacts of climate change or other climate-related disturbances, including for example:

- Improving water storage, distribution, and resource management
- Providing technical assistance, capacity building, and advisory services
- Upgrading roads and bridges with flood-resistant materials (without constructing new roads where a road previously did not exist)
- Providing finance for small-scale infrastructure or access to finance for larger projects

Analytical considerations

- Climate-change adaptation projects are essential for building resilience against climate-related risks and protecting vulnerable communities from adverse impacts such as extreme weather events and natural disasters. Climate scientists have indicated that some level of climate change is unavoidable, even under the most optimistic scenarios, making it important to plan for and mitigate these risks to enhance resilience and reduce environmental impacts. South Africa is highly exposed to physical climate risks such as droughts, extreme weather events, sea-level rise, and coastal erosion. Therefore, adaptation planning aims to strengthen resilience to such risks.
- Eligible investments under this category encompass a broad range of adaptation measures, including projects aimed at enhancing ecosystems' resilience to extreme weather events, like floods, as well as chronic changes. For example, the projects that could be financed under this category include use of early warning systems or wildfire control measures, use of regeneration material (species and ecotypes) less sensitive to strong wind, or timely management of seedling stand and timely thinning, as well as use of species and ecotypes less susceptible to drought or diversification of species and ecotypes.
- One of the activities under this category includes the upgrading of roads and bridges with flood-resistant materials, which enhance the country's ability to withstand climate risks such as floods and storms. The issuer has specified that

construction of new roads is not included in the category. Projects can promote long-term sustainability and connectivity but may also perpetuate fossil-fuel dependency, which limits our assessment of this category to Medium green.

- The government has confirmed that it does not, within this category, intend to invest in adaptation measures dedicated to any high-emitting assets, industrial facilities with heavy emissions, oil and gas extraction and refining infrastructure, or similar. As a result, we view this category as positive for supporting a low-carbon, climate-resilient future, especially given the exclusion of any investment linked to the fossil-fuel value chain. However, we also acknowledge that lack of clarity regarding the specific projects limits our visibility on the actual environmental impact and constrain our assessment to Medium green.

Circular economy adapted products, production technologies and processes, and/or certified eco-efficient products

Assessment

 Light green

Description

7.2.2 Manufacture of cement

This activity involves the manufacturing of one of the following:

- Grey cement clinker where the specific GHG emissions* are lower than 0.722 tCO₂e per tonne of grey cement clinker; or
- Cement or alternative hydraulic binder from grey clinker, where the specific GHG emissions from the clinker and cement or alternative binder production are lower than 0.469 tCO₂e per tonne of cement or alternative binder manufactured.

Where CO₂ emitted from the manufacturing process is captured, the CO₂ is transported and stored underground, in accordance with the technical screening criteria set out in the “Transport of CO₂” and “Permanent sequestration of captured CO₂” subcategories of this framework.

*The emissions boundary includes all processes directly or indirectly linked to the production of grey cement clinker.

7.2.3 Manufacture of aluminum

The activity involves the manufacturing of one of the following:

- Primary aluminum, where the economic activity complies with two of the following criteria until 2025 and with all of the following criteria after 2025:
 - GHG emissions do not exceed 1.484 tCO₂ per ton of aluminum manufactured.
 - The average carbon intensity for indirect GHG emissions* does not exceed 100gCO₂e/kWh.
 - The electricity consumption for the manufacturing process does not exceed 15.5 megawatt hour (MWh) per ton of aluminum manufactured.
- Secondary aluminum.

*Indirect greenhouse gas emissions are the lifecycle greenhouse gas emissions produced from the generation of the electricity used for the manufacturing of primary aluminum.

7.2.4 Manufacture of iron, steel, and ferroalloys

The activity involves the manufacturing of one of the following:

- Iron and steel with GHG emissions lower than the following values applied to the different manufacturing process steps:

- Hot metal = 1.331 tCO₂e/ton of product.
- Sintered ore = 0.163 tCO₂e/ton of product.
- Coke (excluding lignite coke) = 0.144 tCO₂e/ton of product.
- Iron casting = 0.299 tCO₂e/t product.
- Electric arc furnace (EAF) high alloy steel = 0.266 tCO₂e/t product.
- EAF carbon steel = 0.209 tCO₂e/t product.
- Steel in EAFs producing EAF carbon steel or EAF high alloy steel and where the steel scrap input relative to product output is not lower than:
 - 70% for the production of high alloy steel; or
 - 90% for the production of carbon steel.

Where CO₂ emitted from the manufacturing process is captured, the CO₂ is transported and stored underground, in accordance with the technical screening criteria set out in the “Transport of CO₂” and “Permanent sequestration of captured CO₂” subcategories of this framework.

7.2.6 Manufacture of other inorganic base chemicals

Manufacture of carbon black, disodium carbonate (soda ash) and chlorine.

For carbon black:

- GHG emissions from the carbon black production processes are lower than 1.141 tCO₂e per tonne of product.

For disodium carbonate:

- GHG emissions from the disodium carbonate production processes are lower than 0.789 tCO₂e per tonne of product.

For chlorine:

- Electricity consumption for electrolysis and chlorine treatment is equal to or lower than 2.45 MWh per tonne of chlorine.
- Average lifecycle GHG emissions of electricity used for chlorine production is 100gCO₂e/kWh or lower.
- Lifecycle GHG emissions are calculated using ISO 14067:2018 or ISO 14064-1:2018.
- Quantified lifecycle GHG emissions are verified by an independent third party.

7.2.7 Manufacture of other organic base chemicals

Manufacture of:

- High-volume chemicals (HVC): acetylene, ethylene, propylene, butadiene, hydrogen
- Aromatics: Mixed alkylbenzenes, mixed alkyl naphthalenes other than HS 2707 or 2902, cyclohexane, benzene, toluene, o-xylene, p-xylene, m-xylene and mixed xylene isomers, ethylbenzene, cumene, Biphenyl, terphenyls, vinyltoluenes, other cyclic hydrocarbons excluding cyclanes, cyclenes, cycloterpenes, benzene, toluene, xylenes, styrene, ethylbenzene, cumene, naphthalene, anthracene, Benzol (benzene), toluol (toluene) and xylol (xylenes), naphthalene and other aromatic hydrocarbon mixtures

(excluding benzole, toluole, xylole), vinyl chloride, styrene, ethylene oxide, monoethylene, glycol, adipic acid.

- Organic chemicals, which fall under the following: saturated acyclic monocarboxylic acids and their derivatives; unsaturated monocarboxylic, cyclanic, cyclenic or cycloterpenic acyclic polycarboxylic acids and their derivatives; aromatic polycarboxylic and carboxylic acids with additional oxygen functions and their derivatives, except salicylic acid and its salts.

GHG emissions from the organic basic chemicals production processes are lower than:

- For HVC: 0.693 tCO₂e/t of HVC; for aromatics: 0.0072 tCO₂e/t of aromatic.
- For vinyl chloride: 0.171 tCO₂e/t of vinyl chloride.
- For styrene: 0.419 tCO₂e/t of styrene.
- For ethylene oxide/ethylene glycols: 0.314 tCO₂e/t of ethylene oxide/glycol.
- For adipic acid: 0.32 tCO₂e/t of adipic acid.

Where the organic chemicals in scope are produced wholly or partially from renewable feedstock, the lifecycle GHG emissions of the manufactured chemical, manufactured wholly or partially from renewable feedstock, are lower than the lifecycle GHG emissions of the equivalent chemical manufactured from fossil fuel feedstock.

Lifecycle GHG emissions are calculated using ISO 14067:2018 or ISO 14064-1:2018.

