

Technical Handbook on Issuing Municipal Sustainable Bonds in South Africa



Forestry, Fisheries and the Environment
National Treasury



Poverty-Environment Action
for Sustainable Development Goals



giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany

Technical Handbook on

**Issuing Municipal
Sustainable Bonds in
South Africa**

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Foreword

The *Technical Handbook on Issuing Municipal Sustainable Bonds in South Africa* has been developed in collaboration between the Department of Forestry, Fisheries and the Environment and the National Treasury. The Technical Handbook was supported through the Green Economy Transformation (GET) Programme which is being implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) with assistance from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and also, within the framework of the International Climate Initiative (IKI). Further, the United Nations Development Programme (UNDP) and United Nations Environment Programme (UNEP) Poverty-Environment Action for Sustainable Development Goals (PEA) Programme, has offered support in building capacity for the implementation of green bond issuance at municipal level.

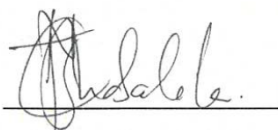
The Technical Handbook is intended to provide municipalities with a comprehensive guide on aspects linked to the issuance of Green Bonds. The Technical Handbook sets out detailed, accessible, practical steps involved in Sustainable Bonds issuance and discusses the associated tasks and activities for municipalities to have a view of the comprehensive process for the preparation, issuance, and management of a sustainable bond. The

Technical Handbook explores key elements of green bonds, and aims to provide balanced information so that municipalities can determine whether a Sustainable Bond is a suitable tool for uptake. The Technical Handbook also contains an organised collection of introductory material related to sustainable bonds, so that readers can familiarise themselves with the terminology, context, purpose and considerations related to the instruments.

There are two main segments to the Handbook:

- An introduction to the Sustainable Bonds ecosystem in South Africa (introducing the actors involved).
- Guidance on issuing a Sustainable Bond: detailing the process step-by step and providing detailed practical recommendations for the activities, processes and expectations for the end-to-end process of preparing for, issuing and managing a Sustainable Bond.

We trust that the *Technical Handbook on Issuing Municipal Sustainable Bonds in South Africa* will remain integral to contributing toward foundational aspects of knowledge related to green bonds issuance for municipalities.



Ms Nomfundo Tshabalala
Director-General
Department of Forestry, Fisheries and the Environment



Mr Dondo Mogajane
Director-General
National Treasury

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This publication was written by Christelle van Vuuren, Associate Director, and Bridget Fundikwa, Analyst, of the Carbon Trust for the Department of Forestry, Fisheries and the Environment and the National Treasury, in partnership with the IKI project Green Economy Transformation implemented by GIZ and UNEP on behalf of BMUV and Poverty-Environment Action.

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We apologize if we have excluded an individual or institution that may have contributed towards the development of this document.

Acronyms and Abbreviations

BEPP	Built Environment Performance Plan	ICMA	International Capital Market Association
CBI	Climate Bonds Initiative	IFC	International Finance Corporation
CBS	Climate Bond Standards	JSE	Johannesburg Stock Exchange
DBSA	Development Bank of Southern Africa	M&E	Monitoring and Evaluation
DFI	Development Finance Institution	MDB	Multilateral Development Bank
DLR	Debt Listing Requirements	MFMA	Municipal Finance Management Act
ESG	Environmental, Social and Governance	NDC	Nationally Determined Contribution
EU	European Union	SBG	Sustainability Bond Guidelines
GBP	Green Bond Principles	SBP	Social Bond Principles
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit	SDG	Sustainable Development Goal

Executive Summary

South Africa's Socioeconomic Challenges and the Green Economy

South Africa's economy is characterized by high levels of unemployment, poverty and inequality; low quality of education, especially for impoverished and disadvantaged South Africans; deficient infrastructure, public health systems and public services; corruption; a lack of social cohesion; and a resource-intensive and environmentally unsustainable growth path (NBI and Carbon Trust, 2020). Addressing the several urgent socioeconomic transformation and development challenges South Africa faces in the coming decades will require a sizeable investment (Stats SA, 2019) with significant positive sustainable development impacts.

Resources remain limited. If economic development plans are formulated as inclusive green stimulus plans, South Africa could benefit from several strategic benefits. These include, but are not limited to, access to foreign direct investment targeting sustainable, green development, a positive jobs impact and long-term economic prosperity. This approach also mitigates climate change-related risks and enhances competitiveness (NBI and BCG, 2020).

The national government has identified resilient infrastructure development amongst the top investment priorities to strengthen the economy, move closer to achieving the goals of National Development Plan 2030, and build economic resilience. There is also a critical need to adopt business and economic models that prioritize inclusive, equitable, green economic activities and outcomes.

