

GREEN BONDS IN SOUTH AFRICA

HOW GREEN BONDS CAN SUPPORT SOUTH AFRICA'S ENERGY TRANSITION



Climate Bonds INITIATIVE



1. Introduction: The role of green bonds in financing the transition

A global economy in transition

By mid-2021, countries representing more than 65% of global carbon dioxide emissions and more than 70% of the world economy, will have made ambitious commitments to carbon neutrality.

The European Union, Japan and the Republic of Korea, together with more than 110 other countries, have pledged carbon neutrality by 2050 while China aims to reach carbon neutrality by 2060¹.

The implications of this are enormous – investors all around the world are no longer questioning *if* a shift will happen but rather *how quickly* it will happen and how it will play out. Coal, in particular, is seen as a stranded asset with declining share prices of coal companies in the US and all around the world destroying significant shareholder value over the past year and leading some investors to rule out direct financing for coal.

But the implications are much further reaching than coal or even the fossil fuel sector – every entity in every sector needs to be aligned with zero carbon by 2050. The IEA's Net Zero² report outlines a pathway to net zero which requires no new investment in fossil fuels (including gas) and where the least efficient coal plants are phased out by 2030, the remaining coal plants still in use by 2040 are retrofitted. By 2050, almost 90% of electricity generation comes from renewable sources.

'Achieving net-zero emissions by 2050 will require nothing short of the complete transformation of the global energy system'. - IEA

In Europe, the implications of the EU Taxonomy are already becoming clearer. In particular, bank finance for projects like gas which was previously touted as a transition fuel but increasingly viewed as high-emissions due to methane leakage, is hotly debated. It is not a stretch to imagine how this will play out – green projects will find it easier to attract capital and possibly receive a pricing benefit while brown projects will find it hard to attract finance.

Some commentators are describing the favourable conditions for green finance and products as a **green window** where green products receive preferential treatment – in financing, export rules etc.

For South Africa, this is a risk. The carbon intensity of South African exports is the highest in the world and, with the continuing high proportion of electricity from coal, has not changed significantly over the past 10 years.³ Proposed and existing international carbon pricing, including carbon border adjustment mechanisms, is likely to expand, making South African exports vulnerable. One example, is the EU's Carbon Border Adjustment Mechanism for selected sectors which is likely to be implemented in the next few years⁴

At the same time, South Africa has a huge opportunity - to be the first coal-based economy in the global south to make a successful transition to a low carbon economy, particularly in the energy sector. With its aging fleet of coal-fired power stations (almost all of which must be decommissioned over the next 20 years), South Africa has no choice: it must build more energy generation capacity both to offset coal closures and to meet the growing demand for energy. Further, while it has yet to make a commitment, South Africa's Low Emission Development Strategy outlines an *aspiration* to reduce greenhouse gas emissions to net zero by 2050.^{5,6}

Green bonds are part of the solution to the financing challenge of this transition. They are not by themselves a magic wand but global experience to date has shown they are a vital tool in harnessing the increasing investor appetite for investments with green and social impacts.

This report outlines the importance and potential for green bonds in South Africa. It provides an overview of the global and South African green bond markets and insights into the use of green and transition bonds to finance a credible transition for South Africa.

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About the Climate Bonds Initiative

The Climate Bonds Initiative (Climate Bonds) is an international investor-focused not-for-profit organisation working to mobilise the USD100tn bond market for climate change solutions. It promotes investment in projects and assets needed for a rapid transition to a low carbon, climate resilient, and fair economy. The mission focus is to help drive down the cost of capital for large-scale climate and infrastructure projects and to support governments seeking increased capital markets investment to meet climate and greenhouse gas (GHG) emission reduction goals.

Climate Bonds conducts market analysis, policy research, and market development; advises governments and regulators; and administers a global green bond standard and certification scheme. Climate Bonds screens green finance instruments against its Climate Bonds Taxonomy to determine alignment and uses sector specific criteria for certification. Climate Bonds Certification is a labelling scheme. Rigorous scientific criteria ensure that it is consistent with the 2 °C global warming limit of the Paris Agreement. Certification requires initial and ongoing third-party verification to ensure the assets meet the metrics of Sector Criteria.

Green bonds are part of the unstoppable momentum for sustainable investment

The concept behind the green bond market is a simple one

– that the proceeds raised are directed to green projects, assets, or expenditures. This simplicity has been key to its success. For the most part, green bonds do not have complex repayment structures linked to performance metrics.

The market is part of a broader shift to finance an economy-wide transition to a low carbon economy in line with the goals of the Paris Agreement. This will require huge allocations of capital to shift away from stranded high carbon assets towards those aligned with zero carbon by 2050. The green bond market has provided a critical link between assets and financial instruments with a ‘use of proceeds’ (UoP) model whereby finance raised is directly linked to green assets/projects on the ground.

The core benefits of the green label both to the issuer and the investor have underpinned the market’s success and are summarised in the box below.

While the green bond concept is simple, a web of supporting guidelines, **regulations and principles have emerged to ensure that the market avoids greenwash** which, in turn, relies on strong guidance to answer the more complex question underpinning the entire market ‘What is green?’.

To answer this question, guidance has evolved from market-led voluntary initiatives to an increasingly regulated environment. Initial deals utilised science-based guidance such as the Climate Bonds Standard (first released in 2012), second party opinions or the voluntary but widely adopted Green Bond Principles (GBP) which were first released in 2013. But increasingly regulators have stepped in – this began in 2015 in China with the publication of the first ‘taxonomy’

by a regulator when the People’s Bank of China published the Green Bond Endorsed Project Catalogue. Multiple regions and countries followed by adopting guidance largely in line with the GBP (ASEAN, Japan, India etc.).

In 2020, the EU Taxonomy Regulation entered into force which has prompted other countries, including South Africa to develop their own. The development of taxonomies is an important step in providing clear guidance around what is green and ensuring that this changes over time in line with the requirements of the Paris Agreement. If the development of taxonomies is also harmonised across the world, they can also facilitate the flow of international capital to green projects in emerging and developed markets (EM and DM).⁷

Benefits of green bonds

Issuers:

1. Access to a larger pool of investors

Green bonds attract a broader range of investors including a multiplying list of funds mandated to invest in green and/or social products. The most recent Climate Bonds’ research⁹ determined that 56% of green bonds were allocated to ‘green’ investors. The Climate Bonds Treasurer survey found that 98% of deals attracted new investors¹⁰



2. Diversification of investor base

As well as new investors, green bonds tend to attract a wider range of investors from pension funds to asset managers with green mandates as well as central banks.



3. Green bonds can attract a lower cost of capital

Climate Bonds’ research¹¹ of USD and EUR shows that, broadly speaking, green bonds tended to attract larger book cover and spread compression during the book-building process, which can allow issuers to squeeze the pricing, potentially to the point of achieving a ‘greenium’ (a greenium occurs when the green bond prices inside the yield curve and results in cheaper cost of capital for the issuer). While the analysis is based on the most liquid part of the market, there are multiple anecdotal examples of local currency bonds achieving tighter pricing than expected.



4. Stock Price Bounce

The results of academic research suggests that stock prices react positively to green bond issuance. One in particular demonstrates that the number and significance of this reaction increased after the Paris Agreement. A determinant of this reaction is that investors expected climate-related regulations following such an agreement and, therefore, placed greater value on the “green” flag of the bond issuance.¹²



5. Market Signal

The activity of preparing to issue a green bond involves an audit process to determine the climate risks of an entity. This exercise helps entities to develop transition plans and incorporate them into business plans and strategic initiatives. A green bond is therefore sending a signal to investors that the entity is preparing to protect revenues from climate change risks.



Investors:

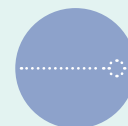
1. Green bonds retain their value in the secondary market

Our Green Bond Pricing in the Primary Market series has consistently demonstrated that green bonds tighten more than vanilla (non-green) equivalents in the secondary market after both 7 and 28 days. In other words, even after they are issued, they hold their value to investors.



2. Green bonds have demonstrated lower volatility

There is mounting evidence to suggest that green bonds demonstrate lower volatility in the secondary market compared to vanilla equivalents. The German ‘twin’ sovereign provided a dream case study for this and is discussed in our H2 2020 Pricing paper. Additional research on the topic has been done by market participants.¹³



2. Emerging evidence of greater liquidity

In March 2020, the COVID-19 pandemic brought financial markets to a standstill. Investors reported being able to transact green bonds while the market was closed to other types of instruments. This is important because it suggests that green bonds offer investors greater flexibility.



The role of NDCs in defining country transition pathways

While the 2050 net-zero is a global target, not every country's decarbonisation trajectory to achieve this will look the same – sectors in some countries may face steeper short-term emission reductions pathways than other countries depending on local circumstances, technological developments, jobs etc.

A Nationally Determined Contribution (NDC) as submitted to the UNFCCC should be the main tool for understanding the appropriate transition pathway for a country. And, if individual and collective NDCs were sufficient

to meet the goals of the Paris Agreement and detailed enough on carbon budgets, an NDC would allow a more nuanced and country-specific approach to analysing transition pathways.

This, however, is not the case – the majority of NDCs are neither sufficient nor detailed enough to deliver the Paris goals - including South Africa's.

South Africa published a draft of its updated NDC in March 2021.¹⁴ It proposes to strengthen the target range for 2030 where the upper end is now 28% lower than in the previous NDC and the lower end is unchanged. Under the Climate Action Tracker, the proposed change, although strengthened is regarded as 'insufficient'¹⁵ (i.e. not

yet likely to be in line with the Paris Agreement 1.5°C temperature goal). The NDC Update will need much greater ambition, particularly in the power sector, to be aligned with the Paris Agreement.

South Africa intends to commit to a net zero CO2 target by 2050 as part of a visionary statement in its Low-Emissions Development Strategy 2050 submitted to the UNFCCC.

In the absence of granular and ambitious NDCs globally, to understand South Africa's transition, we rely on more blunt tools and assessment of sector decarbonisation pathways, focusing on sectors with the highest emissions first – such as energy.

Why green bonds for South Africa?

South Africa has a unique position among EM, particularly in Africa, in that it has a developed and large capital market with frequent bond issuers (unlike many EM) but also faces many of the same challenges as other EM countries – particularly in its capacity to take on debt.

The incredibly low cost of debt capital seen across the developed world has led many commentators, including Climate Bonds, to note that now is the perfect moment in history to finance a green economy.

Such conditions, however, do not exist across much of the developing world, including in South Africa. The yield curve comparison with the US demonstrates this with the yield for 5-year bonds for the South African sovereign at 6.8% compared to 0.361% for the USA⁸.