Quantified lifecycle GHG emissions are verified by an independent third party.

Food or feed crops are not used as biobased feedstock for the manufacture of organic basic chemicals.

7.2.8 Manufacture of fertilizers and nitrogen compounds

Manufacture of anhydrous ammonia and nitric acid.

Ammonia is produced from hydrogen that complies with the technical screening criteria set out under the "Manufacture of hydrogen" subcategory of this framework.

GHG emissions from the manufacture of nitric acid are lower than 0.038 tCO₂e per tonne of nitric acid.

7.2.9 Manufacture of plastics in primary form

The plastic in primary form is one of the following:

- Fully manufactured by mechanical recycling of plastic waste.
- Fully manufactured by chemical recycling of plastic waste and the lifecycle GHG emissions of the manufactured plastic, excluding any calculated benefit from the production of fuels, are lower than the lifecycle GHG emissions of the equivalent primary plastic manufactured from fossil fuel feedstock.

Lifecycle GHG emissions are calculated using ISO 14067:2018 or ISO 14064-1:2018.

Quantified lifecycle GHG emissions are verified by an independent third party.

- Derived wholly or partially from renewable feedstock and its lifecycle GHG emissions are lower than the lifecycle GHG emissions of the equivalent plastics in primary form manufactured from fossil fuel feedstock.

Lifecycle GHG emissions are calculated using ISO 14067:2018 or ISO 14064-1:2018.

Quantified lifecycle GHG emissions are verified by an independent third party.

Food or feed crops are not used as biobased feedstock for the manufacture of plastic in primary form.

Analytical considerations

- Many industrial processes, including iron and steel production and aluminum, are not aligned with a low-carbon, climate-resilient future due to their high dependence on fossil fuels as an input. However, parts of these production processes can be decarbonized through electrification or alternative technologies that reduce reliance on fossil fuels or abate carbon emissions (via carbon capture). Lowering the carbon footprint of such industrial processes is important for the transition to a low-carbon economy.
- According to the OECD Economic Surveys for South Africa, industrial processes contributed 6.4% of the country's emissions in 2022, with ferroalloys (1.8%), iron and steel (1.3%), and cement (1%) being the main contributors. Additionally, manufacturing industries and construction accounted for 5.6% of emissions. This highlights the importance of proposed activities under this category in terms of improved energy efficiency and energy use for industrial processes.
- The overall project category receives a Light green shade given the large number of hard-to-abate sectors receiving financing. The issuer requires that financing of heavy manufacturing industries (hard-to-abate sectors) demonstrate compliance with the SA GFT's requirements, consistent with the EU Taxonomy, which lists eligible technologies and emissions thresholds. These thresholds are typically based on the 10% most efficient installations of each industrial process in the EU. The activities include the manufacture of cement, aluminum, iron, steel, organic basic materials, chlorine, anhydrous ammonia, hydrogen, and plastics (including plastic packaging). Due to the projects' estimated lifecycle emissions criteria, we believe these efforts support a low-carbon, climate-resilient future in the medium term. However, we know little about the end users of these inputs.
- The eligibility criteria in the framework require lower GHG emissions throughout the manufacturing process in comparison to the conventional methods. Manufacture of cement, for example, references 0.722 tCO₂e per tonne of grey cement clinker; and for aluminum not exceeding 1.484 tCO₂ per ton of aluminum manufactured. These thresholds will encourage producers to implement energy efficiency measures, and use low-carbon fuels and renewable energy. In addition, criteria for the manufacturing of steel refers to EAF technology, which is considered more energy efficient and environmentally friendly than traditional blast furnace/basic oxygen furnace steelmaking. It is more energy efficient because it uses scrap steel rather than raw iron ore. The eligibility criteria for cement, iron, and steel manufacture also mention the possibility of capturing emitted CO₂. However, it is worth mentioning that CCUS projects still face technological, cost, and storage limitations.
- Other projects that meet the relevant SA GFT criteria include manufacture of inorganic and organic base chemicals, fertilizers, and nitrogen compounds, and plastics in primary form. Similar to other activities, the framework sets emission intensity thresholds aligned with best available technologies. For example, low-carbon hydrogen is required to produce ammonia. For the manufacturing of plastic in its primary form, the issuer intends to use mechanical and chemical recycling. Mechanical recycling is generally considered to entail lower emissions and environmental risks than chemical recycling, but is not suitable for all plastics and produces output of lower quality (the output quality of the chemical recycling process resembles that of virgin plastics). The Taxonomy's criteria also specify that the feedstock for inorganic and organic base chemicals, and plastics, does not include food or feed crops. These initiatives support a low-carbon economy and align with our vision of a low-carbon, climate-resilient future, although they can still be exposed to some emissions lock-in risk.

Green buildings

Assessment

 Light green

Description

7.7.1 Construction of new buildings (top-level)

Construction of new buildings for which the ambition is to meet a net-zero or top-level definition:

1. Self-reported performance:

- a. Energy demand performance resulting from the construction of a building in kWh/m²/annum, is maximized, namely more than 40% lower than the energy used Intensity (EUI) stipulated in the latest version of SANS 10400-XA for the relevant occupancy class of the building, incorporating maximized energy demand management measures.
- b. Use of onsite (for site sizing) and offsite renewables is maximized to 100% renewable energy sourcing in total.
- c. No fossil-fuel-based back-up power is used where possible

If not independently certified as part of a recognized scheme (as below), full performance evidence to be provided with demonstration of internal performance management and reporting controls, signed by a delegated authority disclosed to investors and clients.

2. Alternately, the energy performance is certified for:
 - a. IFC EDGE Zero Carbon
or
 - b. GBCSA Net Zero (carbon Level 1, modelled), with substantive evidence that the requirements have been met, via:
 - o >40% EUI threshold and maximized peak energy demand management measures
 - o Maximized onsite and offsite renewables
 - o No fossil-fuel-based back-up poweror
 - c. GBCSA Green Star Level 5 or better new builds, with substantive evidence the 40% threshold has been met within the energy category
or
 - d. Other certification schemes that have been provided official recognition, confirmed and identified through the scheme(s)'s inclusion in these metrics and thresholds as an alternative approach in future SA GFT updates.
3. In either case 1 or 2, renewable energy generated onsite must be maximized in the first instance (including incorporation of storage), whereafter the purchase of offsite renewable energy is undertaken to make up 100% renewables supplied to the building. Offsite renewables may be sourced through a variety of approaches, including market instruments, provided the contributions from market instruments are fully traceable, independently verified, meet the Greenhouse Gas Protocol Scope 2 Quality Criteria, and details are disclosed to investors and clients.
4. For commercial buildings larger than 2,000 m², public buildings larger than 1,000 m², and other building types (considered in aggregate for developments) larger than 5,000 m², upon completion, the building resulting from the construction undergoes testing for air tightness, thermal integrity, and thermal management practices, and any deviation in the levels of performance set at the design stage or defects in the building envelope are disclosed to investors and clients.
5. For commercial buildings larger than 2,000 m², public buildings larger than 1,000 m² and other building types (considered in aggregate for developments) larger than 5,000 m², the life cycle GWP of the building resulting from the construction has been calculated for each stage in the life cycle, efforts to minimize this performance element is detailed, and the performance and efforts are disclosed to investors and clients.

6. Where credible regulatory and/or voluntary carbon offsets are applied beyond the measures listed above, these must be sourced from the South African national registry or credible international offset registries providing access to verified carbon credits under standards endorsed by the International Carbon Reduction and Offset Alliance. Details are to be disclosed to investors and clients.