The first edition of the South African Green Finance Taxonomy (April 2022) is being developed under the auspices of the South African National Treasury. It distinguishes environmentally impactful sectors and activities that are needed as part of a future South

African sustainable economy. It also provides agreed definitions of green performance for South Africa – i.e. minimum requirements that are uniformly agreed for “what constitutes good enough”. This sets the scene for future green finance flows in South Africa.

There is an urgent need for all parts of society, including all levels of government, to be proactive in addressing climate change mitigation and building resilience. These challenges are closely connected to many other sustainable development imperatives for South Africa. However, an effective response to climate change will make for far-reaching contributions to other urgent national environmental and social impact objectives and the development of a low-carbon, resilient, equitable and sustainable economy.

The Relevance of Sustainable Finance to Municipalities

According to the South African Constitution, the role of municipalities is to mobilize economic resources towards the improvement of the lives of all citizens. Municipalities are therefore tasked with a mandate to provide basic services and foster development in the regions they control.

Without appropriate adaptation measures, the effects of climate change may undermine current development efforts, affect service delivery planning and ultimately impact local livelihoods.

Given their developmental mandate, is it important for municipalities to adopt green economy principles, which include decoupling infrastructure development and improved service delivery from environmental impacts and increased greenhouse gas emissions.

Innovative approaches to increasing and diversifying sources of municipal funding will be needed to raise capital for green infrastructure and economic activities

and projects, and sustainable finance will play an important, two-dimensional role in this. The first dimension, financing green, has to do with mobilizing capital for green and low-carbon investments in the broader context of environmentally sustainable development. The second dimension, green finance, concerns the underlying system – the rules and incentives – of how financing decisions are made to drive the needed economic shift. This aspect of integrating sustainability into decision-making processes has just as much relevance for municipal budget holders as for private sector financiers.

As set out in the South African National Treasury's landmark technical paper *Financing a Sustainable Economy*, the way that capital is allocated needs to be changed, to channel activities away from suboptimal value and impact outcomes and to include climate resilience and climate justice as core objectives.

Adopting sustainable finance instruments will require many municipalities to do the following:

- Enhance project design and funding business case motivation processes; and
- Adjust procurement, financing evaluation and decision-making processes to channel capital to projects that advance the green economy and support local resilience.

Sustainable bonds¹ are one of the many tools that could be applied as an instrument to attract investors and ensure that capital is channelled to deliver South Africa's sustainable development needs and support a green economic recovery.

Introducing Municipal Sustainable Bonds

OVERVIEW OF KEY MARKET DEVELOPMENTS

Even though they are a relatively young type of security, green bonds – which are bonds specifically earmarked

to finance or refinance green eligible activities that will have a positive environmental impact – have been noted as potentially the most popular type of climate-friendly financing instrument to date (Brand and Steinbrecher, 2019). Compared with conventional bonds, green bonds remain a niche market. Nonetheless, they are already widespread internationally and growing in significance.

South Africa is one of a relatively few African countries that has been active in the green bond market, with the others being Egypt, Kenya, Morocco and Nigeria. All of these countries are looking to benefit from green bonds and take advantage of this form of finance which brings resources from both the public and private sectors.

Whilst the number of sustainable bond issuances in South Africa has been relatively limited when compared to international activity, there have been nine sustainable bonds issued by South African private and public sector organizations to date and there is growing interest and preparatory activity in the domestic market. The City of Johannesburg green bond (2010) and the City of Cape Town inaugural green bond (2017–2018) are notable examples

In 2014, the Johannesburg Stock Exchange (JSE) became the first African exchange to launch a green bond segment and green listing rules, helping to promote further green bond issuances. In 2020, the JSE evolved its green bond segment to a sustainability bond segment, providing a more encompassing platform to enable sustainable finance.

MUNICIPAL FUNDING AND DIFFERENT BOND LABELS

Municipalities make use of various funding strategies (including debt instruments) to meet capital and operational expenditure needs. Under external funding, debt instruments used are typically either short- or long-term debt. Short-term debt mostly comprises bank loans and loans from government entities (such as the national government) and other domestic sources. Long-term debt mostly comprises municipal bonds (including municipal sustainable bonds) and long-term bank loans.

In differentiating between sustainable bonds and “normal” bonds – often termed general-purpose, straight, plain vanilla or bullet bonds – the latter denotation indicates that there are no additional or specific features attached to the liability (Wiśniewski, 2018).

¹ As used in this handbook, a sustainable bond denotes a collective term for one or all of typical use of proceeds financial instruments that are labelled “green” or “environmental”, “social” or “sustainability” in terms of market accepted practices for these labels.