But even despite this, and in some instances because of this, green bonds remain an important tool for the South African market.

1. Green bonds offer a competitive advantage at a time of instability

– with the South Africa economy seen by global credit rating agencies and some international investors as unstable, green bonds represent a possible competitive advantage to access a large pool of international investors focused on green.

2. Green bonds can demonstrate evidence of credible transitions

to international investors who are decarbonising their portfolios in line with the goals of the Paris Agreement.

3. Asset-backed green bonds can reduce debt burdens and attract international capital

by securing them against assets with low stranded asset risk such as renewable energy and separating them from balance sheets of entities that are exposed to high stranded asset risk and unable to access international capital.

All bonds must meet international climate criteria

– to attract international investor capital, bonds must be in line with international criteria defining zero carbon by 2050. This is particularly

important in EM where other credit concerns are at play – green credentials should be the highest demonstration of best practice. This doesn't mean that local criteria can't account for different starting points – buildings criteria, for example, can account for vastly different average energy efficiency levels in buildings across the world and still be aligned with the same goal. However, the development of different local rules, while useful, will risk losing international investor confidence and demand if they are not credible.

Climate Bonds Treasurer Survey

Green Bond Treasurer Survey explored the core benefits and challenges of issuing green bonds to provide guidance to potential newcomers into green financial markets.

Eighty-six treasurers from thirty-four countries were interviewed represented around 44% of the identified green bond universe at the time of data collection. Key Findings:

- 98% of respondents said that their green bond attracted new investors
- 91% of respondents said a green bond facilitated more engagement with investors

- 88% of respondents said they planned to issue more green bonds
- 84% of the green bonds in the sample, are listed on at least one stock exchange
- 70% of respondents said the demand for their green bond was higher
- 48% responded that the cost of funding green bonds was similar to that of vanilla equivalents



2. South Africa context

Just two entities account for over 50% of South Africa's emissions: Eskom and Sasol. Eskom, as the sole owner and operator of all coal energy generation in South Africa makes up 42% while Sasol, with its coal to liquids business accounts for 11%.

Compared to its G20 peers, South Africa has the largest share of electricity generated by coal power (89%) - substantially higher than the next closest countries India (74%) and China (68%).¹⁶ It follows that to address climate-related risks in the country it will be essential to reduce electricity-related emissions¹⁷.

The state of the current energy system in South Africa has been well articulated elsewhere. However, for those unfamiliar with the market, it is worth noting a few critical points.

Eskom: A large state public utility monopoly, Eskom, supplies about 95% of South Africa's electricity. Coal makes up 89% of electricity generation – from power plants, of which, at least 2 need to shut down urgently with another eleven power stations due to be shut down over the next 30 years.

Eskom is straddled with debt - R484bn (USD32bn) to be precise. This is due to much debated corruption and mismanagement, huge cost blowouts and major delays with its two coal megaprojects (Medupi and Kusile), an aging power network and an inability to recoup costs from consumers.

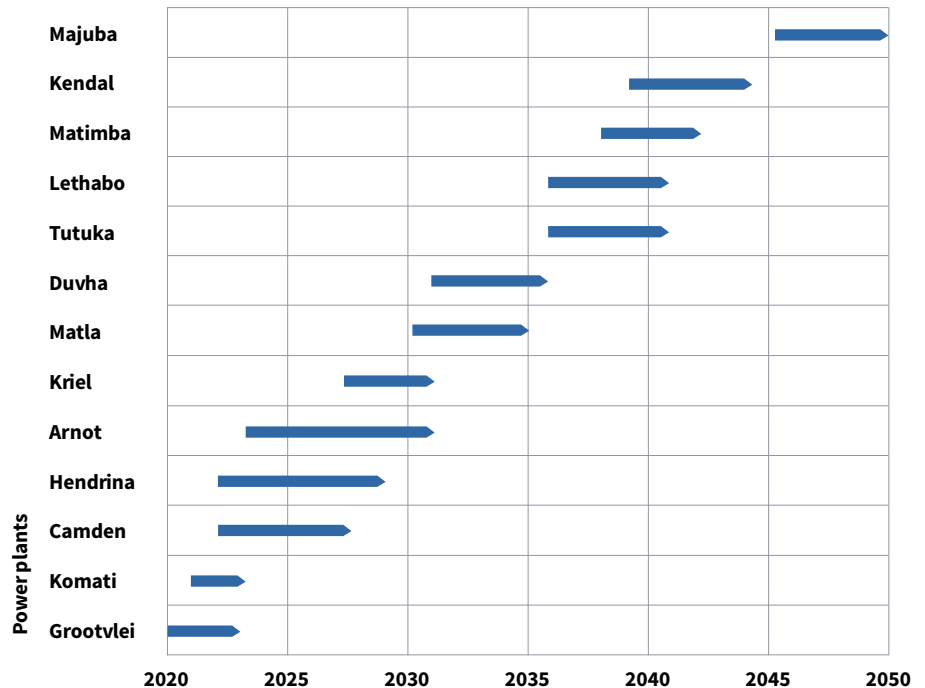
Eskom is a frequent bond issuer, its Domestic Multi Term Note (DMTN) programme is guaranteed by the Government of South Africa. It also issues USD bonds periodically, a total of USD2.25bn issued in international markets since 2013. Fitch Ratings has Eskom Long-Term Local-Currency Issuer Default Rating at 'B+', the senior unsecured debt at 'B+'/'RR4' and the senior unsecured guaranteed debt at 'BB'.¹⁸

National Treasury is now considering moving a part of the debt into an SPV. Under the arrangement, new and retained debt would be paid off as a first priority while that in the SPV would have at least 10 years to be repaid and would be guaranteed by the sovereign¹⁹. Eskom is not currently considering defaulting on its outstanding debt.

An aging fleet - breakdowns have put up to 12.1GW of installed capacity out of commission (out of a total generation capacity of 44GW), according to Eskom, forcing it into daily load shedding²⁰ (blackouts). Aging power stations mean that diesel generation backup is used costing astronomical amounts.

Transition plan – Eskom aims to be zero carbon by 2050^{21,22} with a simultaneous increase in sustainable jobs. This is articulated

Eskom's 50-year decommissioning outline for coal power



Source: Eskom and IRP²⁰

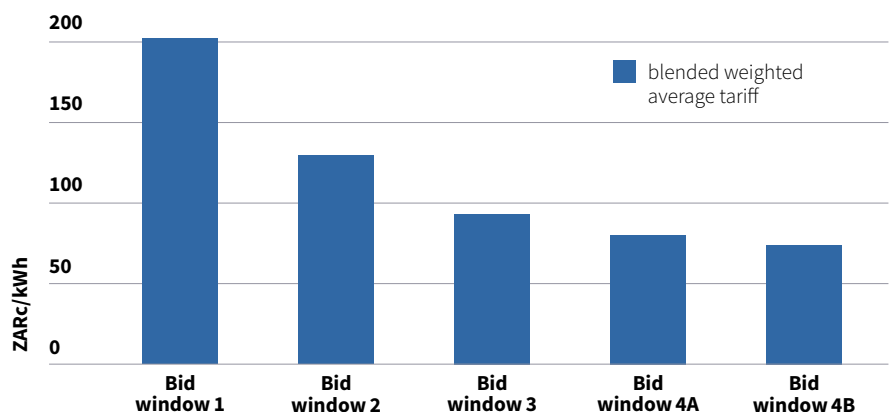
in Eskom's Just Energy Transition Vision²³ which emphasises both the 'just' and the 'transition' which includes a 50-year plan to decommission its coal plants. While there are some questions as to how Eskom will achieve this vision, it is clear that capacity needs to expand and new coal is very unlikely to be part of this expansion both on environmental²⁴ and cost grounds.

Renewable energy cost has plummeted along with global trends as demonstrated through the **Renewable Energy Independent Power Producer Programme (REIPPP)**, a public procurement programme that was introduced to scale up renewable energy provision. From 2011 to 2015, five rounds of reverse auctions were held for construction and supply of 3,625MW of large-scale (>5MW) renewable energy capacity. The REIPPP

witnessed rapid cost declines in the actual price of wind and solar in each of the REIPPP bid windows.

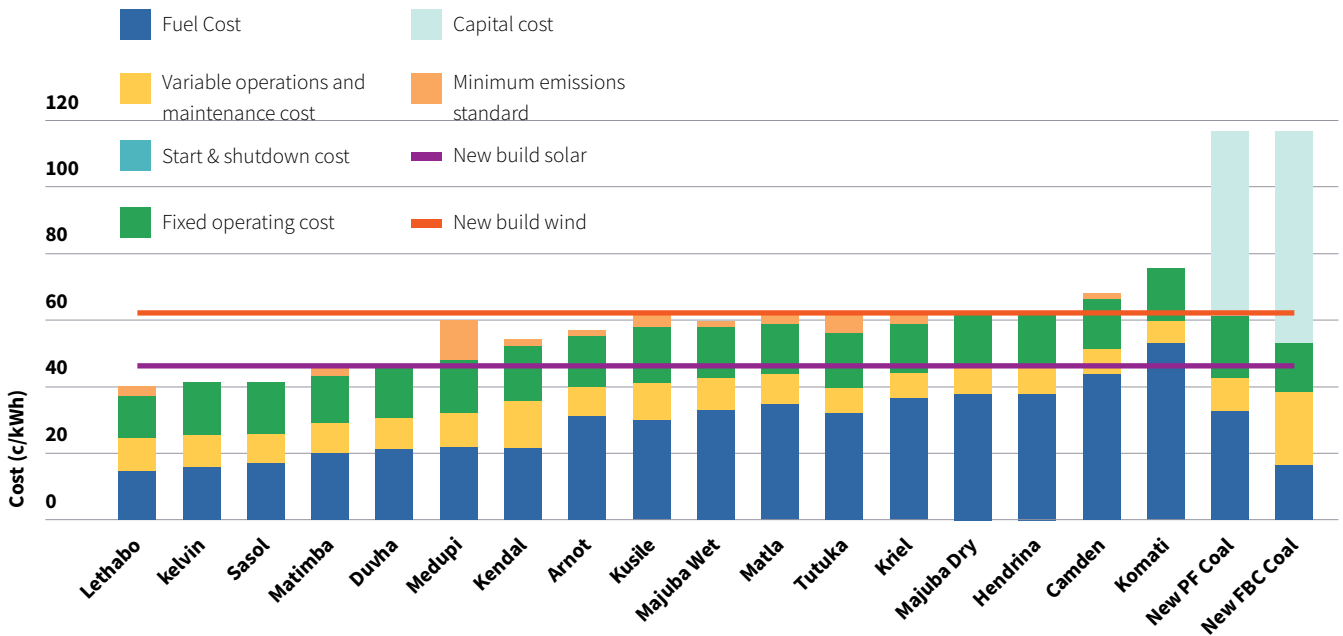
Despite its success, the REIPPP stalled from 2016-2020 in part due to a lack of political determination and in part due to Eskom's refusal to sign PPAs. The REIPPP is expected to be restarted in 2021 with Bid round 5. Separate to the REIPPP, the RMIPPPP (Risk Mitigation IPPPP) was launched in 2020 to procure emergency power (not only renewables) given the power shortages. The RMIPPPP is currently the source of much debate and one of the preferred bidders, Karpowership, (which planned to generate up to 1,220MW by parking eight ships for two decades in ports across South Africa) had been, at the time of writing, refused environmental approvals relating to its bid. If approved, it would lock in gas for 20 years at a high price.