7.7.1 Construction of new buildings (mid-level)

Construction of new buildings for which the ambition is to meet a mid-level, definition:

1. Self-reported performance: Energy demand resulting from the construction of a building in kWh/m²/annum, is a minimum of 40% lower than the EUI (energy used intensity) stipulated in the latest version of SANS 10400-XA for the relevant occupancy class of the building.

If not independently certified as part of a recognized scheme (as below), full performance evidence to be provided with demonstration of internal performance management and reporting controls, signed by a delegated authority, and disclosed to investors and clients.

2. Alternatively, the energy performance is certified for:

a. IFC EDGE Advanced (level 2), with substantive evidence that the following requirements have been met:

- o Maximized onsite and off-site renewables
- o No fossil-fuel-based back-up power

or

b. GBCSA Net Zero (carbon Level 1, modelled), with substantive evidence that the following requirements have been met:

- o >40% EUI threshold and maximized peak energy demand management measures
- o Maximized onsite and offsite renewables
- o No fossil-fuel-based back-up power

or

c. GBCSA Green Star level 5 or better new builds, with substantive evidence that the following requirements have been met:

- o The 40% threshold within the energy category
- o Maximized onsite and offsite renewables
- o No fossil-fuel-based back-up power where possible

or

d. Other certification schemes that have been provided official recognition, confirmed and identified through the scheme(s)'s inclusion in these metrics and thresholds as an alternative approach in future SA GFT updates.

3. In either case 1 or 2, onsite renewable energy generation should be maximized (for site sizing), with details disclosed to investors and clients.

4. Consideration of onsite storage feasibility must be made, and the rationale provided for the storage sizing selected (including if none). This is to be disclosed to investors and clients.

5. For commercial buildings larger than 2,000 m², public buildings larger than 1,000 m² and other building types (considered in aggregate for developments) larger than 5,000 m², upon completion, the building resulting from the construction undergoes testing for air tightness, thermal integrity, and thermal management practices, and any deviation in the levels of performance set at the design stage or defects in the building envelope are disclosed to investors and clients.

7.7.1 Construction of new buildings (entry level)

Constructions of new buildings for which the ambition is to meet entry-level definition:

1. Self-reported performance: energy demand resulting from the construction of a building in kWh/m²/annum, is a minimum of 20% lower than the EUI stipulated in the latest version of SANS 10400-XA for the relevant occupancy class of the building.

If not independently certified as part of a recognized scheme (as below), full performance evidence to be provided with demonstration of internal performance management and reporting controls, signed by a delegated authority, and disclosed to investors and clients.

2. Alternatively, the energy performance is certified for:

a. IFC EDGE Certified (level 1)

or

b. GBCSA Green-Star level 4 or better for new builds, with substantive evidence the 20% threshold has been met

or

c. Other certification schemes that have been provided official recognition, confirmed and identified through the scheme(s)'s inclusion in these metrics and thresholds as an alternative approach in future SA GFT updates.

Alternatively, and only applicable to residential buildings of any type, onsite renewable energy generation has been installed (asset finance not to be double counted). This includes, for low-income, and social housing, solar water heaters.

7.7.2 Building renovation and major refurbishment (top level)

Major renovations for buildings for which the ambition is to meet a net-zero or top-level definition:

1. Self-reported performance:

a. Energy demand improvement through energy efficiency and demand management measures resulting from the renovation of a building in kWh/m²/annum, is maximized for the relevant occupancy class of the building.

b. Renovation incorporates and maximizes (to 100% in total) use of onsite (for site sizing) and offsite renewables.

c. Renovation eliminates fossil-fuel-based back-up power.

If not independently certified as part of a recognized scheme (as below), full performance evidence to be provided with demonstration of internal performance management and reporting controls, signed by a delegated authority, and disclosed to investors and clients.

2. Alternatively, the energy performance is certified for:

- a. IFC EDGE Zero Carbon
 - or
- b. GBCSA Net Zero (carbon level 1, modelled), with substantive evidence that the following requirements have been met:
 - o Maximizing energy efficiency.
 - o Maximized onsite and offsite renewables.
 - o No fossil-fuel-based back-up power.
- or
- c. GBCSA Net Zero or GBCSA Green Star level 5 or better, with substantive evidence that the requirements have been met:
 - o Maximizing energy efficiency.
 - o Maximized onsite and offsite renewables.
 - o No fossil-fuel-based back-up power.
- or
- d. Other certification schemes that have been provided official recognition, confirmed and identified through the scheme(s)'s inclusion in these metrics and thresholds as an alternative approach in future SA GFT updates.

3. In either case, the renovation should incorporate renewable energy generation onsite, which must be maximized in the first instance (including incorporation of storage), whereafter the purchase of offsite renewable energy is undertaken to make up 100% of renewables supplied to the building. Offsite renewables may be sourced through a variety of approaches, including market instruments, provided the contributions from market instruments are fully traceable, independently verified, meet the Greenhouse Gas Protocol Scope 2 Quality Criteria and details are disclosed to investors and clients.

4. For commercial buildings larger than 2,000 m², public buildings larger than 1,000 m², and other building types (considered in aggregate for developments) larger than 5,000 m², upon completion of the renovation, the building undergoes testing for air tightness, thermal integrity, and thermal management practices, and results and performance implications are disclosed to investors and clients.

5. For commercial buildings larger than 2,000 m², public building, larger than 1,000 m² and other building types (considered in aggregate for developments) larger than 5,000 m², the life cycle GWP of the building (absolute and change due to the renovation, operational, and decommissioning phases) resulting from the renovation has been calculated, efforts to minimize this performance element (in particular for the renovation materials) are detailed, and the performance and efforts are disclosed to investors and clients.

6. Where credible regulatory and/or voluntary carbon offsets are applied beyond the measures listed above, these must be sourced from the South African national registry or credible international offset registries providing access to verified carbon credits under standards endorsed by the International Carbon Reduction and Offset Alliance. Details are to be disclosed to investors and clients.

7.7.2 Building renovation and major refurbishment (mid level)

Major renovations for buildings for which the ambition is to meet a mid-level definition:

1. Self-reported performance: energy demand resulting from the renovation of a building in kWh/m²/annum, the EUI is improved by 40% from the building baseline, and peak energy demand measures are introduced toward maximizing these.

If not independently certified as part of a recognized scheme (as below), full performance evidence is to be provided with demonstration of internal performance management and reporting controls, signed by a delegated authority, and disclosed to investors and clients.

2. Alternatively, the energy performance is certified for:

a. IFC EDGE Advanced (level 2)

or

b. GBCSA Net Zero (carbon Level 1, modelled) or Green Star Level 5 or better, with substantive evidence the 40% threshold from the building baseline requirement has been met, as well as improved peak-energy demand management measures

or

c. Other certification schemes that have been provided official recognition, confirmed and identified through the scheme(s)'s inclusion in these metrics and thresholds as an alternative approach in future SA GFT updates.

3. In either case 1 or 2, the renovation should incorporate maximized onsite renewable energy generation (for site sizing), with details disclosed to investors and clients.

4. Consideration of incorporation of onsite storage through the renovation must be made, and the rationale provided for the storage sizing selected (including if none). This is to be disclosed to investors and clients.

5. For buildings larger than 5,000 m², upon completion of the renovation, the building undergoes testing for air tightness, thermal integrity, and thermal management practices, and results and performance implications are disclosed to investors and clients.

7.7.2 Building renovation and major refurbishment (entry level)

Major renovations for buildings for which the ambition is to meet an entry-level definition:

1. Self-reported performance: energy demand resulting from the renovation of a building in kWh/m²/annum, the EUI is improved by 20% from the building baseline.

If not independently certified as part of a recognized scheme (as below), full performance evidence to be provided with demonstration of internal performance management and reporting controls, signed by a delegated authority, and disclosed to investors and clients.