A sustainable bond is defined as a bond issued to raise capital to specifically support environmental and/or social projects. In other words, it is not a general-use bond, but one where the bond covenant stipulates on what the principal can be spent. Sustainable bonds issued by cities and municipalities are generally termed "municipal sustainability bonds".

Proceeds raised through sustainable bonds are used specifically for a particular type of project or desired outcome. There are some umbrella terms applied, such as green bonds (for financing projects, assets and activities that have materially positive environmental outcomes and impacts), social bonds (for financing projects, assets and activities that have material positive social outcomes and impacts) and sustainability bonds (denoting a combination of environmental and social benefits). There are examples of other practices and developments in naming conventions for bonds that advance particular objectives, such as transition bonds, renewable energy bonds, water bonds etc.

There are international sustainable bond standards and supporting frameworks that are now widely used and accepted that represent investor and market expectations and express good practice for raising such bonds, using and managing the proceeds, and reporting to investors on the financing activities and impacts of these types of bonds. When an issuer labels its bond as green, social or sustainable, it is generally expected that the issuer has adopted one of these international standards. In South Africa, if the sustainable bond is listed on the JSE's sustainability segment, it is a regulatory requirement to adopt and comply to such standards.

IDENTIFYING POTENTIAL PROJECTS FOR MUNICIPAL SUSTAINABLE USE OF PROCEEDS BONDS

In South Africa, municipal investment processes follow a long-term capital improvement plan outlined in the municipality's integrated development plan or built environment performance plan. The integrated development plan is drafted every five years and covers functional and institutional planning, including the municipal spatial development framework. These planning frameworks are critical in identifying projects and securing funding for catalytic projects and priority interventions (Cities Support Programme, 2018).

These planning frameworks also feed into an annual municipal financial management cycle characterized by planning, budgeting, implementation, monitoring and evaluation and expressed in the municipality's medium-term revenue and expenditure framework and annual reporting. [Figure ES.1](#) provides a high-level depiction of how the municipal management cycle overlays with international standards. The capital budgeting process outcomes, particularly for bulk infrastructure, can warrant external sources of funding.

Sustainable bonds are part of the external funding mechanism, which is a relatively expensive way of financing capital budgets and is typically earmarked for long-term capital items or assets, and may have other benefits and challenges to be evaluated. It follows that types of projects more appropriate for South African municipal sustainable bonds may be long-term capital items or public assets.

When pursuing a sustainable bond, municipal planning needs to integrate sustainability response strategies and commitments into its integrated development plans as a crucial step for project evaluation. Ideally, the municipal capital budget should include approved long-term projects or assets with positive economic, environmental and/or social benefits (a sustainability project portfolio). Municipalities must have a robust financial planning and management process; in relation to sustainable bonds, this should extend to having well-defined, identifiable green projects before going to the debt market.