REIPPP saw large cost reductions across all technologies



Source:⁵⁰

Coal-fired power station costs compared to new-build solar PV and wind in 2030



Source: Meridian Economics³³

There is also a growing evidence that when it comes to *new* power capacity additions, renewables are cheaper. A study by Meridian Economics notes that, the plunging cost of renewables has made new build RE the lower cost technology for future energy. Further, coal, nuclear and hydro are no longer economically competitive new-build generation technologies in the SA power sector.^{25,26}

Complicated politics – there are some positive underpinnings including **the Integrated Resource Plan 2019**²⁷ which sets binding targets to cut installed coal capacity from 39.1GW in 2018 to 33.8GW in 2030 while increasing solar PV fivefold to 8GW, raise wind sixfold to 11.4GW. But the nitty gritty is complicated. The IRP is widely criticised by experts as being neither compatible with a net zero by 2050 trajectory nor representing a least cost pathway.²⁸ It also makes allocations for new coal, and there is a lack of clarity under “other” which would likely include more gas.

The job implications are also complicated- coal mining employs over 90,000 people²⁹. This means that size limits have been imposed on new-build solar PV of 1 GW and wind of 1.6 GW specifically to constrain the growth of the sector. Further, Mineral resources and Energy Minister Gwede Mantashe is nicknamed **King Coal** given his pro-coal sentiment. In short, the politics of energy and of coal are complex.

A Just transition is a key consideration of any pathway forward for the energy sector transition and will require a substantial rethink about the types of jobs available and where they are located as well as the re-purposing of existing coal power stations. This has particular implications for Mpumalanga province where most of the coal jobs are located but has relatively poor diversification opportunities at present.

The transition away from coal will have implications for jobs which are not easily accounted for in this framework. However, we note that 2040 is still 19 years away allowing almost 2 decades for a measured transition away from coal jobs.

South Africa’s Green Finance Taxonomy

In 2020, under the leadership of National Treasury, the National Business Initiative (NBI) and Carbon Trust began working to develop a first national Green Finance Taxonomy for South Africa. It was kicked off by the launch of a Project briefing report³¹ as well as a public consultation phase of six workshops covering key stakeholders. The purpose of the Working Group is to develop a taxonomy for green, social and sustainable finance initiatives for the South Africa financial services industry,

as recommended by National Treasury’s Financing a Sustainable Economy Technical Paper (2020).

The taxonomy was released for public consultation in June 2021³². It is based on the EU Taxonomy with similar thresholds in place to define substantial contribution and includes do no significant harm provisions. An updated taxonomy is expected in Q4 2021.

3. The Global green bond market

The global green bond market has grown from just a handful of deals in 2013, to an over USD250bn per year market. In 2020, cumulative issuance passed the USD1tn milestone with the number and diversity of issuers continuing to grow.

In 2020, issuance reached USD297bn - a record-breaking year despite the headwinds faced by the COVID pandemic.

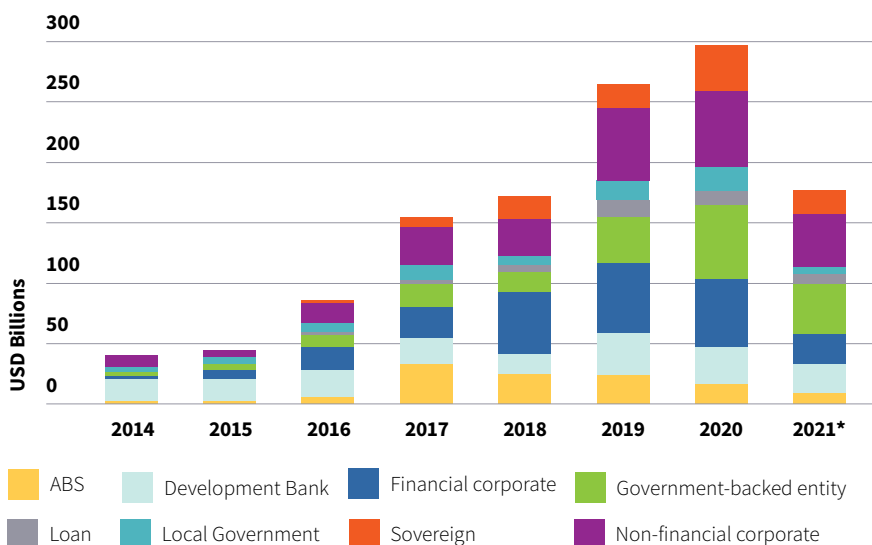
Broadly speaking, 2020 was characterised by **growth in public sector issuer types** while private sector volumes either remained static or shrunk. Public sector issuers are typically less vulnerable to market dynamics because they tend to have long-term investment plans in place. Government support packages took effect in Q2 and many public sector issuers turned their attention to social- and/or sustainability-themed bonds (see next page) to contribute to the immediate relief of the economic shock driven by the pandemic and its ramifications. By September, confidence had returned and entities that had postponed green bonds earlier in the year were prepared, resulting in the most prolific third quarter recorded for green issuance.

A total of 80% of 2020 green volume originated from developed markets (DM) in 2020 with Europe leading. European issuance was led by government-backed entities and non-financial corporates, each contributing 25%. Government and policy support is creating more opportunities for private sector investment in Europe and a more diverse range of issuers are coming to the market beyond utilities, real estate companies, and banks. For example, in the under-supplied automotive sector, Daimler AG, Volvo, and Volkswagen all issued debut green bonds in 2020.

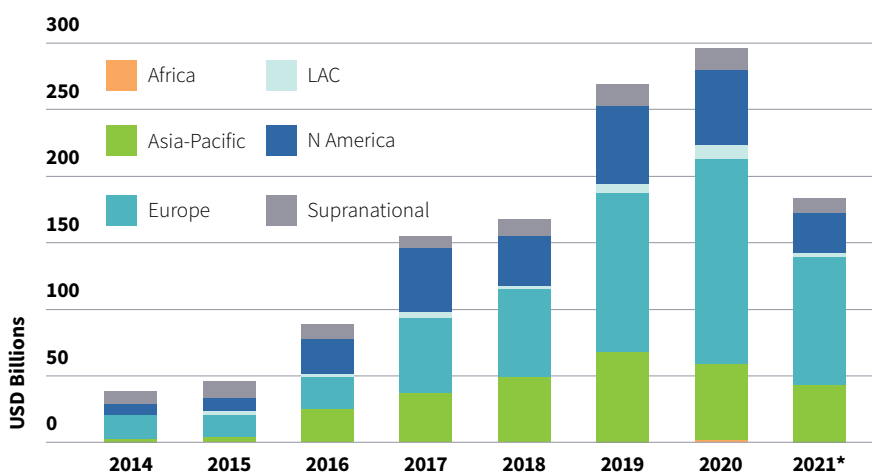
Cumulatively, **20% of issuance has originated from EM countries**. This has been driven by huge issuance volumes out of China but also includes India, Chile, Brazil and Indonesia. EM market growth is not well reflected in the numbers because deal sizes are small but there has been USD211.4bn of cumulative issuance from issuers in 46 countries classified as EM including South Africa, Ghana, Namibia, Nigeria, and Kenya.

EM issuers are primarily issuing in foreign currencies to access international capital. This includes large deals such as the Republic of Chile (EUR and USD), Bank of China (USD, EUR) and others. South Africa, however, bucks the trend with the majority of issuance in ZAR. The ability to issue in local currency is a key challenge for EM issuers who are not able to take on currency risk and for investors who are not always able to access hedging instruments either because they are not available or are very expensive.

The green bond market is growing, attracting a broader range of issuers

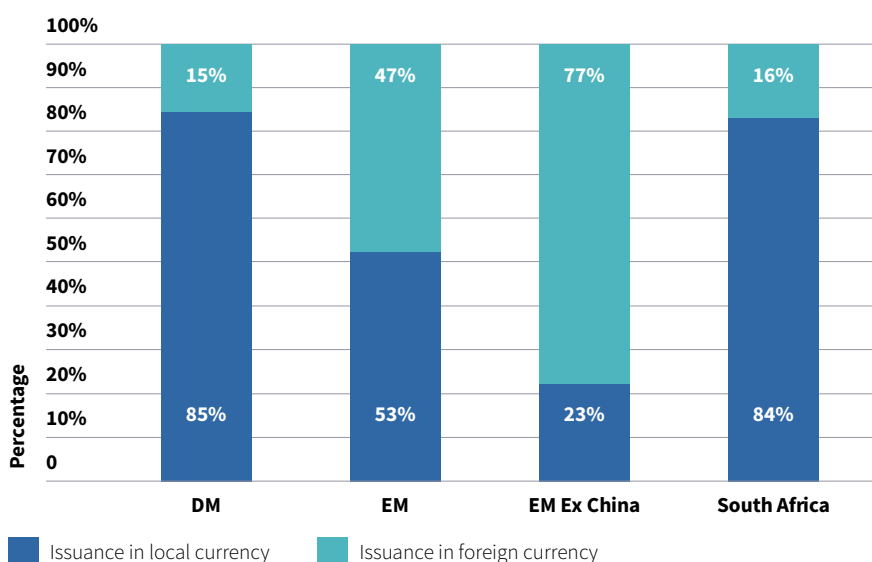


Green bond market: Europe leads growth



* Data goes up to end June 2021

Emerging market issuers are primarily issuing in foreign currencies



Renewable energy accounts for the largest portion of spending. Its share has decreased over time as the market has matured from low hanging fruit like renewable energy to more complex areas like water and waste but volumes have continued to increase year-on-year. We expect renewable to remain important, particularly given that entire energy systems transform away from fossil fuels within the next few decades.

The success of the green bond market has supported the increase in debt issued under other themes – sustainable and social, in particular, all with a focus on societal goals articulated in the Sustainable Development Goals. The social theme experienced massive growth in 2020 as issuers turned to the debt market to support the impacts of COVID-19 and its ramifications.