2. Alternatively, the energy performance is certified for:

a. IFC EDGE Certified (level 1)

or

b. GBCSA Net Zero or GBCSA Green-Star level 4 or better, in either case, with substantive evidence the 20% threshold from the building baseline requirement has been met

or

c. Other certification schemes that have been provided official recognition, confirmed and identified through the scheme(s)'s inclusion in these metrics and thresholds as an alternative approach in future SA GFT updates.

3. Alternatively, and only applicable to residential buildings of any type, onsite renewable energy generation has been installed as part of the renovation (asset finance not to be double

counted). This includes, for low-income and social housing, the introduction of solar water heaters to structures.

7.7.3 Individual measures and professional services

There are no defined metrics across the individual measures and professional services. The following individual measures are eligible if compliant with minimum requirements set for individual components and systems in the applicable national regulations.

- a) Addition of insulation to the existing envelope components, such as external walls, roofs (including green roofs), lofts, basements, and ground floors (including measures to ensure air tightness, measures to reduce the effects of thermal bridges and scaffolding) and products for the application of insulation to the building envelope (mechanical fixings, adhesive).
- b) Replacement of existing windows with new energy efficient windows.
- c) Replacement of existing external doors with new energy-efficient doors.
- d) Installation and replacement of heating, ventilation, and air-conditioning and water heating systems, including equipment related to district heating and cooling services, with highly efficient technologies.
- e) Replacement of inefficient boilers or stoves with highly efficient condensing boilers.

The following individual measures are eligible if specific requirements are met:

- f) Replacement of old pumps with efficient circulating pumps.
- g) Installation of efficient LED lighting appliances and systems.
- h) Installation of low water and energy using kitchen and sanitary water fittings that comply with technical specifications set out in Appendix B: Technical Specification for Water Appliances within the SA GFT and, in case of shower solutions, mixer showers, shower outlets and taps, have a max water flow of 6 liters per minute or less, attested by an existing label in the market.

The following individual measures are eligible:

- i) Installation of zoned thermostats, smart thermostat systems, and sensor equipment e.g. motion and daylight control.
- j) Installation of building management systems and energy management systems.
- k) Installation of charging stations for electric vehicles.
- l) Installation of smart meters for gas, heating, cooling, and electricity.
- m) Installation of façade and roofing elements with solar shading, solar reflectivity, or solar control functions, including those that support the growing of vegetation.

The following individual measures are eligible if installed onsite as building services:

- n) Installation of solar PV systems (and the ancillary technical equipment).
- o) Installation of solar hot water panels (and the ancillary technical equipment).
- p) Installation, maintenance, repair, and upgrade of heat pumps contributing to the targets for renewable energy in heating and cooling.
- q) Installation of wind turbines (and the ancillary technical equipment).

- r) Installation of solar transpired collectors (and the ancillary technical equipment).
- s) Installation of thermal or electric energy storage units (and the ancillary technical equipment).
- t) Installation of high-efficiency micro combined heat and power plant.
- u) Installation of heat-exchanger/recovery systems.

The following professional services are eligible:

- v) Technical consultations (energy consultants, Green Star accredited professionals, EDGE experts, energy simulation, project management, production of energy performance certificates [EPC], dedicated training, etc.) linked to the individual measures mentioned above.
- w) Accredited energy audits and building performance assessments (EDGE auditors).
- x) Energy management services.
- y) Energy performance contracts.
- z) Energy services provided by energy service companies.

7.7.4 Acquisition and ownership

For buildings built before Dec. 31, 2020, the building has at least EPC class A.

Where the building is a large nonresidential building (with an effective rated output for heating systems, systems for combined space heating and ventilation, air-conditioning systems, or systems for combined air-conditioning and ventilation of over 290 kW), it is efficiently operated through energy performance monitoring and assessment.







Analytical considerations

- The IEA emphasizes that achieving net-zero emissions in buildings demands major energy efficiency strides and fossil fuel abandonment. All properties must achieve high energy performance. New properties should additionally cut emissions from building materials and construction. Additionally, addressing physical climate risks is crucial for strengthening climate resilience across all buildings.
- Today, South Africa's buildings and construction sector generates about 7% (34 MtCO_{2e}) of South Africa's direct emissions. Green buildings in South Africa are overseen by the Green Building Council of South Africa (GBCSA), established in 2007. It developed the Green Star SA rating tools to measure and promote environmental performance across various property sectors (e.g., office, retail, residential). The GBCSA also offers EDGE certification, developed by the International Finance Corp. (IFC), which supports resource-efficient design, helping to cut carbon emissions, conserve water, and reduce occupant costs.
- The framework sets out three levels of building eligibility in line with the criteria of the SA GFT, that is, the top level, which is equivalent to the net-zero level, as well as the mid and entry levels. Eligible projects under the framework include the construction of new buildings of three levels, building renovation, and major refurbishment of all three levels, individual measures, professional services, and acquisition and ownership.
- We assign a Light green shade to construction of new buildings, reflecting our view that the framework's eligibility criteria ensure financed buildings will be among the most efficient in the local building stock. The criteria indicate that all three levels should either show a significant improvement in energy efficiency in comparison to local regulation, i.e. 40% for top- and mid-level, and 20% for the entry level; or receive certification under internationally or locally recognized green building schemes such as IFC EDGE or GBCSA. We view this performance-based threshold favorably because it is aligned with international best practice and provides a robust alternative path to demonstrate climate benefits.
- We view IFC EDGE Zero Carbon/Certified (level 1)/advanced (level 2) as Light green because these certifications have clear thresholds for both energy use and embodied carbon relevant to the local context. However, it does not address physical

climate risks. Similarly, for buildings meeting GBCSA Net Zero, Carbon level 1, we view this as a solid ambition in terms of energy use, ensuring high energy efficiency and use of renewable energy, but with no consideration of physical climate risks or reduction of embodied emissions in the construction phase. The GBCSA Green-Star level 4 has no minimum requirements for energy use to achieve any level. We therefore view as positive that South Africa additionally demands substantive evidence the 20% threshold has been met, ensuring that the criteria support the financing of energy-efficient buildings, which is one of the factors leading to our Light green shade.

- We assign a Light green shade to the building renovation and major refurbishment subcategories for all three levels. Similarly, for new construction, the eligibility criteria imply either a significant improvement in energy efficiency in comparison to local norms or certification under internationally or locally recognized green building schemes such as IFC EDGE or GBCSA.
- Activities under the individual measures and professional services project subcategory seek to improve energy efficiency and are necessary to transition to a low-carbon economy in line with the Paris Agreement's 2050 objectives. This is because they allow for the reduction of overall energy consumption and primary energy demand. Installing devices to make buildings more efficient, in addition to those that help measure energy consumption, is environmentally beneficial because they help control and reduce overall energy consumption, as well as the real estate sector's carbon footprint. Some measures, such as installing LED lighting, may be considered to have a lower benefit and are assigned a Light green shade. At the same time, renewable energy sources are crucial to a low-carbon transition, and onsite generation will help South Africa reduce emissions related to real estate and are viewed as Dark green. Furthermore, financing the installation and maintenance of electric vehicle-charging infrastructure will support increased use of electric vehicles. These are expected to play an important role in the low-carbon, climate resilient future and are viewed as Medium green, as explained in the "clean transportation" category. Although boiler replacements can pose emissions lock-in risks if reliant on fossil fuels, the issuer has indicated that only heating solutions that use low-carbon technologies will be considered, which we consider a mitigating factor. To reflect the mix of environmental benefits from the underlying projects in this category, which range from Light green to Dark green, we assign a Light green shade overall.
- We view the "acquisition and ownership" subcategory as Light Green. In the transition to a low-carbon society, it is vital to renovate and improve existing properties. With this in mind, refurbishments achieving EPC class A show a solid ambition, and this is further strengthened by renovated buildings also needing a green building certification. The eligibility criteria specify that, in case of large nonresidential buildings, energy performance monitoring and assessment will be required. The mandatory display of EPCs for nonresidential buildings in South Africa takes effect from Dec. 7, 2025, as per the National Energy Act and SANS 10400-XA.
- New and existing properties are exposed to physical climate risks and greenfield developments may be associated with significant environmental risks. As is the case for all eligible projects under the framework, South Africa commits to assessing environmental risks through a dedicated environmental and social risk management process. ESIA's will be conducted for relevant projects to evaluate potential impacts related to pollution, biodiversity, and the local environment. However, we note that a dedicated compulsory assessment framework for physical climate risks, including exposure to heat stress, flooding, or water scarcity, has not yet been developed. In our view, the absence of a structured climate-risk screening process represents a shortcoming, particularly given the long asset lifespans associated with buildings.