THE ISSUANCE AND MANAGEMENT PROCESS

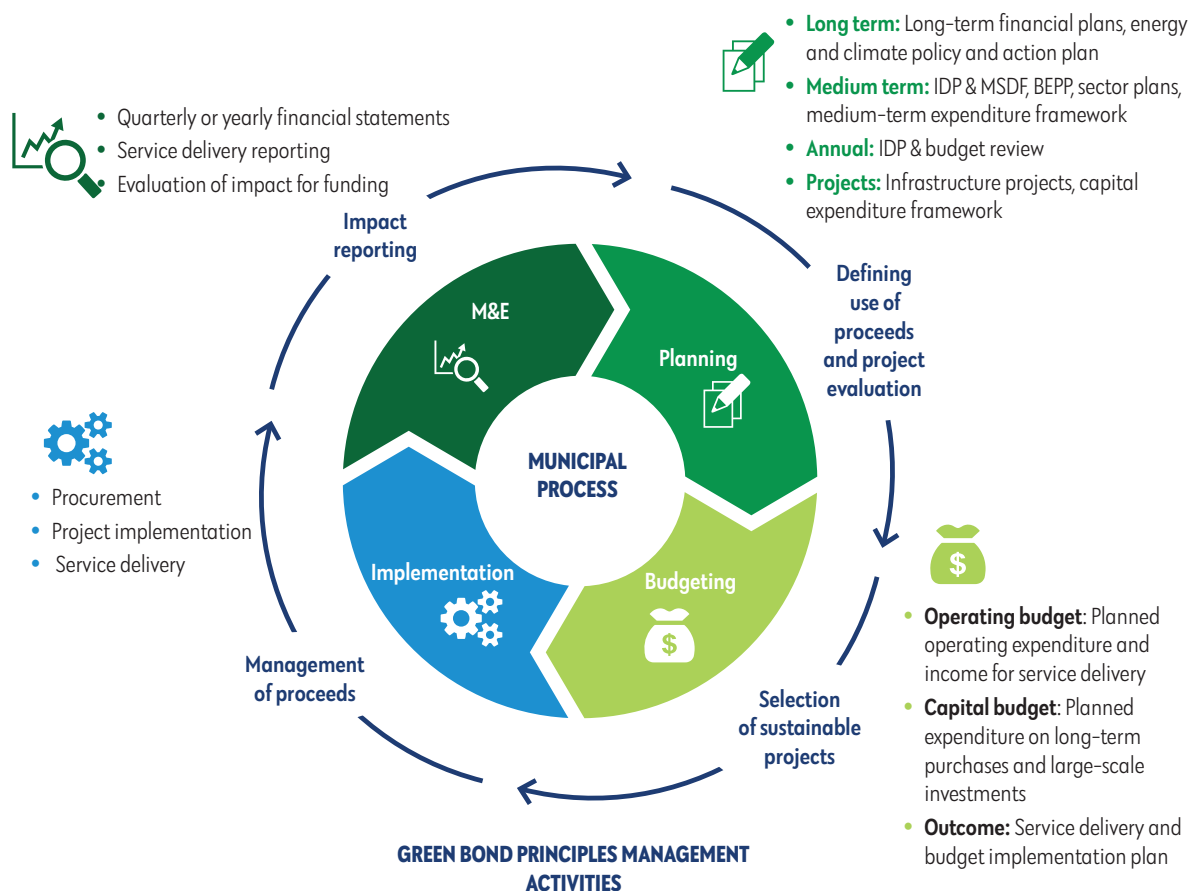
Embarking on the process of municipal sustainable bond issuance requires the municipality to dedicate resources to configuring and implementing the necessary direct and supportive processes and systems and building capabilities and capacity, for a robust, well-managed issuance.

[Figure ES.2](#) outlines the sequence of activities for municipal sustainable bonds, each of which is detailed extensively in this handbook.

OPPORTUNITIES, BENEFITS AND CHALLENGES ASSOCIATED WITH MUNICIPAL SUSTAINABLE BONDS

Before a municipality issues a municipal sustainable bond, it is useful to do the following:

Figure ES.1 **Municipal Financial Management Cycle and ICMA Green Bond Principles Management Activities**



- Consider the opportunities and challenges associated with the debt instrument in general.
- Understand how sustainable bonds may be positioned within established municipal functions, governance procedures and operations, and within existing regulatory and mandate specifications. Ideally, management processes can be extended or evolved to accommodate sustainable bonds.

The municipality should also note the following:

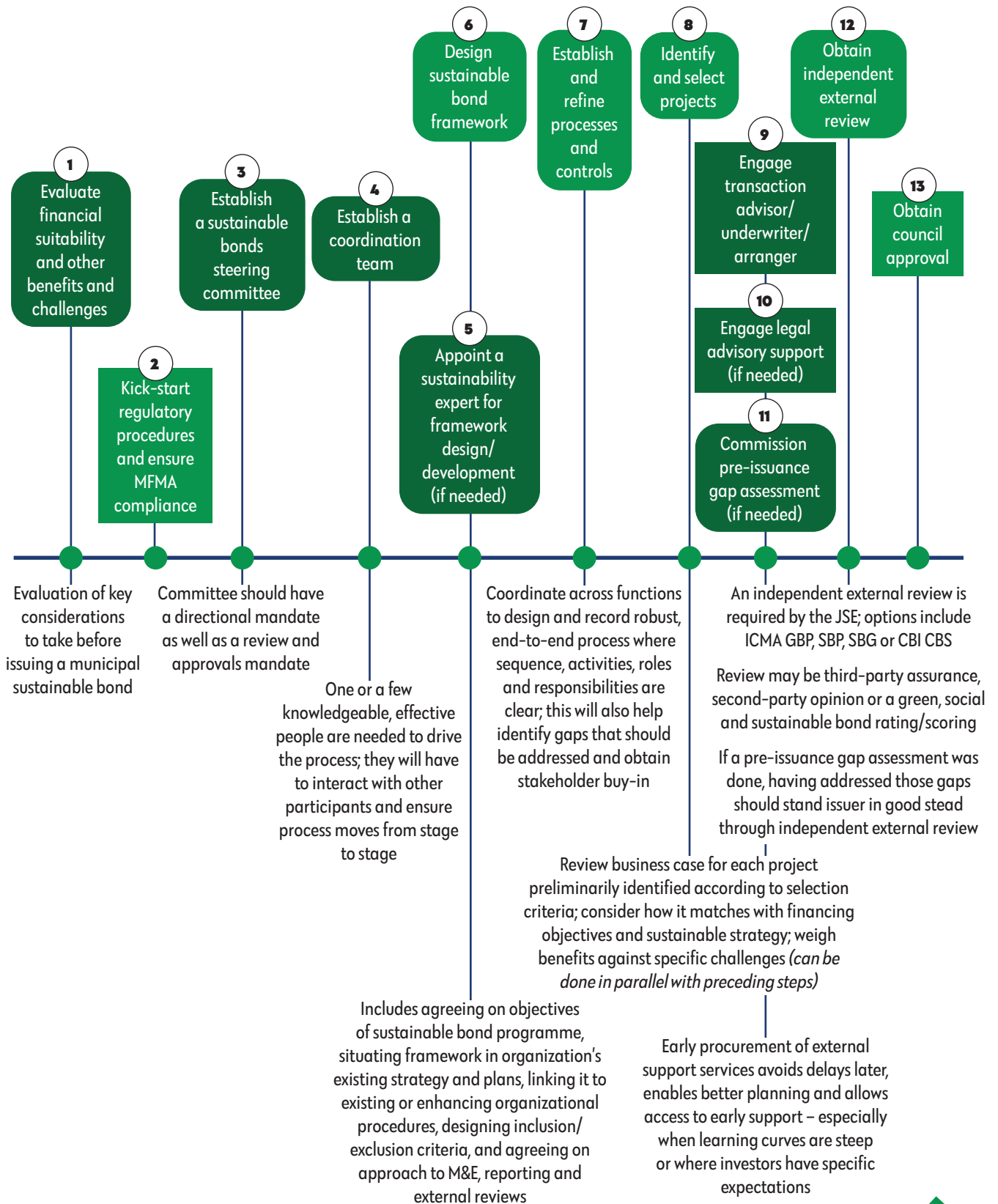
- Many of the typical disadvantages of traditional municipal bonds and long-term municipal debt also apply to sustainable bonds, because the foundations of the instruments are the same.
- Many of the advantages and disadvantages of sustainable bonds for non-municipal actors similarly apply to municipalities, because the instrument opens up a realm of sustainability considerations both opportune and challenging for those undertaking a new approach and integrating environmental,

social and governance considerations into financing and investment decision-making.

Figure ES.3 summarizes the main opportunities and challenges identified with municipal sustainable bonds. The balance of benefits and challenges must be studied and considered in detail by a municipality considering the instrument.

Municipal financial planning processes must evaluate costs of capital and the appropriateness of financing instruments, including if embarking on a potential municipal sustainable bond issuance. Note that the opportunities and challenges associated with municipal sustainable bonds are subject to a wide variety of factors, including financial market conditions; institutional structures and the capacities of the issuing municipality; the financial state of municipality, including its creditworthiness as expressed by its credit rating (Goebel, 2017); the type of projects to be funded; the strength of investor relations; and, to a lesser degree,

Figure ES.2 Outline of Suggested Sustainable Bond Issuance Process



- Optional/recommended based on need
- (Square-edge boxes) Same as for vanilla bond issuance