More is needed – while the success of the global green bond market has been remarkable, far greater ambition is required. One cumulative trillion is a start but a trillion annually is what is needed (at least) to meet the goals of the Paris Agreement.

Encouragingly, there has been a good diversification of issuers including banks and cities. **The City of Cape Town** water bond in particular attracted a great deal of attention as part of the solution to the City’s water crisis in 2018 which saw global media attention.

South African green bond market

Green bond issuance in South Africa has been patchy with strong issuance early on followed by small volumes in the intervening years and a bumper year in 2019.

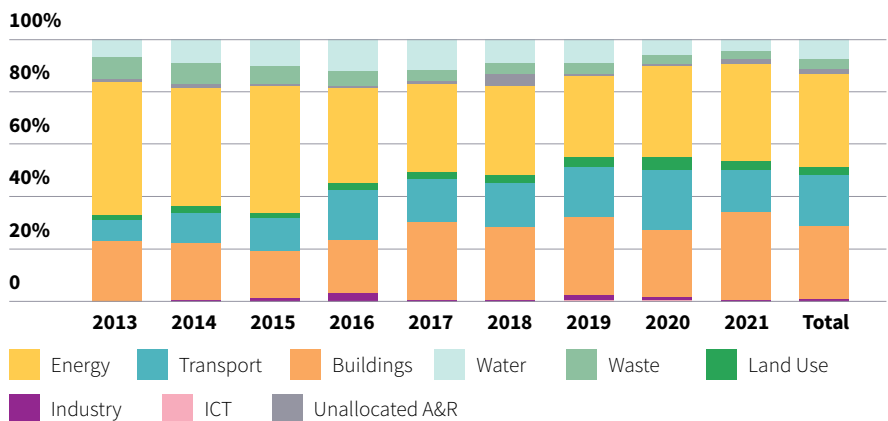
Nedbank has been the most frequent issuer with 3 bonds to date while Redstone Solar Plant was the first green loan and the largest deal to date. **The 100MW Redstone Solar plant** is a CSP plant and was part of the REIPPP.

In July 2019 ACWA received Certification for the refinancing of its development of the Redstone Solar Thermal Power Plant. The project was developed by ACWA Power, with SolarReserve providing the CSP technology. SolarReserve is headquartered California and is an expert CSP developer. The solar farm is a Concentrated Solar Power plant located in Postmasburg, in the Northern Cape. The plant has an installed capacity of 100MW and it is one of the largest renewable electricity generation plants in South Africa. The development cost of the project is over USD1bn. It became operational in late 2018.

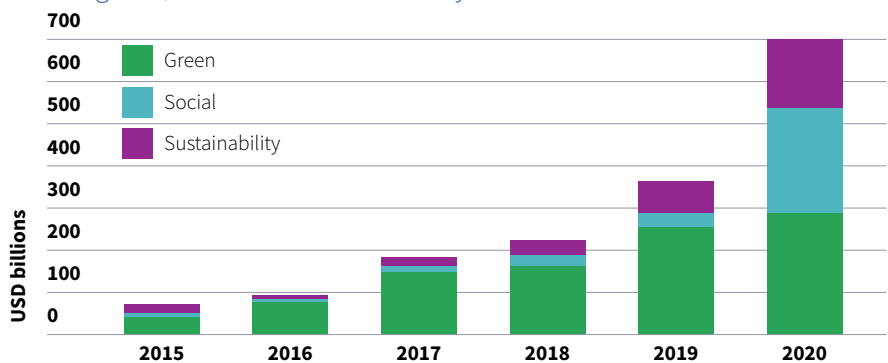
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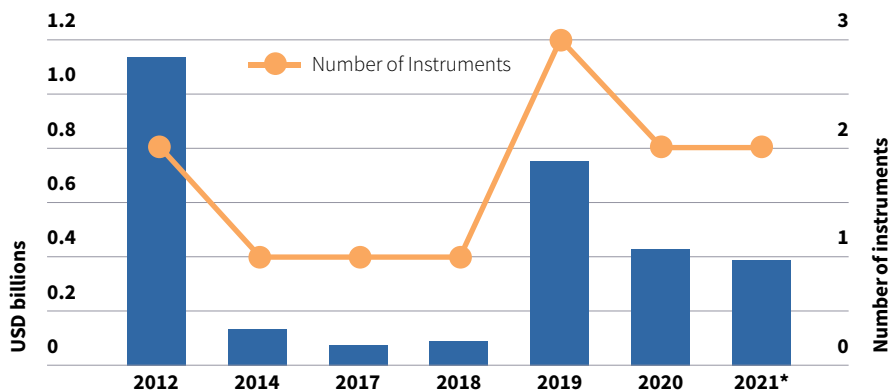
Use of proceeds have diversified over time with Energy and Buildings categories leading



Global green, social and sustainability bond issuance doubled in 2020

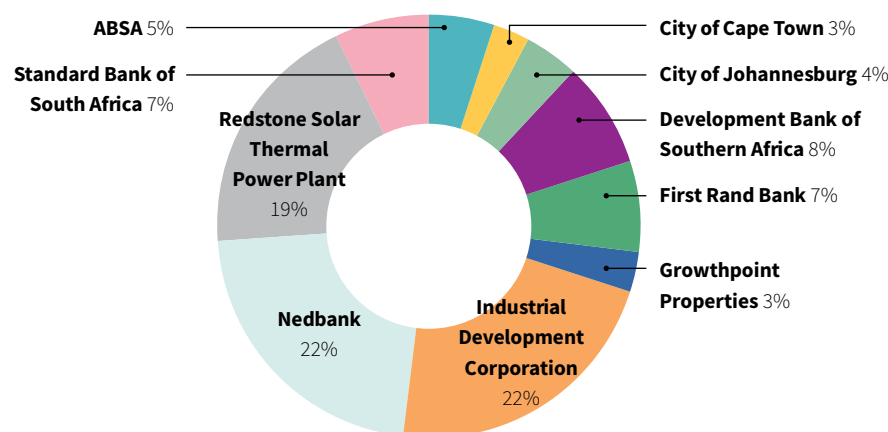


South African green bond market



*Some 2021 deals are pending inclusion in the Climate Bonds green bonds database due to a lack of information available but are included here and below for completeness.

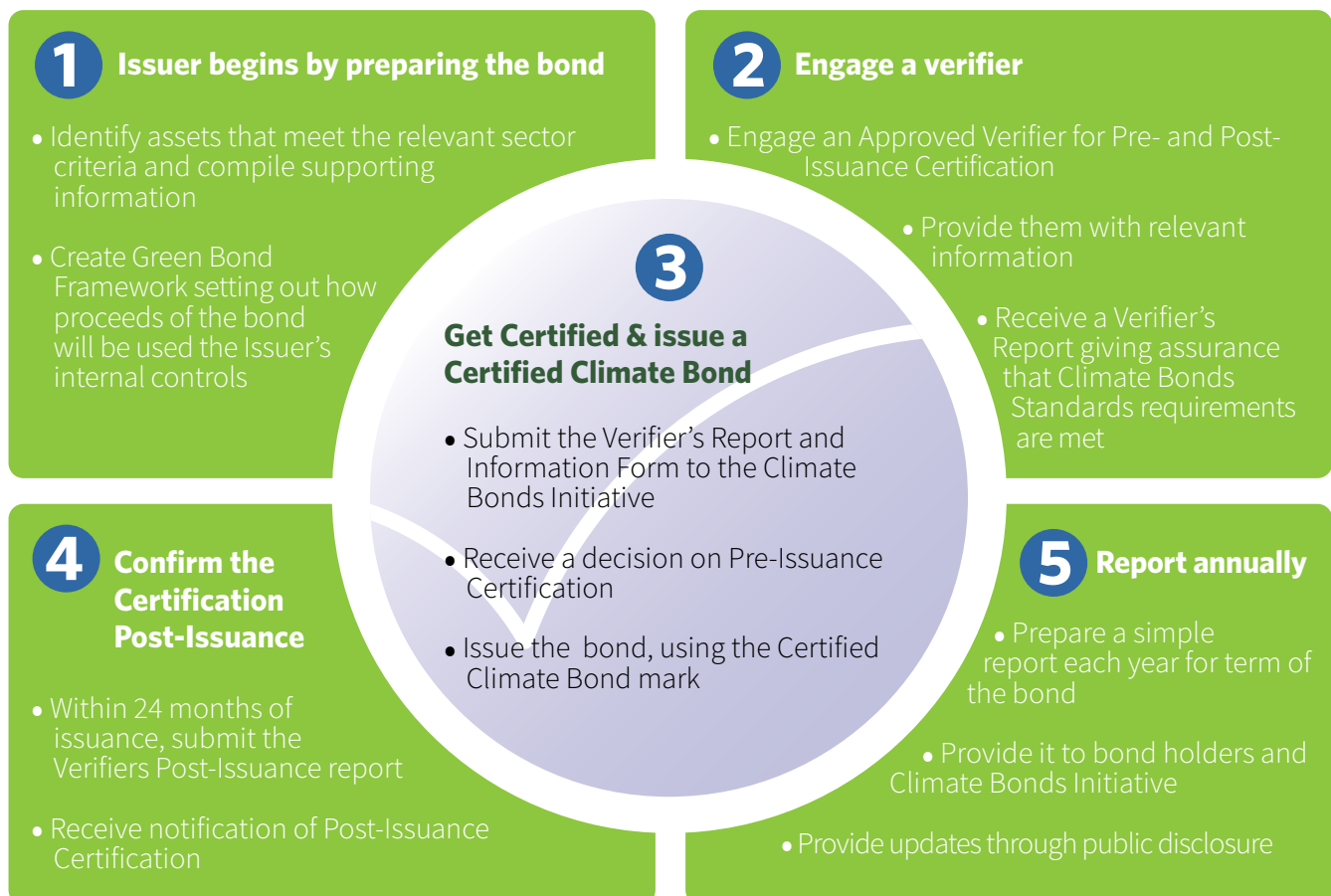
South Africa green bond market has seen 10 different issuers



4. How to issue a green bond

Process comparison between regular bonds and bonds labelled green issuances	
A. Issuing a regular bond	B. Issuing a green bond – Additional steps
<p>Pre-Issuance</p> <ul style="list-style-type: none"> • Get rated • Get market intelligence on currency, tenor, size • Decide on underwriters • Register with local regulator • Issue prospectus • Comfort letter / due diligence • Outreach through road shows and sales 	<p>Pre-Issuance</p> <ul style="list-style-type: none"> • Define a Green Bond Framework: <ol style="list-style-type: none"> 1. Preparation 2. Define how project meets green bond eligibility criteria (Use of Proceeds) 3. Put in place project selection process and select eligible projects (Selection of Projects and Assets) 4. Set up accounts and process to earmark and allocate proceeds – ring-fence the proceeds (Management of Proceeds) 5. Establish Reporting processes 6. Get pre-issuance external review (External Review) • Check for support mechanisms
<p>Issuance: Launch the bond into the market</p> <ul style="list-style-type: none"> • Build the book of investors who are interested in the bond 	<p>Issuance: Launch the bond into the market</p> <ul style="list-style-type: none"> • Include the green attributes in marketing materials and investor documents
<p>Post-Issuance</p> <ul style="list-style-type: none"> • Price and allocate bond to support secondary market performance • Communication to the capital market • Monitor secondary market 	<p>Post-Issuance</p> <ul style="list-style-type: none"> • Allocate proceeds to the projects • Monitor the projects and track allocation over time • Publish impact Report • Post issuance Audit if necessary

Guide to Climate Bonds Certification



4. Transition finance in South Africa

Achieving the goals of the Paris Agreement will require entities with some of the highest emissions levels to re-imagine themselves, planning and implementing transition pathways in a world that has renewed climate priorities.