S&P Global Ratings' Shades of Green

Assessments					
Dark green	Medium green	Light green	Yellow	Orange	Red
Description					
Activities that correspond to the long-term vision of an LCCR future.	Activities that represent significant steps toward an LCCR future but will require further improvements to be long-term LCCR solutions.	Activities representing transition steps in the near-term that avoid emissions lock-in but do not represent long-term LCCR solutions.	Activities that do not have a material impact on the transition to an LCCR future, or, Activities that have some potential inconsistency with the transition to an LCCR future, albeit tempered by existing transition measures.	Activities that are not currently consistent with the transition to an LCCR future. These include activities with moderate potential for emissions lock-in and risk of stranded assets.	Activities that are inconsistent with, and likely to impede, the transition required to achieve the long-term LCCR future. These activities have the highest emissions intensity, with the most potential for emissions lock-in and risk of stranded assets.
Example projects					
 Solar power plants	 Energy efficient buildings	 Hybrid road vehicles	 Health care services	 Conventional steel production	 New oil exploration

Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

LCCR--Low-carbon climate resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2 C), with efforts to limit it to 1.5 C, above pre-industrial levels, while building resilience to the adverse impact of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term--For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in--Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets--Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).

Social project categories

Access to essential services

Education

Basic education (early childhood development, primary and secondary schooling)

Expenditure related to projects, programs, and/or initiatives focused on providing access to basic education. Examples of eligible projects include (but are not limited to):

- Improving school infrastructure through the construction, maintenance, upgrading and rehabilitation of new and existing infrastructure.
- Initiatives that aim to eradicate mud schools and provide adequate infrastructure to schools that lack basic facilities such as the Accelerated Schools Infrastructure Delivery Initiative.
- Increasing the supply of quality teachers through initiatives like bursary awards for teacher education.
- Projects providing high-quality learner and teacher support materials to enhance teaching and learning.
- National school nutrition program to enable the provision of nutritious meals for school learners.
- Funding for programs improving the quality and reach of early childhood development services including subsidies and infrastructure support.

Social benefits: Access to quality basic education, which results in enhanced educational outcomes

Higher education and training

Expenditure related to projects, programs, and/or initiatives focused on providing access to higher education, vocational education, and/or skills-development training opportunities. Examples of eligible projects include (but are not limited to):

- Developing and upgrading infrastructure at higher education institutions: universities, technical and vocational education and training colleges, as well as community education and training colleges.
- Providing bursaries and loans to students from low-income households through programs like the National Student Financial Aid Scheme (NSFAS).
- Programs targeting skills development to support the just energy transition objective.
- Skills Development Zones (local learning networks) focusing on three core value chains: in Mpumalanga (renewable energy and transmission), in the Eastern Cape (NEVs), and in the Northern Cape (GH2).

Social benefits: Increased access to post-school education and vocational training, leading to improved employability of young people, and alignment of skills with the needs of the economy

Health care

Universal access to health care

Expenditure related to projects, programs, and/or initiatives focused on increasing universal access to health care through the construction, development, maintenance, investment in, improvement, and/or provision of health care infrastructure. Examples of eligible projects include (but are not limited to):

- Projects for upgrading and maintaining public hospital infrastructure, ensuring modern, well-equipped facilities in urban and rural areas.
- Projects aimed at establishing a universal health care system that ensures equitable access to quality health care services

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for all South Africans, irrespective of income level, via national health insurance.

- Expansion of primary health care clinics, that is, building new clinics and upgrading existing ones, particularly in rural and underserved areas, to improve access to primary health care services.

Health care services

Expenditure related to projects, programs, and/or initiatives focused on preventing diseases, promoting primary health care, and/or supporting tertiary health care services. Examples of eligible projects include (but are not limited to):

- Outreach services through the district health component.
- Funding for national campaigns and health programs aimed at reducing the incidence of HIV/AIDS and tuberculosis, with a focus on early diagnosis, treatment, and education.
- Projects aimed at improving maternal and child health through prenatal care, vaccination programs, and nutritional support.

Health care training and development

Expenditure related to projects, programs, and/or initiatives focused on investing in the training and/or development of health care professionals to ensure adequate health care workforce capacity. Examples of eligible projects include (but are not limited to):

- Investments in training programs for nurses, doctors, and health care professionals to expand the health care workforce, with a focus on addressing shortages in rural areas.
- Expanding programs that train and employ community health workers to provide basic health care and education in marginalized communities.
- Programs that support tertiary health care services through the national tertiary services grant.

Social benefits: Improved access, equity, efficiency, quality, and sustainability of health care, resulting in improved health outcomes and reduced health care inequalities

Analytical considerations

- Eligible projects for education aim to improve the conditions of schools and their infrastructure, provide scholarships and loans, support for teachers, meals for students, subsidies for early childhood development programs, and learning opportunities focused on inter alia "just energy" topics. We believe these projects will support the government's goal of improving both access and quality of education in the country. South Africa still faces challenges to improve infrastructure and the quality of education, which can help guarantee better outcomes for students, despite achieving some progress with broadening general access to education. According to data from the General Household Survey, grades 1 to 12 enrolment across the population aged 5 to 19 was 84% in 2022, which we consider a step toward achieving the goal of universal access.
- The framework defines the indicative target population for education projects in the category as learners and students accessing the public education system, and students from low-income households. The latest is described under the framework as learners from households earning less than South African rand (ZAR) 350,000 per year, eligible for financial aid through the NSFAS for tertiary education using the definition from the NSFAS. Additionally, all projects aim to benefit youth, defined as individuals falling within the age group 14 to 35 years old. The framework states that more populations may be added, in which case it will be disclosed in the transaction documentation.
- There have been controversies surrounding the NSFAS and its ability to fulfill its duties of providing funding support to students. We understand issues were caused by constraints on funding and problems within the implementation of the scheme, which caused delays in the payments of scholarships, affecting students, universities, and other stakeholders. Such issues may pose challenges to the effective implementation of projects funded under the framework. We note, however, that, the Ministry of Higher Education announced the establishment of a Post School and Education Training Reengineering Task Team in August 2025, with experts from the education sector to redesign the system and develop a sustainable funding

model that will mitigate these risks and provide stable support for students within the system. The government expects to have results on the restructuring early in 2026.