Pre-issuance

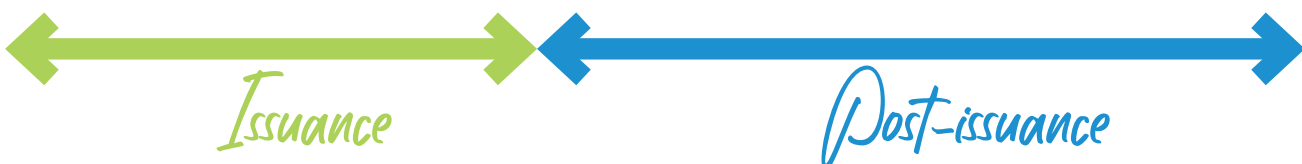
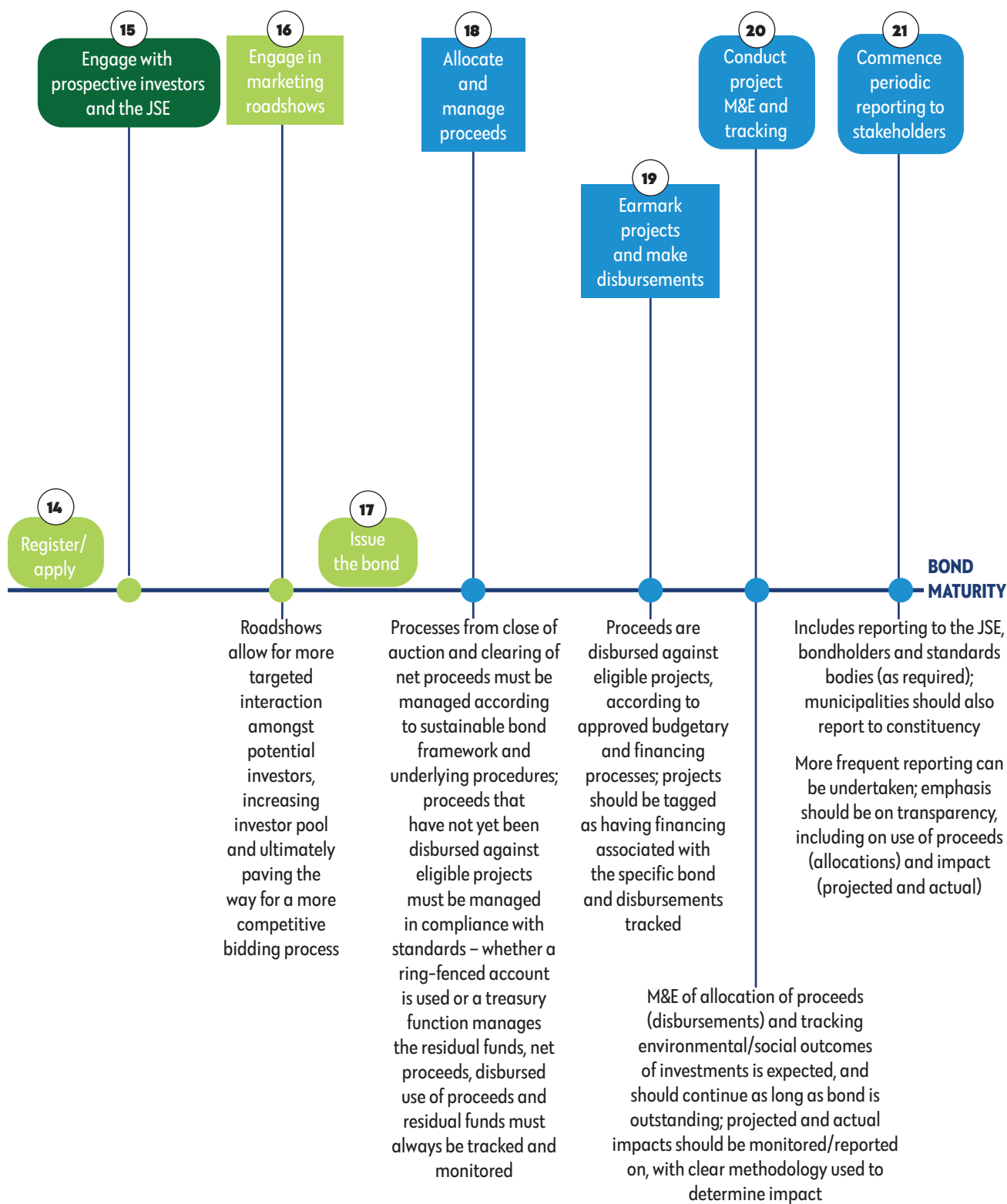
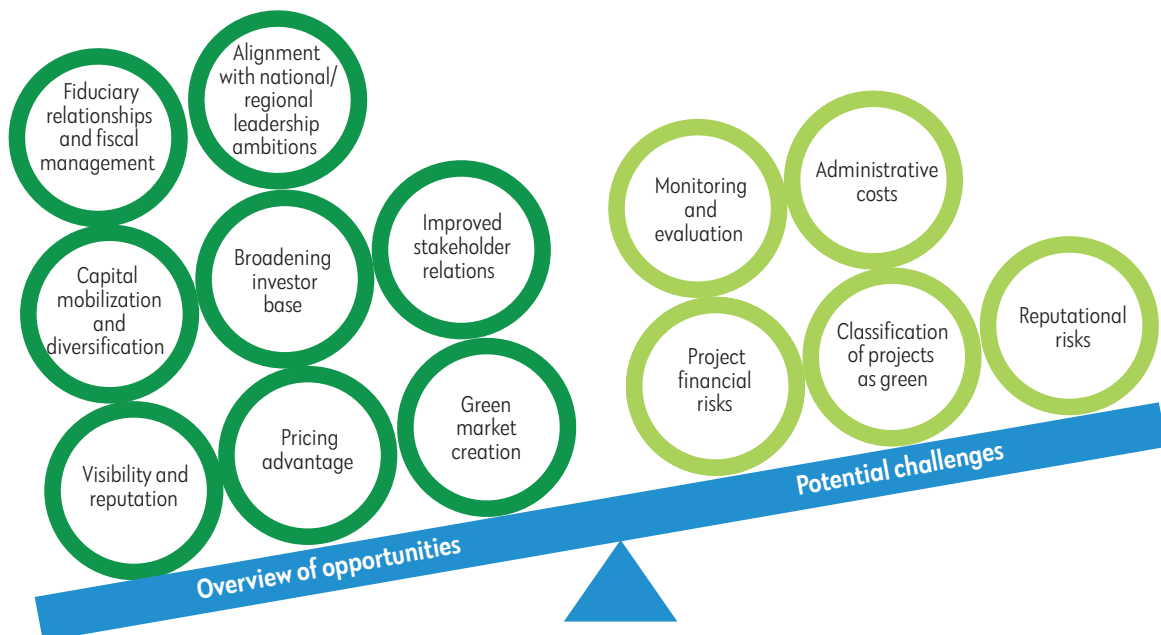