Green and sustainable bonds have become an important tool to finance these transitions. **Large GHG emitters, however, are still largely absent from the green bond market** despite their vital role in reducing global emissions and their presence in mainstream investment portfolios. Their reluctance is perhaps partly due to accusations of greenwashing. Transition finance has emerged to fill this gap and encompass a broader range of high-emitting sectors such as fossil fuels, electricity generation, industry, aviation etc.

The transition concept is applicable, not just to individual assets, but to whole entities or economies following credible strategies that are aligned with the Paris Agreement. A credible transition strategy is not about where the entity is today but how its strategy and operating metrics show where it will be in 2030 and in 2050 (net zero emissions).

While having a credible transition strategy will enable entities and economies access to a huge pool of capital across asset classes (bonds, loans, equities etc.), **investors have also raised concerns around the potential for greenwash** - in particular that 'transition' is just 'business as usual' by another name i.e. that the label is being used as a catch all for activities that are a 'bit green' but have very limited impact in moving the needle on reducing global emissions. This need not be the case. The transition concept and any associated label could and should be a useful tool for identifying sectors and entities that are making ambitious transitions, as a complement to the existing green label.

For South Africa, given its dependence on coal and that the energy sector accounts for 45% of all emissions, the transition discussion is largely focused on energy and particularly on electricity. But energy is just the beginning. South Africa has a huge role to play, for example, in the global debate on how mining is part of the transition.

In September 2020, the Climate Bonds Initiative published a proposal to market entitled **Financing Credible Transitions**.³⁴ It outlines a Framework for evaluating what a credible transition looks like for whole entities as well as the individual activities that they operate.

In simple terms, it first outlines how activities and entities can play a role in the 2050 low-carbon economy and whether an activity can be decarbonised over time (Pathway to Zero) or should be replaced with a low-carbon alternative (Interim and Stranded). It then outlines five transition principles for an activity/entity to meet to be seen as credible (see below).

South Africa is in a somewhat unique situation in that over 50% of its GHG emissions come from just two entities: Eskom (42%) and Sasol (11%).³⁵ Given this, a huge focus on any transition from a country perspective needs to be focused on these two entities. The spotlight below highlights some transition opportunities for Eskom and Sasol. However, it is noted that these are illustrative examples to show some of the on the ground implications of the transition framework for activities but that they cannot fully take into account the country context and associated complexities. These are discussed in the box.

Understanding country-specific transition pathways

The Paris Agreement targets are collective, global targets. How these are allocated to countries, industries or sectors is a complex question with no fixed answer.

For some industries, the Paris-aligned transition pathway faces significant barriers such as relative ease or difficulty of meeting GHG thresholds in different locations, the degree of economic development or the need to maintain resource security. For this reason, there may be some flexibility (particularly in the short term) for how each country defines its pathway while still having an end goal that is science-based.

For many countries, including South Africa, NDCs are neither detailed nor ambitious enough to provide a thorough understanding of its transition pathway. Despite this lack of clarity, a great deal of research for South Africa^{37,38} indicates that the biggest opportunity for short term decarbonisation is within the power sector. This is because it makes up a huge portion of GHG emissions (42%) and low/zero carbon technology is already available *at low cost* to replace generation capacity. We have therefore assumed that electricity will need to do the 'heavy lifting' in the short to medium term as costs come down for other sectors (aviation, hydrogen etc.).

A starting point – 5 Transition Principles to protect from greenwash



1. In line with 1.5 degree trajectory
All goals and pathways need to align with zero carbon by 2050 and nearly halving emissions by 2030.



4. Technological viability trumps economic competitiveness
Pathways must include an assessment of current and expected technologies. Where a viable technology exists, even if relatively expensive, it should be used to determine the decarbonisation pathway for that economic activity.



2. Established by science
All goals and pathways must be led by scientific experts and be harmonised across countries.



3. Offsets don't count
Credible transition goals and pathways don't count offsets, but should count upstream scope 3 emissions.



5. Action not pledges
A credible transition is backed by operating metrics rather than a commitment/pledge to follow a transition pathway at some point in the future. In other words, this is NOT a transition to a transition.

Spotlight on Eskom

Extensive research has been carried out by others on the transition pathway for Eskom which is important context for understanding Eskom within the Transition framework outline. This can be briefly summarised as follows:

- The **decarbonisation of the power sector is systemically important** in South Africa's decarbonisation pathway and in is an enabler for the decarbonisation of other sectors – in particular for sectors such as transport, building and industry.
- The **electricity sector is where the largest amount of emissions can be mitigated at the least cost.** This is both because of the high existing emissions from coal as well and well as the availability and rapidly declining cost of renewable energy.

This means that for South Africa to meet Paris Agreement, **all coal will likely have to be offline by 2040.**³⁶ We have used this 2040 as a basis for the assessment below.

Entity-level finance

To access transition finance at an entity level requires an entity to be following a transition pathway to net-zero by 2050 as demonstrated by a credible strategy and measurable operating metrics. This involves both the decarbonisation activities as well as switching away from activities that cannot be decarbonised.

For Eskom, ultimately, this will require transition away from coal toward renewable energy and, as above, ensuring all coal is offline by 2040. It will also require Eskom to have a credible and ambitious transition plan in place which includes clear milestones to be met to 2050.

If a credible transition plan is in place that is aligned with the Paris Agreement, Eskom will be eligible for transition at the entity level irrespective of the fact that it continues to operate coal. This is a core underpinning of the transition concept - that it is about the direction of travel rather than the current state of play. This is important given the need Eskom has to

keep the lights on by continuing to operate coal in the medium-term power and to be able to have access to affordable financing to maintain and operate its existing asset base while building up a new asset based.

However, individual coal projects will not qualify for transition finance at the asset level whether new or existing.

To evaluate whether or not a transition strategy is credible, it needs to meet the five Transition principles above. Based on the information available about Eskom's transition plan, this *could* attract transition finance at the entity level.

The figure below gives some indication of how Eskom as a whole meets the Five Transition Principles based on publicly available information.

Eskom: Entity-level progress on the Five Transition Principles

Principle	What is in place already	What more is needed
<p>1. In line with 1.5-degree trajectory</p> <p>2. Established by science</p>	<p>The Just Energy Transition states a Vision to be Net Zero by 2050.</p> <p>This is not yet a target.</p> <p>Eskom has a plan in place to retire almost all of its 15 coal plants by 2050. This includes:</p> <ul style="list-style-type: none"> • 10 plants by 2040 • a further 3 plants by 2050 	<p>Progress made but more is needed:</p> <ul style="list-style-type: none"> • A 2050 Net Zero commitment at corporate level • Operating metrics, milestones and KPIs to accompany target • Shorten time frame on coal retirement to all coal offline by 2040 • Increasing RE capacity (<1% of generation capacity) and PPAs
<p>3. Offsets don't count</p>	<p>Eskom has noted that there will be residual emission in the system even when at net-zero. Any remaining emissions will be balanced by:</p> <ul style="list-style-type: none"> • Investing in projects to remove emissions from the atmosphere – e.g. agriculture and forestry • Buy carbon credits 	<p>The transition principles do not allow for the use of carbon credits to offset emissions.</p> <p>Carbon credits are not a core part of Eskom's decarbonisation strategy and refers only to residual emissions once all other mitigation pathways have been exhausted. The plans regarding offsets are sufficient for the medium term but will require re-evaluation as new technologies emerge.</p>
<p>4. Technological viability trumps economic competitiveness</p>	<p>New power currently being explored:</p> <ul style="list-style-type: none"> • Renewable Technologies • Boiler Conversion to Gas Firing or Biomass • Battery Storage • Other storage options • Hydrogen economy 	<p>Progress made but more is needed:</p> <p>The new power being explored is encouraging. However, the focus needs to shift away from gas to</p> <ul style="list-style-type: none"> • Renewable Technologies • Battery storage • Hydrogen
<p>5. Action not pledges</p>	<p>Just Energy Transition (JET) is the foundation for understanding Eskom's transition plan.</p>	<p>Progress made but more is needed:</p> <p>JET needs to be strengthened to be aligned with science (net zero by 2050, coal off by 2040).</p> <p>The JET also needs to be backed up by operating metrics, KPIs and milestones to track and assess progress.</p>

Individual assets/activities

For individual assets, there are ‘easy green’ areas that Eskom could easily qualify for green financing in the short term. These include financing and refinancing of renewable energy, pumped storage etc.

The more challenging activities are those in the ‘Stranded’ category – here, the only eligible expenditures are measures that significantly reduce emissions in the short term. For coal, given the limited ability to significantly reduce emissions in the short term, the main areas which qualify would be early plant closure and repurposing.

Repurposing of old power plants is a key part of Eskom’s Just Energy Transition strategy to maintain jobs in the areas they employ people already. Early closure and repurposing projects could attract green and sustainable finance investors.

In the framework below, both new and existing coal are deemed as *stranded* at the activity level. This means that any finance raised *specifically* to finance new or refinance existing coal (i.e. use of proceeds green bonds) would not meet investor expectations of green/transition finance.