- The South African government is embarking on an ambitious plan to provide access to health care to its population. To do so, it is key to invest in and expand the system's infrastructure. We view as positive the government's efforts to continue to invest in critical HIV treatment and prevention programs who are run by public healthcare institutions.
- South Africa considers access to health care a basic human right and has made significant strides to provide services to the entire population. However, complexities persist, like disparity in the quality of care, underfinancing, and risks of preventable diseases. Eligible activities destined for health care projects aim to improve the infrastructure of public hospitals, expand primary health clinics, and to invest in programs or initiatives focused on the prevention of diseases, as well as training programs for nurses, doctors, and other health care professionals.
- For health care projects, the framework considers the indicative target population to be communities in rural and/or underserved areas, defined by the Department of Human Settlements as areas outside city or urban boundaries or peripheries where populations are spatially dispersed. Other target populations are in areas with limited access to basic services such as housing, health care, education, and food sources according to the definition from Statistics South Africa. Low-income communities, as defined by the government, are households earning less than ZAR3,500 per month and eligible for fully subsidized housing under programs such as the Integrated Residential Development Program. The target population may experience changes, and may also include the general population, which will be disclosed in the applicable post transaction reporting. This is applicable for all social categories under the framework.
- Eligible projects under the category aim to enhance access to health care and education services through public institutions. By ensuring that these populations have the necessary support, projects mitigate the risk of limited access caused by economic barriers. Furthermore, these projects adhere to established criteria that clearly outline eligibility requirements for beneficiaries and take affordability into account, including the geographic areas served and the availability of free services. This structured approach not only promotes inclusivity but also strengthens the overall impact of the projects on the target population.

Affordable housing

Access to affordable housing

Expenditure related to projects, programs, and/or initiatives focused on the construction, development, maintenance, investment in, and/or improvement of accessible affordable housing. Examples of eligible projects include (but are not limited to):

- Provision of funding for the building of affordable housing in urban and rural areas, focusing on low- and middle-income households.
- Provision of funding for the construction and development of affordable rental housing for low-income earners, particularly in well-located urban areas close to employment opportunities.
- Programs supporting underserved segments of the housing market by providing targeted finance-linked individual subsidies through the First Home Finance Program to qualifying households.

Social benefits: Increased access to decent and affordable housing, improved living conditions for low- and middle-income households, and enhanced urban inclusion through better housing options.

Upgrading of informal settlements

Expenditure related to projects, programs, and/or initiatives focused on providing households in informal areas with secure tenure and access to basic services such as water and sanitation, lighting, and/or refuse removal. Examples of eligible projects include (but are not limited to):

- Initiatives such as the Upgrading of Informal Settlements Program, which provides essential infrastructure in informal settlements, including clean water, sanitation, electricity, and housing.
- Initiatives that aim to improve infrastructure in urban settlements, particularly targeting municipalities to deliver services

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and upgrade housing in informal areas supported by the Urban Settlements Development Grant.

- Funds for the provision of project-level technical support to build capacity in provinces and municipalities toward developing comprehensive plans to upgrade informal settlements.

Social benefits: Enhanced living standards for informal settlement residents, reduced health risks, and greater access to basic services.

Integrated housing and infrastructure development

Expenditure related to projects, programs, and/or initiatives focused on promoting the development and delivery of spatially integrated human settlements. Examples of eligible projects include (but are not limited to):

- Facilitating the creation of integrated housing developments where housing, schools, clinics, and transport infrastructure are developed concurrently to create inclusive, sustainable communities through initiatives such as the Integrated Residential Development Program.
- Large-scale projects designed to create mixed-use, mixed-income developments that include affordable housing alongside commercial and social infrastructure.

Social benefits: Promotes socioeconomic diversity within urban areas, improves access to amenities, and fosters more inclusive and sustainable urban development.

Housing for vulnerable populations

Expenditure related to projects, programs, and/or initiatives focused on building and providing access to housing for vulnerable populations. Examples of eligible projects include (but are not limited to):

- Providing temporary housing for households displaced by disasters, evictions, or other emergencies such as the Emergency Housing Program.
- Community Residential Units program, which supports low-income households, offering safe and affordable rental housing solutions, particularly for those unable to access formal housing markets.

Social benefits: Safeguards vulnerable populations by providing access to secure housing, thus improving resilience, reducing poverty, and fostering community stability.

Analytical considerations

- Eligible projects under the framework aim to promote the building of affordable housing in urban and rural areas, provide essential infrastructure such as water, sanitation, and electricity to underserved areas, improve the infrastructure of informal settlements, and facilitate the creation of integrated housing developments. Additionally, the framework includes investments in existing programs to support the acquisition of affordable houses and access to affordable renting, as well as temporary housing for vulnerable populations.
- According to the Centre for Affordable Housing Finance, South Africa has a backlog of at least 2.2 million units, which mostly affects the affordable housing sector. This data shows the relevance of eligible projects and the country's commitment to addressing it by creating and investing in programs that address different stages of the issue, such as building, improving, and creating financing for prospective homeowners and lenders. Affordable housing is defined by relevant regulation to ensure affordability criteria are considered in the projects selected.
- The framework defines the indicative target population as low- and middle-income households and informal settlement residents, defined by the Department of Human Settlements as residents living in unplanned, unregulated housing environments lacking secure tenure, targeted under the Upgrading of Informal Settlements Programme for the provision of basic services and formal housing, according to the national housing code. Likewise, projects may also be destined for communities in rural and/or underserved areas, and vulnerable populations as defined by the Department of Human Settlements and Statistics South Africa.
- Eligible projects are regulated by various government entities, such as the Department of Human Settlements, which oversee the establishment of a national housing development process in collaboration with public and private entities to promote

housing in the country. Likewise, entities that participate in social housing projects must be accredited by the Social Housing Regulatory Authority. The regulatory framework defines eligibility and project criteria, such as interest rates, subsidy amounts, and technical criteria for housing, which help promote affordability for the target population and reduce potential social risks.

Basic infrastructure

Water and wastewater infrastructure

Expenditure related to projects, programs, and/or initiatives focused on the construction, development, maintenance, installation, investment in, and/or improvement of water-treatment facilities, pipelines, municipal water and sanitation infrastructure, and/or reservoirs aimed at conserving water resources and providing access to clean water, particularly in water-scarce regions. Examples of eligible projects include (but are not limited to):

- Targeted investments in water-treatment facilities, pipelines, and reservoirs to provide reliable and clean water, especially in water-scarce areas.
- Initiatives supporting municipal water and sanitation-infrastructure projects aimed at underserved communities such as the Municipal Infrastructure Grant.
- Construction of modern sanitation facilities in informal settlements, rural areas, and schools.
- Rehabilitation of outdated sewage systems to improve sanitation services and minimize environmental contamination.

Social benefits: Increased access to clean water and sanitation, reduction of waterborne diseases, reduced health risks related to inadequate sanitation, and improved public health, particularly in disadvantaged communities.

Affordable and sustainable energy

Expenditure related to projects, programs, and/or initiatives focused on electrification (including transmission and/or distribution), which aim to improve access to energy. Examples of eligible projects include (but are not limited to):

- Programs that focus on the electrification of underserved communities through renewable energy sources such as solar, wind, and mini-grid systems.
- Initiatives that focus on the installation of energy-efficient technologies and smart grids in low-income areas to reduce energy costs and improve access to reliable power.
- Off-grid energy solutions for rural areas, including solar home systems and community-based renewable energy projects.
- Projects aimed at electrifying rural areas and informal settlements using on-grid and off-grid solutions, with a strong focus on renewable energy, such as the Integrated National Electrification Program.

Social benefits: Increased access to affordable, clean energy; reduced reliance on fossil fuels; and improved living conditions, especially in rural and low-income urban areas.