Figure ES.3 Overview of Opportunities and Potential Challenges of Sustainable Bond Issuance



the communications strategy around sustainability matters, governance and the issuance in particular.

In issuing a sustainable bond, there are initial costs (e.g. development of the issuer framework, establishment of monitoring and evaluation processes, external review provider services), and resourcing effort needed. These are typically one-off costs that should be factored into consideration of the financial instrument. However, these costs should be weighed against the potential financial and non-financial benefits that may be accessed.

While sustainable bonds may not demonstrate clear pricing benefits compared to vanilla options, they can have positive reputational and organizational impacts that go well beyond the immediate coupon rate.

In a world of a constrained public sector finances sustainable bonds may have a role to play in accessing a wider investor base and attracting private capital and foreign direct investment to a country. Once the underlying procedural elements and framework are in place, sustainable bonds can be used regularly and repeatedly, as the appropriate fiscal needs and project pipeline arises.

Sustainable bond issuance entails many different functions and operations that must work together in a

coordinated fashion. The municipal sustainable bond framework that must be developed to accompany a sustainability issuance operates as the overarching guiding procedural and communications tool, both inside the municipality and externally for investors and other stakeholders.

Developing the capabilities to manage municipal sustainable bonds may help create a platform for further sustainable finance opportunities, and boost public commitment to change the way in which a municipality finances, invests and serves its stakeholders.

Undertaking a sustainable bond has the potential to evolve an organization's approach to sustainability and climate action, helping to integrate these challenges more closely into the fabric and functions of an organization. Beyond investor expectations, effective monitoring and evaluation by municipalities could be an important driver for sustainability in municipal operations; reporting on these impacts to other stakeholders could strengthen their social licence to operate. Even if a municipality does not use this type of instrument regularly or at all, better organizational cooperation around sustainability issues can have significant and far-reaching benefits.

Purpose of This Handbook

This handbook is aimed at South African municipalities considering the issuance of sustainable bonds. **Sustainable bonds**, as used in this handbook, is a collective term for one or all typical use of proceeds financial instruments that are labelled “green”, “environmental”, “social” or “sustainability” in terms of market-accepted practices for these labels. In other words, “sustainable bonds” is used here as convenient shorthand for “green, social and/or sustainability bond” throughout. If the municipality does not have an existing **Domestic Medium-Term Note Programme** for issuing bonds on the Johannesburg Stock Exchange, establishment of such a programme will need to be explored in addition to evaluating the appropriateness of sustainable bond issuance.

The handbook sets out **detailed, accessible, practical steps involved in sustainable bonds issuance** and discusses the associated tasks and activities so as to provide South African municipalities with a comprehensive view of the process entailed in the preparation, issuance and management of a sustainable bond.

The handbook seeks to explore key elements of the instrument and to provide **balanced information** so South African municipalities – and others – can determine whether a sustainable bond is a suitable tool for their organization.

The handbook also contains **introductory material concerning sustainable bonds**, so readers can familiarize themselves with the terminology, context, purpose and considerations related to these instruments.

The handbook consists of four sections:

- **Section 1:** A **context-setting introduction** that provides an overview of South Africa’s socio-economic challenges, municipal financing and sustainable finance, particularly sustainable bond market development;

- **Section 2:** An introduction to the **sustainable bonds ecosystem in South Africa**, including an introduction to the actors involved in the sustainable bond process;
- **Section 3:** Detailed guidance on issuing a sustainable bond, featuring a **step-by step walk-through** of the process and detailed practical recommendations for the activities, processes and expectations involved with the end-to-end process of preparing for, issuing and managing a sustainable bond; and
- **Section 4:** **Cases studies** highlighting recent enactments of sustainable bonds in Cape Town and Mexico City.