Eskom: illustrative breakdown of activities (not exhaustive)

Category	Sub-category	Transition category	Green/transition finance available
Power generation	Coal power	Stranded*	Only for early decommissioning and repurposing of coal-fired power stations
	Renewable power	Near Zero	Yes, for all near zero activities
	Nuclear power	Unclear	Nuclear pathway is currently unclear
	Gas power	Interim/ Stranded	Only measures that capture and utilise gas leakage in gas pipelines OR Measures to retrofit pipelines/ power stations for hydrogen
	Hydro power Pumped storage	Pathway to Zero Enabling	Yes, full asset but with some caveats Yes, for full asset
Transmission	Transmission network	Enabling	Only if connecting renewable energy OR Investments enabling grid decarbonisation
	Substations	Enabling	As above

The role of gas in the transition

Gas has long been positioned as a transition fuel with the potential to significantly reduce emissions if replacing coal. Emerging evidence is, however, indicating that the steep trajectory required to reduce emissions leaves very limited room for gas in the transition. This is reflected in the IEA’s Net Zero Emissions scenario that demonstrates that to deliver the Paris goals, no new investments in fossil fuels can be allowed.

The primary reason for this is methane leakage makes GHG emissions from gas-fired power much closer to coal than previously realised. Calculations for GHG emissions savings from using natural gas instead of coal have not included the gas supply chain. However, if gas leaks more than just 3% of its content along the route from wellhead to power station, it is worse for the climate than coal.³⁹

While better leak management and protocols in place for measurement may help, there is another problem – the super-emitters problem. A study of US gas production by the NRDC showed that over 44% of methane

emissions in their sample came from just 2% of sites.⁴⁰ In other words, while improvements can be made across the system – a few accidents in a tiny minority of sites, can cause average leakage rates to go over 3%. While better protocols can reduce accidents, they are still a big risk and difficult to mitigate across the extensive gas system.

Lastly, and importantly for countries like South Africa, there is a **lock in** problem. While there may be arguments to be made to improve efficiency of existing gas plants in the interim, new gas infrastructure will last for decades – far beyond the point at which even best-case-scenario emissions from gas power will be higher than what is required to meet the Paris Agreement.

There remains a great deal debate around gas and its role in the transition -in particular for existing assets which will continue to operate while renewable energy infrastructure is expanded to first replace coal infrastructure.

Given the emerging evidence regarding gas, Climate Bonds’ asserts that the role for gas in the transition can be briefly summarised as follows:

Not eligible:

- New gas-fired power projects
- Minor efficiency upgrades to existing gas infrastructure

Potentially eligible*:

- The retrofitting of existing gas pipelines to be ‘hydrogen ready’ is eligible as an enabling activity
- Significant efficiency improvements to existing gas power may be eligible if seen as not locking in infrastructure beyond sunset date
- Projects to reduce methane losses e.g. Substantial reduction in gas flaring
- Gas power for heavy industry could be an interim activity until green hydrogen is available
- Blue hydrogen (using gas) may be an interim activity (i.e. eligible in the short term) if it boosts volume demand for hydrogen.

*Note that Climate Bonds does not currently have criteria relating to gas as an interim fuel

Spotlight on Sasol

Sasol is the 2nd largest emitter in South Africa. It produces a wide range of liquid fuel and chemical products using a process known as ‘Fischer-Tropsch’. This is different to a conventional crude oil refinery and, in simple terms, uses a carbon feedstock (coal) to produce hydrogen as well as a range of synthetic fuels including diesel, kerosene and jet fuel.

Entity

At the entity level, currently Sasol’s current transition plan is to reduce emissions by at least 10% by 2030. Sasol is due to announce its 2050 targets (as well as a review of its 2030 target) in September 2021. These targets are likely to be more ambitious.

The current targets are some way off the global Paris Agreement target to nearly halve emissions by 2030 and if, seen alone, is insufficient to be eligible for entity-level transition finance.

As discussed, not every entity or sector within South Africa will have the same decarbonisation trajectory so there could be a case for Sasol to have a more gradual pathway than other sectors/entities. In the absence of this granular information, the 1.5-degree trajectory is for all sectors to roughly halve emissions by 2030 and be net zero by 2050. **Given its 2030 target, Sasol will need a more stringent 2030 and 2050 commitment to attract entity-level transition finance.**

On the other hand, while its 2030 commitments are not yet sufficient and its 2050 ambition is not yet available, actions are being taken in support of a strategic shift in Sasol’s business model which are encouraging albeit at a nascent stage. These include:

- The **procurement of renewable energy.** Sasol is building its renewable energy (RE) facilities to reduce its dependency on coal-based power which is a major part of its GHG footprint.
- **Green hydrogen.** Actions are already being taken to increase hydrogen ramp up through concept and pilot projects.

Sasol: Entity-level progress on the Five Transition Principles

Principle	What is already happening in support of a credible transition	What more is needed
1. In line with 1.5-degree trajectory 2. Established by science	<p>>10% GHG reduction by 2030 for energy business.</p> <p>The long-term vision is to shift to Hydrogen as a core part of the business.</p>	<p>Progress made, much more needed</p> <ul style="list-style-type: none"> • Net zero by 2050 target needed. • Shift focus away from gas in the medium term • Ramp up hydrogen vision
3. Offsets don’t count	<p>Offsets are part of Sasol’s transition plan as allowed under the South Africa carbon tax act (Max of 5-10%) although this is in addition to GHG emissions targets (rather than as a way to achieve targets).</p>	<p>Offsets can continue to be used as a complementary measure but should not be a tool to achieve short to medium term GHG emission reduction targets.</p>
4. Technological viability trumps economic competitiveness	<p>At present, a major opportunity for Sasol is in green hydrogen – both as a product they can sell to consumers and as an input into their processes. Sasol is already one of the largest producers of Hydrogen (not green) in the world and has prototype projects and plans to produce green hydrogen.</p> <p>Sasol is also supporting demonstration projects that show-case the potential of hydrogen, such as the Department of Science and Innovation’s hydrogen fuel cell project.</p>	<p>Progress made, more needed</p> <p>There is huge potential for ramping up green hydrogen production both for its customers and for use in its own processes. The Fischer-Tropsch assets can play a role in this process.</p> <p>The next step for Sasol is to</p> <ol style="list-style-type: none"> Continue green hydrogen proof on concept Outline pathway and enabling conditions required to ramp up green hydrogen production Consider how it changes its product suite over time to reduce scope 3 emissions.
5. Action not pledges	<p>Targets in place:</p> <p>2030: at least 10% 2050: TBA</p> <p>Progress: GHG emissions have reduced by 13% since 2004.</p> <p>Action being taken to meet 2030 pledges includes commissioning of renewable energy (RE) facilities. A major reduction in emissions will be enabled through the production of its own renewable energy facilities which is already underway – this is a significant step in terms of action as part of its pledges.</p> <p>Energy and process efficiency improvements are ongoing to enable short term emissions reductions.</p>	<p>Progress made, more needed</p> <p>In the short-term, pledges need to be strengthened to align with net zero.</p> <p>These need to be accompanied by capex plans/commitments, KPIs and milestones to achieve commitments.</p> <p>In the longer term, the strategic vision will need to focus on reducing other sources of emissions including the scope 3 emissions associated with its product line. New business and strategy announcement will be announced later in 2021.</p>

Scope 3 emissions: For a full entity transition, entities also need to consider scope 3 emissions – and for those products with high scope 3 emissions, how to transition away from these products into zero emissions alternatives. Under the IEA SDS scenario, Sasol projects that its liquid fuel and coal demand will see rapid declines – thus supporting a shift to different products in the medium to long term. We expect to see more strategic announcement on this in the coming months.

Individual activities and assets

Current business activities:

Sasol’s current business model is a complex mix of energy and chemicals. To analyse the whole business per activity will require a much deeper understanding each product, its potential to be decarbonised and its utility within a 2050 low carbon economy.

It will also require a deeper understanding of scope 3 emission (emissions made by other entities using products made by Sasol) for each product, some of which have high scope 3 and others which sequester emissions (negative scope 3).

As a first step, however, the major product lines are listed below with some critical questions which will aid the understanding of the role of each product within a low carbon economy.

Future business activities:

While Sasol’s current product mix is shown above, this is not the full picture. Investments are being made now in new low carbon business lines including:

Renewable energy - Sasol has announced plans to for a 900MW renewable energy roll out⁴¹ by 2030 which will be shared with Air Liquide. While Sasol is unlikely to market renewable energy as a product line, renewables as an input are a core part of its decarbonisation strategy. Green bonds could be used to finance these assets.

Green Hydrogen scale-up is another area where there is strong potential. Sasol are already working on proof-of concept green hydrogen initiatives by repurposing some existing assets. Green/transition finance could be used to finance investment in assets and projects relating to this part of the business. Sasol is already working on “proof-of-concept

green hydrogen initiatives”, and has plans to leverage its existing Fischer-Tropsch assets and technology to support South Africa’s energy transition.⁴² The Fischer-Trosch process, while better known in the production of coal-to-liquids and gas to liquids applications is well positioned to produce sustainable fuel and chemical products. The Fischer-Tropsch process utilises hydrogen and carbon as feedstocks to produce a range of synthetic hydrocarbons such as aviation fuels and wax products. Therefore, if green hydrogen is processed with a clean carbon source, such as biomass, via the Fischer-Tropsch process this will result in green / sustainable products.

Sasol: illustrative breakdown of activities (not exhaustive)

Product sub-category	% revenue	Critical questions for transition finance
Liquid fuels and crude oil	31%	<p>Can this product be feasibly decarbonised in line with the Paris Agreement (including scope 3 emissions)?</p> <p>No:</p> <p><i>Are there any low carbon substitutes feasible/available?</i></p> <ul style="list-style-type: none"> If yes, transition finance is eligible for transition away from high-carbon activities to low carbon substitutes If no, transition finance is eligible for investments that reduce emissions from the activity as much as possible, without locking in technologies that enable decarbonisation in the future <p>Yes:</p> <p>Transition finance is available for any investments made to decarbonise the activity in line with the Paris Agreement.</p>
Polymers	16%	
Solvents	7%	
Fertilisers	2%	
Organics	27%	
Waxes	5%	
Advanced materials	4%	
Coal mining	1%	Coal mining is stranded and is not eligible for transition finance except for any measures being taken to retire coal mines early.
Gas	3%	The only eligible investments relating to gas are listed below

5. Green bond models for energy investment

The green label can fit a range of different green finance structures. The most relevant ones for South Africa and the energy sector are listed here.

1. Sovereign/sub-sovereign green bonds



Over 16 sovereign governments worldwide have issued green bonds to finance a range of different projects including energy. The case for sovereign green bonds is strong – particularly for emerging markets where investors may see the sovereign as the first entity they would invest in a new market.

Investors all around the world have indicated strong interest in sovereign debt, particularly from emerging markets.

For South Africa, this could be an option to finance Eskom's transition and could attract cheaper finance than Eskom debt.