Affordable public transport

Expenditure related to projects, programs, and/or initiatives focused on construction, development, maintenance, investment in, and/or modernization of public transportation infrastructure to improve accessibility. Examples of eligible projects include (but are not limited to):

- Initiatives that focus on the development and upgrade of public transport networks, including buses, rail, and rapid transit systems, aimed at increasing accessibility especially for low-income populations.
- Construction of cycling and pedestrian infrastructure to promote nonmotorized transport options.

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- Investments in modernizing South Africa's passenger rail services to improve safety, accessibility, and affordability.
- Supporting the expansion and enhancement of integrated public transport networks such as the bus rapid transit systems in major cities.
- Expenditure related to the improvement of access, reliability, and/or quality of urban and rural transportation infrastructure.

Examples of eligible projects include (but are not limited to):

- Development, extension, maintenance, and/or improvement of urban and rural roads and/or bridges

Social benefits: Increased integration of sustainable, affordable, reliable, and safe transport.

Digital infrastructure

Expenditure related to projects, programs, and/or initiatives focused on the rollout of broadband internet to underserved areas to enable digital transformation and inclusion. Examples of eligible projects include (but are not limited to):

- The construction, extension, maintenance, and/or improvement of telecommunications networks and related infrastructure to provide mobile coverage in underserved areas.
- Supporting the roll out of broadband internet into underserved areas through the South African Connect project.

Social benefits: Promoting socioeconomic development by reducing the digital divide and enabling digital inclusion.

Analytical considerations

- Eligible projects under the category aim to improve the infrastructure and accessibility of basic services such as water, energy transportation, and access to digital services. Reliable electricity supply supports industrial productivity and enhances the comfort and safety of households, while efficient transportation systems facilitate the movement of goods and people, reducing costs and time for businesses and consumers alike. In South Africa, approximately 60% of rural households lack access to electricity and over 40% of households connected to the grid are considered energy poor, spending more than 20% of their monthly income on electricity.
- Access to clean water and effective sewage systems is crucial for public health, preventing waterborne diseases and ensuring a healthy environment. Data from the General Household Survey from 2024 highlights the differences in access to services between urban and rural communities in the country. The survey reveals only 36.7% of rural populations have access to safe water sources.
- Digital services have become increasingly important, enabling access to information, education, and economic opportunities. As of 2023, 78.6% of South Africans have some form of access to the internet; however, this is mostly through mobile services. The government is looking to expand broadband access to the internet. Investing in these services is vital for fostering economic growth and development in communities. Projects under the category aim to improve digital services infrastructure.
- All projects under the category aim to benefit rural and/or underserved communities. Water and wastewater projects also consider residents of informal settlements as defined by the National Housing Code. Affordable energy projects will be destined for low-income households, and transportation projects include low-income households and urban commuters.
- Additionally, the South African government has programs in place to ensure affordability of services for vulnerable communities, providing free services and subsidies. Municipalities are key to promoting affordability of electricity through specific tariffs and the implementation of the national free basic services policies and the free basic electricity subsidy. Subsidies for vulnerable populations are also considered for transportation through the public transport operations grant. Likewise, the SA Connect Program aims to facilitate connectivity in schools, clinics, and rural communities.
- Social risks of affordability are considered under local regulations and program criteria. However, projects may introduce potential environmental risks, such as greenhouse gas emissions, air quality degradation, and damage to the ecosystem and biodiversity during the construction phase of energy, digital, and transportation infrastructure projects. Likewise, transportation projects may promote the use of fossil-fuel-powered vehicles, which may contribute to GHG emissions. All projects are screened through ESIA's in line with the national regulation to evaluate and mitigate adverse effects.

Socioeconomic advancement and empowerment

Social protection

Financing of programs for the eradication of poverty and provision of social protection, social welfare, and/or social development among the poor and/or vulnerable. Examples of eligible programs include (but are not limited to):

- Social cash transfers, including long-term social assistance grants, short-term cash transfers, and in-kind support for households in distress or with insufficient means.
- Social welfare services and income support, including care and support for the elderly, child services, support services for people with disabilities, social behavior change programs (including those relating to substance abuse), and psychosocial services, such as providing support for victims of gender-based violence and femicide.

Social benefits: Poverty reduction, reduced inequality, and social inclusion and cohesion that support more inclusive development outcomes.

An inclusive rural economy

Financing of programs and measures to promote and/or develop an integrated and inclusive rural economy to support socioeconomic growth. Examples of eligible programs include (but are not limited to):

- Implementation of the agri-parks model to create capacity in agro-processing and industrialization value chains for broad-based job creation and market access opportunities.
- Comprehensive agricultural support program grants to fund activities aimed at improving agricultural production.
- Social organizations, youth development, and economic upliftment programs.

Social benefits: Socioeconomic growth, poverty reduction, and general employment.

Analytical considerations

- Eligible projects under the framework aim to invest in programs to improve the economic conditions of vulnerable populations through social assistance grants and social welfare in the form of cash transfers and programs for the elderly, child services, people with disabilities, and support for victims of gender violence. Likewise, projects include financing programs to support rural communities through programs to create agri-parks and provide grants for improvements in agriculture.
- The framework considers children, people with disabilities, women, and youth in underserved or rural communities as the category's indicative target population. Additionally, the indicative target population includes adults over 60 that pass a means test as defined by the Department of Social Development, which helps government entities measure how much income a person has in order to be eligible to receive social grants from the government.
- Social welfare programs can promote social justice and economic stability by providing essential support to vulnerable populations. Eligible programs include social benefits in the form of cash transfers (social and short-term cash transfers), which could be delivered, for example, through the child support, old age pension, or disability grant. These types of programs can help protect the most vulnerable populations in a country with high levels of inequality and poverty. Data from Statistics South Africa indicates that an estimated 40% of the population (around 25 million people) in the country live in or below the poverty line, defined as the minimum income required for a household to meet basic needs, such as food and nonfood items.
- Cash-transfer programs offer direct financial assistance to vulnerable populations, helping them meet basic needs and empowering individuals to achieve self-sufficiency. However, effective implementation is crucial for these kinds of projects to ensure that beneficiaries receive support safely and responsibly. Delays in disbursement can lead to increased debt and financial instability, undermining the intended benefits of the programs.
- Projects include programs to promote the agri-park model in the country. This model includes farming, processing, and marketing within a particular area, contributing to a sustainable and efficient agricultural system. These projects help create

job opportunities as well as reduce food poverty through the integral collaboration of local farmers, agribusinesses, and local governments.

- According to the Agricultural Business Chamber of South Africa, by the end of 2024, approximately 924,000 people worked directly in agriculture and over 200,000 worked elsewhere in the agriculture value chain. Innovation is key to further developing small agricultural practices, enhancing productivity, and making them more resilient. This is particularly relevant to promote resilience to changing environmental conditions and extreme weather events. Additionally, supporting small agricultural practices fosters local economies, creates jobs, and promotes food sovereignty by empowering communities to produce their own food.
- Eligible projects may introduce potential environmental risks, such as greenhouse gas emissions among others, which could bring damaging consequences to the agriculture and communities. However, proper agricultural models based on local agriculture and sustainable practices involved in most agri-park models help reduce these risks.

Employment generation

Financing of programs to support and provide employment generation and/or alleviate unemployment from socioeconomic crises and/or climate-transition projects. Examples of eligible programs include (but are not limited to):

- Providing financial and technical assistance to young entrepreneurs and youth cooperatives
- Providing financial and technical assistance to SMMEs (small, medium, and micro enterprises)
- Employment and livelihood support-intervention programs
- Programs providing employment opportunities to people with disabilities
- Programs supporting workers and communities affected by the transition away from coal, thereby providing alternative livelihoods
- Programs supporting community-driven projects that offer people dependent on coal value changes to new economic opportunities

Social benefits: Reducing unemployment, poverty, and inequality through employment creation and enterprise development.