2. Corporate green bonds to finance renewable energy



Green bonds have been issued all around the world by a range of entities to finance renewable energy. Importantly, as green bonds are linked to assets rather than entities, the 'greenness' of the issuing entity is not generally an impediment to access the green finance market (notwithstanding Transition finance comments below).

Green bonds to finance renewable energy could be issued by:

- **Banks** financing capital for renewable energy projects. Over ZAR200bn (USD13bn) was invested in renewable energy through the first four REIPPP bid windows of which 65.8% was financed using debt. Further, to meet the goals of the IRP 2019, an expected ZAR99bn (USD6.8bn) will be invested in solar PV, ZAR271bn in wind and ZAR48bn in distributed generation.⁴³ This represents a huge opportunity for financial institutions to issue green bonds locally and internationally to finance their lending programs.⁴⁴

Advice for issuers considering a GSS bond

Respondents were asked to share the wisdom of their experience with other potential sovereign GSS issuers. The notion of simplicity was a common message, and suggestions encompassed five categories.

1. Get a clear mandate from government – to ensure collaboration between all stakeholders and give credibility to the enterprise.



2. Design a robust and simple framework – choose indicators that the investment community is familiar with to ensure broad acceptance. A solid framework will facilitate continuous commitment regardless of changes in government as well as simplify the reporting process.



3. Choose a few high-profile projects – to maximise impact and streamline the reporting process.



4. Implement budgetary reporting standards – to simplify the identification of eligible expenditures.



5. Prepare for the reporting process – inform each department of their expected contribution well in advance. The results will be closely scrutinised.



- **Independent Power Producers** can and have already issued green bonds to finance or refinance the construction of renewable energy projects as part of the REIPPP. The Redstone Solar Thermal bond is one example of this in practice.
- **Non-financial Corporates** could also issue green bonds to finance new renewable energy capacity additions – this could include smaller-scale rooftop solar for retail or office space or larger scale production of energy inputs – such as Sasol's plans to build solar PV to improve its energy mix or its plans to increase green hydrogen production.

3. Green asset-backed issuance



While the majority of the global green bond market is unsecured (backed on the balance sheet of the issuer), asset-backed issuance can be used to overcome credit constraints in some circumstances. Debt that is tied to growth areas is much easier to finance than entity level debt, particularly for an indebted issuer.

Green ABS or project finance backed by the quality of the renewable energy assets can benefit from:

- Reducing cost of renewable energy technology
- Lower stranded asset risk
- Lower entity-level risk of issuer
- International investor interest for green and renewable energy projects.

Green ABS could be issued by a financing arm of a corporate or government-owned entity, a project developer or financial institution. The key is that the balance sheet risk of the entity is removed for the investor.

4. Transition finance



The transition finance concept is applicable to whole entities as well as, at the more granular level, to their activities and assets. This has relevance for a range of different financial instruments.

Transition bonds

For assets/activities, transition bonds can be used in the same way as in the green bond market where the label applies to the asset and not to the issuer. The Climate Bonds white paper proposes that the transition bond label is used for eligible investment that:

- are making a substantial contribution to halving global emissions levels by 2030 and reaching net zero by 2050 but will not have a long-term role to play; OR
- will have a long-term role to play, but at present the long-term pathway to net zero goals is not certain.

The transition bond label is seen of particular value for entities in high GHG emitting sectors to demonstrate the pathway they are following to alignment with the Paris Agreement. To understand how activities and assets can align with the Paris Agreement, better granularity is needed on the time-based decarbonisation pathways for different high-emitting sectors/activities such as industrial sectors. This work is underway.

Sustainability-linked instruments

At the entity-level, a range of financial instruments can be used by entities both to articulate and finance their credible transition strategy. This includes equities and sustainability-linked bonds (SLBs) and loans (SLLs). SLBs and SLLs are seen as transition instruments as they support an entity's overall goals/strategy rather than financing specific assets.

This 'target-based' type of finance is an emerging asset class where the financed raised is for general corporate purposes (not linked to specific assets) but the financing terms are 'target based' where the coupon/interest depends on the borrower's performance against sustainability-related targets. They aim to incentivise the issuer/borrower to achieve sustainability targets at the issuer level.

There have been some concerns around the growth of SLLs and SLBs. In particular, there are concerns that the targets set not ambitious or easy to assess against broader goals such as the Paris Agreement. For example, some targets relate to ESG scores/ratings based on proprietary methodologies that aggregate a number of ESG factors and difficult to benchmark against specific environmental or social goals (e.g. against the Paris Agreement).

Better guidance is emerging to fill this gap including from ICMA and the Climate Bonds Initiative. Investors are also adjusting their internal guidance based on emerging best practice. For example, the European Central Bank does not accept SLBs using ESG scores/ratings as targets in its Asset Purchase Programme⁴⁵.

The critical feature of this guidance is that transition and green lead to the same goal - alignment with the Paris Agreement and it is backed up by clear operating metrics to demonstrate this pathway over time.

In South Africa, entity-level transition finance could be used by companies looking to move away from fossil fuel to, for example, green hydrogen. Transition bonds could also be used to finance accelerated coal phase down. One specific example of this is the much-debated Just Transition Transaction (see box).

5. Blended Finance



Development banks using blended finance vehicles and instruments such as first loss or partial guarantees, grants, technical assistance, risk insurance, can accelerate the growth of green finance market in particular in overcoming barriers around credit rating.

The use of blended finance vehicles and instruments like guarantees, technical assistance, grants, risk insurance and partial guarantees are gaining traction with private investors, who can use a small amount of development capital to mitigate against a range of risks. Public finance sources can be used in a number of ways to support green bond issuances focused on solar energy projects including: (i) funding technical assistance for the structuring of projects; (ii) de-risking investments through guarantees; or (iii) financing of energy substitution initiatives and project types

Just Transition Transaction



The just transition transaction (JTT) is a form of blended climate finance proposed by Meridian Economics⁴⁶ and centres around the accelerated phase-out of coal-fired power. It is based on approximately 1/3 highly concessional finance and 2/3 commercial finance and provides a long term (~20yr -25yr) concessional debt facility to Eskom and / or the Sovereign, with drawdown over ~5 years.

A JTT for South Africa could create a large (~\$12Bn) long term (~20yr) debt facility to refinance Eskom, conditional on measurable progress with substantial additional mitigation and social action, subject to credible remedies.

It consists of three components:

1. The South African Government and Eskom will commit to delivering substantial, additional CO2 reductions over and above the current policy trajectory; In return:
2. Eskom's access to its traditional debt funding sources (DFIs, MDBs, capital markets, banks, etc.) will be restored within this framework; while
3. Affected labour and communities will benefit from a Just Transition programme backed by the net proceeds from the transaction, embedded in a large green economic recovery industrialisation programme for Mpumalanga province and beyond.

6. Recommendations

Clear and harmonised definitions – the South African Green Finance Taxonomy paves the way for a clear framework for issuers that is also based on the work that is developing elsewhere – such as the EU, China, India and Colombia. This is important given that international investors are vital to financing the transition.

Taxonomies are being developed all around the world to support and provide guidance around the pathway for key sectors and activities to transition in line with the Paris Agreement. While local guidance is essential to translate global goals into locally relevant and applicable benchmarks, they need to be interoperable globally to ensure that the flow of green finance across borders.

Supportive regulation is critical and can take the form of direct support for green bonds (subsidies etc.) or, more importantly for the energy sector, through strong and consistent policy support across planning, finance, procurement and energy. The REIPPP was a good starting point for the growth of the renewables sector in South Africa but more is needed.

The shortcoming of renewable energy policy in South Africa have been well-articulated, in particular that the Integrated Resource Plan needs to go beyond 2030 and that there should be no artificial constraints on RE growth. Local content requirements have been key in helping to develop and maintain a local manufacturing base but this has been hampered by delays and uncertainty with the REIPPP – greater certainty will help to boost both RE supply as well as employment in the sector

Sovereign bonds - a South African green sovereign would send a strong signal to the capital markets that South Africa is preparing to meet the goals of the Paris Agreement. Public sector investment can also encourage green investment from the private sector, e.g. a sovereign green bond could include expenditures to pay for green EV charging infrastructure, car manufacturers will be encouraged to use the green bond market to finance the costs associated with the transition to zero emission vehicles.

Sub-sovereign green bonds have already been issued by the City of Cape Town and Johannesburg. Sovereign and sub-sovereign bonds can catalyse local markets by encouraging essential elements such as the necessary infrastructure, dedicated green bond funds, and visibility. But this is only one piece of the puzzle.

Institutional support from public bodies such as the reserve bank, or institutional pension funds allocating investments to green or socially responsible strategies can also set a crucial example and encourage additional green bond issuance.

Speed is critical for a Just Transition



Some market commentators have noted that to achieve a just transition, the transition needs to be slow and systematic. While the transition away from coal will inevitably be a measured one (2 decades to align with 2040 target) – it should be clear that slow is not always the right decision for jobs particularly:

- **Certainty for renewables = more jobs** in the sector particularly around local content requirements. Local manufacturing of some part of wind turbines was already taking place but factories have been shut down due to the stalled REIPPP. Without this certainty, it will be difficult to grow local content.
- **Fast renewables growth doesn't mean fast coal shut down** – there is currently a huge need for additional electricity supply in the system (hence load shedding) with 2021 shortfall expected to be around 4,000MW.⁴⁸ Meanwhile, demand dynamics are only going to increase that gap particularly as a transition to a low carbon economy requires large scale electrification of transport (EVs) and huge increases in supply for industrial processes such as hydrogen production (see next point). This means that even with aggressive renewables growth, coal shut down can still happen in a measured way over the next 2 decades. In reality, even rapid build-up of renewables is unlikely to be sufficient to meet growing demand – there is no need for further artificial constraints.

- **Hydrogen ambition is strong but time is tight** – South Africa is in a good position to be a global producer of green hydrogen for industrial applications and transport. With its abundance of renewable energy, its critical location along global shipping routes as well as Sasol's existing Fischer-Tropsch assets, South Africa has a competitive advantage in this space which will have opportunities for jobs. However, it is not alone in this ambition – Morocco and other countries also see the opportunity and a first mover advantage will be important in securing a strong market share. As above, to become a large-scale producer of green hydrogen also requires a lot of renewable electricity – far more than current modelling assumptions highlight.
- **Solar energy** – while South Africa is endowed with good solar resources, over the border in Namibia and Botswana has far better solar radiation. Both nations have plans to expand capacity which could lead South Africa to be a RE importer if it does not ramp up its own supply quickly enough to resolve its electricity challenges and build up its knowledge and skills base.