Analytical considerations

- The category includes projects aimed at supporting entrepreneurs and SMMEs, promoting employment, and helping communities transition from coal-related employment. These projects aim to promote economic growth in the country and reduce unemployment rates, one of the most pressing issues in the country. According to the quarterly labor force survey from Statistics South Africa, the unemployment rate for the first quarter of 2025 was 32.9%, one of the highest globally; in particular, 46% of the country's youth are unemployed.
- Projects aimed at providing financial support through loans and grants, and technical assistance for SMMEs, support both entrepreneurship and job generation. We consider this category to provide a social benefit by reducing the financing gap and contributing to the growth and development of SMMEs in the country. In its last annual report, the Small Enterprise Development and Finance Agency estimated that SMMEs account for 34% of South Africa's GDP and employ around 60% of the labor force.
- Projects in this category aim to benefit unemployed individuals, people with disabilities, women, youth, SMMEs, young entrepreneurs, and cooperatives. SMMEs are characterized based on the criteria outlined in Schedule 1 of the National Small Enterprise Act, 1996 (Act No. 102 of 1996). The criteria include thresholds associated with annual turnover and number of full-time paid employees per sector.
- As part of its "Just Energy Transition Implementation Plan," the government envisions a transition to cleaner energy sources while assuring employability and reducing risks to communities employed in fossil-fuel industries. The coal value chain supports about 120,000 direct jobs, being the main energy source in South Africa, especially in the Mpumalanga region--eMalahleni, Steve Tshwete, Msukaligwa, and Govan Mbeki--which may be most affected by the decarbonization of the industry. Eligible projects can help promote employability for coal workers.
- Risk associated with programs to support SMMEs, as well as funding and upskilling of jobs, revolve around over-indebtedness, which are mitigated through the program's criteria which could determine the size of loans as well as the

interest's rates. It is key that beneficiaries are aware of credit conditions. South Africa's programs have clear eligibility criteria and incorporate different financial and technical education programs that can help mitigate these risks.

Food security and sustainable food systems

Financing of programs relating to the access of safe, nutritious, and sufficient food that meets dietary needs and requirements, resilient agricultural practices, reduction of food loss and waste, and/or improved productivity of small-scale producers.

Examples of eligible programs include (but are not limited to):

- Initiatives to provide healthy and nutritious food services to vulnerable populations
- Programs focused on agricultural transformation to promote food security
- Programs promoting sustainable agriculture
- Programs to reduce malnutrition and infant mortality
- School meal programs to help prevent school dropout
- Programs that promote integrated rural development
- Programs focused on the development of farmers with a specific focus on small-scale producers

Social benefits: Support the provision of nutritious food to the poor and vulnerable.

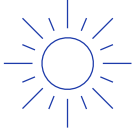


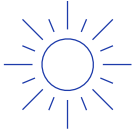






Analytical considerations

- Eligible projects under the category aim to fund programs to promote sustainable agriculture, other types of agricultural programs to promote better practices with local farms, as well as food services programs for children and vulnerable populations. These types of projects are key to enhancing food security. According to the latest census from 2022, 25.8% of the population in South Africa (approximately 15,3 million individuals) suffer from food insecurity, while 11.4% (approximately 6,8 million individuals) experience severe food insecurity. Children are particularly vulnerable, with almost 27.5% (approximately 1 760 000 children) under the age of five being subjected to food insecurity.
- The framework considers vulnerable populations, smallholder farmers, and communities in rural and underserved areas as the indicative target population. Still, as with other social categories, changes could be made to the definition of the target population, which will be disclosed in the transaction documentation. Vulnerable people are defined as the elderly, families headed by women and children, and people living with disabilities, according to Statistics South Africa. Smallholder farmers are those that own small plots of land on which they grow subsistence crops and one or two cash crops, as defined by the Department of Agriculture, Forestry, and Fisheries.
- Eligible projects are part of existing government programs and regulation such as the National Development Plan, which makes the eligibility criterion robust. Nevertheless, we note that some of these activities, across both agriculture and aquaculture, may introduce potential environmental risks, including deforestation, water pollution, soil degradation, overfishing, and greenhouse gas emissions, which could damage the agriculture industry and their communities, bringing unemployment, harsher weather conditions, and potential health issues. Similarly to green projects, the South African government commits to screening environmental risks in social projects through environmental and social impact assessments, in line with the National Environmental Management Act, to evaluate and mitigate adverse effects

Mapping To The U.N.'s Sustainable Development Goals

Where the financing documentation references the Sustainable Development Goals (SDGs), we consider which SDGs it contributes to. We compare the activities funded by the financing to the International Capital Markets Association (ICMA) SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not affect our alignment opinion.

This framework intends to contribute to the following SDGs:

Use of proceeds	SDGs		
Renewable energy			
	7. Affordable and clean energy*	11. Sustainable cities and communities*	13. Climate action
Energy efficiency			
	7. Affordable and clean energy*	11. Sustainable cities and communities	
Pollution prevention and control			
	11. Sustainable cities and communities*	12. Responsible consumption and production*	13. Climate action
Environmentally sustainable management of living natural resources and land use			
	12. Responsible consumption and production*	15. Life on land*	

Clean transportation



11. Sustainable cities and communities*

Sustainable water and wastewater management



6. Clean water and sanitation*



11. Sustainable cities and communities*

Climate change adaptation



13. Climate action*

Circular economy-adapted products, production technologies and processes, and/or certified eco-efficient products



11. Sustainable cities and communities*



12. Responsible consumption and production*

Green buildings



11. Sustainable cities and communities*

Access to essential services



1. No poverty*



2. Zero hunger*



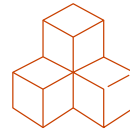
3. Good health and well-being*



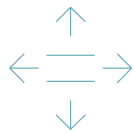
4. Quality education*



8. Decent work and economic growth*



9. Industry, innovation and infrastructure*



10. Reduced inequalities*

Affordable housing



1. No poverty*



11. Sustainable cities and communities*

Basic infrastructure



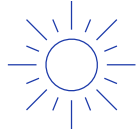
2. Zero hunger*



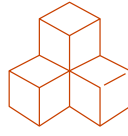
3. Good health and well-being*



6. Clean water and sanitation*



7. Affordable and clean energy*



9. Industry, innovation and infrastructure*



11. Sustainable cities and communities*

Socioeconomic advancement and empowerment



1. No poverty*



2. Zero hunger*



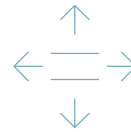
4. Quality education*



5. Gender equality*



8. Decent work and economic growth*



10. Reduced inequalities*



11. Sustainable cities and communities*



14. Life below water*



15. Life on land*

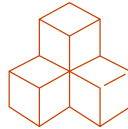


**16. Peace, justice
and strong
institutions***

Employment generation



**8. Decent work
and economic
growth***



**9. Industry,
innovation and
infrastructure***

Food security and sustainable food
systems



2. Zero hunger*



**12. Responsible
consumption and
production***

Related Research

- [Analytical Approach: Second Party Opinions](#), Mar. 6, 2025
- [FAQ: Applying Our Integrated Analytical Approach For Second Party Opinions](#), Mar. 6, 2025
- [Analytical Approach: Shades Of Green Assessments](#), Jul. 27, 2023
- [Analytical Approach: EU Taxonomy Assessment](#), Oct. 31, 2024
- [Analytical Approach: European Green Bond External Reviews](#), Oct. 31, 2024
- [FAQ: Applying Our Analytical Approach For European Green Bond External Reviews](#), Oct. 31, 2024

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Second Party Opinion: Republic of South Africa Use of Proceeds Sustainable Finance Framework

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