Appendix: Types of bonds and labels

Labelled bond definitions	
Tangibles	
Green Bond	A bond is labelled 'green' or 'environmental' where the proceeds from the bond are directed to projects or assets with environmental benefits
Climate Bond	A subset of green bonds, where proceeds are directed to projects/assets that have specific climate benefits
Certified Climate Bond	Where a green bond has been certified against the Climate Bonds Standards as having met the criteria for Use and Management of Proceeds, External Review and disclosure for Pre- and Post-Issuance Reporting
Social Bond	Where the proceeds of the bond are used for projects and assets with positive social outcomes such as health care and education
Sustainability Bond	A bond that is financing a range of both social and environmental projects/assets
SDG Bond	An SDG bond invests in projects and assets that are aligned and contribute to the achievement of the Sustainable Development Goals (SDGs)
Transition Bond	Transition finance refers to investments that are not yet low- or zero-emission (i.e. not green) but have a short-term role to play in decarbonising an activity or supporting an issuer in its transition to Paris Climate Agreement alignment. This widely debated concept is built on the premise that "transition bonds" can fill a market gap by extending the labelling to a more diverse set of sectors and activities. Many of the candidates are currently highly polluting, hard to abate, and do not fall within existing sets of green definitions but are key to meeting global climate targets. Examples include extractives like mining; materials such as steel and cement; and industrials, including certain types of transportation, e.g. shipping and aviation. Find out more about Transition Bonds by accessing the Climate Bonds Initiative's White Paper. ⁴⁹
Other types of bonds	<p>There are other types of bonds that support the development of climate-related activities including sustainability-linked bonds, pandemic bonds, catastrophe bonds, or blue bonds. In traditional sustainability bonds, issuers have to prove that the capital they raise will be allocated to specific sustainable projects and assets. Sustainability-linked bonds qualify as sustainable because they are issued with a structural component (for example, a coupon) that varies depending on whether or not a defined environmental, social, and/or governance (ESG) objective is achieved.</p> <p>Pandemic bonds, using Climate Bonds definition of the pandemic theme (i.e. deals with a label related to COVID-19), emerged in early 2020 as actors across the global economy organised themselves to facilitate an immediate, effective response to the COVID-19 outbreak and subsequent pandemic.</p> <p>Catastrophe bonds are insurance-linked investment securities that can be used to manage risks that are associated with catastrophic events, such as hurricanes or earthquakes. Companies issue catastrophe bonds to insure themselves against major disasters, and investors who buy catastrophe bonds profit if the underlying catastrophe does not occur.</p> <p>In blue bonds, the proceeds are used for projects and assets related to the marine and coastal industries and ecosystems. A blue bond could be categorised as a green bond if the project brings climate and/or other environmental benefits</p>

Endnotes

1. <https://news.un.org/en/story/2020/12/1078612>
2. IEA, 2021. *Net Zero by 2050*. <https://www.iea.org/reports/net-zero-by-2050>
3. Montmasson-Clair, G. 2021. *The global climate change regime and its impacts on South Africa's trade and competitiveness: A data note on South Africa's exports*. Trade & Industrial Policy Strategies (TIPS). <https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-carbon-border-adjustment-mechanism>
4. https://www.environment.gov.za/sites/default/files/docs/2020lowemission_developmentstrategy.pdf
5. <https://www.climatechangenews.com/2020/09/16/south-africa-aims-reach-net-zero-emissions-2050-still-burning-coal/>
6. https://www.environment.gov.za/sites/default/files/docs/2020lowemission_developmentstrategy.pdf
7. MSCI [Market Classification](https://www.msci.com/Market-Classification)
8. <http://www.worldgovernmentbonds.com/country-comparison/south-africa-vs-united-states/>
9. Climate Bonds Initiative, 2021, *Green Bond Pricing in the Primary Market H2 2020*, <https://www.climatebonds.net/resources/reports/green-bond-pricing-primary-market-h2-2020>
10. Climate Bonds Initiative, 2020, *Green Bond Treasurer Survey 2020*, <https://www.climatebonds.net/resources/reports/green-bond-treasurer-survey-2020>
11. Climate Bonds Initiative, 2021, *Green Bond Pricing in the Primary Market H2 2020*, <https://www.climatebonds.net/resources/reports/green-bond-pricing-primary-market-h2-2020>
12. Glavas, Dejan, [How do Stock Prices React to Green Bond Issuance Announcements?](https://www.environment.gov.za/sites/default/files/reports/draftnationallydeterminedcontributions_2021updated.pdf) (August 31, 2018)
13. Erlandsson, Ulf, 2020, *Green Bond Risk Premiums: A Twin-Bond UJFP Approach*, <https://ssrn.com/abstract=3624591>
14. Department of Forestry, Fisheries and the Environment, 2021, *South Africa's First NDC 2020 Update draft*, https://www.environment.gov.za/sites/default/files/reports/draftnationallydeterminedcontributions_2021updated.pdf
15. Climate Action tracker, 2021, <https://climateactiontracker.org/climate-target-update-tracker/south-africa/>
16. Climate transparency, 2019, *Managing the phase out of coal. A comparison of actions in G20 countries*. <https://www.climate-transparency.org/wp-content/uploads/2019/06/CT-Managing-the-phase-out-of-coal-DIGITAL.pdf>
17. National Treasury, 2020, *Financing a Sustainable Economy*, <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf>
18. Fitch Ratings, 2020, <https://www.fitchratings.com/research/corporate-finance/fitch-downgrades-eskom-holdings-soc-ltd-idr-to-b-outlook-negative-14-04-2020>
19. News24, 2021, <https://www.news24.com/fin24/companies/industrial/sa-seeks-lesser-of-two-evils-in-dealing-with-eskoms-nearly-half-a-trillion-rand-debt-20210324>
20. Petroleum Economist, 2020, <https://www.petroleum-economist.com/articles/low-carbon-energy/renewables/2020/dogma-undermines-south-africa-s-renewables-push>
21. News24, 2020, <https://www.news24.com/fin24/Economy/Eskom/eskom-aims-for-2050-net-zero-emissions-20201114>
22. Eskom, 2020, *Eskom Just Energy Transition*, https://www.tips.org.za/images/TIPS_webinar_17_Nov_Eskom_Just_Energy_Transition_Mandy_Rambharos.pdf
23. Eskom, 2020, *Eskom Just Energy Transition*, https://www.tips.org.za/images/TIPS_webinar_17_Nov_Eskom_Just_Energy_Transition_Mandy_Rambharos.pdf
24. Centre for Environmental Rights, 2020, <https://cer.org.za/news/major-climate-impacts-scupper-another-coal-power-plant>
25. Roff, A., Steyn, G., Tyler, E., Renaud, C., Brand, R., Burton, J. 2020. *A Vital Ambition*. <https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf>
26. Ibid
27. Ibid
28. Energy Research Centre, 2019, http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2019/Alt%20IRP%20final%2007022019_2.pdf
29. Minerals Council of South Africa, <https://www.mineralscouncil.org.za/sa-mining/coal>
30. Eskom Just Energy Transition . 2020. https://www.tips.org.za/images/TIPS_webinar_17_Nov_Eskom_Just_Energy_Transition_Mandy_Rambharos.pdf
31. Sustainable Finance Initiative. 2019. *Stakeholder Briefing*. http://sustainablefinanceinitiative.org.za/wp-content/downloads/Stakeholder_Briefing_Document_9_October_2020.pdf
32. Sustainable Finance Initiative, 2021. <https://sustainablefinanceinitiative.org.za/taxonomy/>
33. Roff, A., Steyn, G., Tyler, E., Renaud, C., Brand, R., Burton, J. 2020. *A Vital Ambition*. <https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf>
34. Climate Bonds Initiative 2020, *Financing Credible Transitions*, <https://www.climatebonds.net/resources/reports/financing-credible-transitions-white-paper>
35. <https://www.miningmx.com/news/energy/42811-sa-emission-strategies-improving-but-eskom-sasol-are-worrisome-outliers/>
36. Meridian Economics, 2020, *What might a Paris-aligned emissions profile look like for the South African Power Sector?*, <https://meridianeconomics.co.za/wp-content/uploads/2020/08/Power-sector-carbon-budgets-2020-v1.1.pdf>
37. http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2019/Alt%20IRP%20final%2007022019_2.pdf
38. Meridian Economics, 2020, *What might a Paris-aligned emissions profile look like for the South African Power Sector?*, <https://meridianeconomics.co.za/wp-content/uploads/2020/08/Power-sector-carbon-budgets-2020-v1.1.pdf>
39. IEA, 2017, *World Energy Outlook*, https://webstore.iea.org/download/direct/1055?fileName=World_Energy_Outlook_2017.pdf
40. Environmental Defense Fund, *Methane Research: The 16 Study Series*, https://www.edf.org/sites/default/files/methane_studies_fact_sheet.pdf
41. Engineering News, 2021, <https://www.engineeringnews.co.za/article/sasol-upscals-renewables-roll-out-ambition-to-900-mw-starts-plotting-big-green-hydrogen-role-2021-02-22>
42. Mining Weekly, 2021, <https://www.miningweekly.com/article/sasol-upscals-renewables-roll-out-ambition-to-900-mw-starts-plotting-big-green-hydrogen-role-2021-02-22>
43. Greencape, 2020, *Utility-scale renewable energy*, https://www.greencape.co.za/assets/RENEWABLE_ENERGY_MIR_20200330_WEB.pdf
44. Greencape, 2020, *Utility-scale renewable energy*, https://www.greencape.co.za/assets/RENEWABLE_ENERGY_MIR_20200330_WEB.pdf
45. European Central Bank, 2021, *FAQ on sustainability-linked bonds* <https://www.ecb.europa.eu/paym/coll/standards/marketable/html/ecb.slb.qa.en.html>
46. Meridian Economics, 2021, *Submission in response to South Africa's proposed updated First Nationally Determined Contribution under the Paris Agreement*, https://meridianeconomics.co.za/wp-content/uploads/2021/04/NDC-Submission_Meridian-Economics.pdf
47. <https://www.polity.org.za/article/shift-from-high-to-low-carbon-must-be-systematic-and-just-mantasha-2020-07-09>
48. <https://theconversation.com/south-africas-electricity-supply-whats-tripping-the-switch-151331>
49. <https://www.climatebonds.net/system/tdf/reports/cbi-fin-cred-transitions-092020-report-page.pdf?file=1&type=node&id=54300&force=0>
50. Eberhard, A., Naude, N. 2017. *The South African Renewable Energy IPP Procurement Programme*. https://www.gsb.uct.ac.za/files/EberhardNaude_REIPPPReview_2017_1_1.pdf

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