The material is supplemented with lists of suggested core environmental impact indicators (**Appendix A**) and sustainability impact indicator identification tools (**Appendix B**), as well as a hyperlinked list of pertinent legislation and regulations (**Appendix C**) and a comprehensive **glossary**.

The guidance on issuing a sustainable bond provided in Section 3 is organized into three parts:

- **Pre-issuance phase**, covering all the considerations and activities that would apply before going to market to auction the sustainable bond;
- **Launch phase and issuance**, describing the activities at the juncture of going to auction and the initial processes when capital is raised; and
- **Post-issuance phase**, covering the subsequent and ongoing activities and considerations during the tenor of the sustainable bond.

Some of the guidance and recommendations provided here – notably that concerning implementation of sound sustainability management, governance and management of pipeline development, project selection, impact assessment and reporting – are applicable good practice for **any organization looking to enhance the sustainable dimension of their investments**.



1. Context and Background



1.1 South Africa's Socioeconomic Challenges

South Africa's economy is characterized by high levels of unemployment, poverty and inequality; low quality of education, especially for impoverished and disadvantaged South Africans; deficient infrastructure, public health systems and public services; corruption; a lack of social cohesion; and a resource-intensive and environmentally unsustainable growth path – **all serving to impede the country's progress towards an inclusive and prosperous society** (NBI and Carbon Trust, 2020).

At the same time, South Africa faces several **urgent socioeconomic transformation and development challenges in the coming decades**, not least the need to ensure a sustainable and secure energy and water supply; sustain ecological integrity; meet infrastructure maintenance, renewal and expansion needs; and respond to bulk service delivery requirements that will entail sizeable investment (Stats SA, 2019), with significant positive sustainable development impacts.

South Africa's National Development Plan 2030 (NPC, 2012) identifies the national "development lodestar and roadmap", defining **nine focus areas for development** (summarized in [Figure 1.1](#)) that dovetail substantially

with the United Nations Sustainable Development Goals (SDGs).

Inseparable from the development imperative, **climate change poses a significant risk** to South Africa's development gains, exacerbating existing national challenges. Climate change impacts threaten to undermine the country's progress since the World Summit on Sustainable Development was held in Johannesburg in 2002 to advance the Millennium Development Goals and subsequent efforts to achieve the SDGs (NBI and Carbon Trust, 2020).

Evidence shows that if economic plans are formulated as **inclusive and green**, South Africa could benefit from several strategic benefits, including, but not limited to, access to additional international funding, access to cheaper funding, a positive jobs impact, and long-term economic prosperity. This approach also mitigates climate change-related transition risks and enhances competitiveness (NBI and BCG, 2020).

The South African national government has identified **meaningful infrastructure development** amongst its top investment priorities to strengthen the economy and move closer to achieving the goals of National Development Plan 2030. In that vein, the 25-year horizon National Infrastructure Plan 2045 currently under development is intended to ensure that

Figure 1.1 South Africa's Development Focus Areas According to the National Development Plan 2030



innovation, skills development, climate change and the green economy are integrated into the strategy and action plan (SIDSSA, 2020).

Alongside infrastructure development, there is also a critical need to adopt **business and economic models that prioritize inclusive, equitable, green economic outcomes**, especially in the face of climate change risks and economic transition.

South Africa's **Nationally Determined Contribution (NDC)** to the Paris Agreement recognizes the cost of climate change impacts to South Africa's economy and the imperative to participate in the global effort to mitigate and adapt. The World Bank estimates that \$1.38 trillion is needed for South Africa's climate mitigation actions, and \$308 billion is needed for climate adaptation in South Africa (UNEP, 2018). Similarly, the International Finance Corporation (IFC) estimates that the investment opportunity for climate business in South Africa is approximately \$558 billion to 2030 (NBI and Carbon Trust, 2020). This includes investments in renewable energy, transportation, energy efficiency, waste management and green buildings. Such investments will give a tremendous boost to job creation and economic growth, while contributing to greater economic and climate resilience (UNEP, 2018). The NDC indicates that a key challenge for South Africa is to catalyse, at an economy-wide scale, financing of and investment in the **transition to a low-carbon and climate-resilient economy** (Republic of South Africa, 2021).

There is an urgent need for all parts of society, including all levels of government, to be proactive in addressing climate change mitigation and building resilience. These challenges are closely connected to many other sustainable development imperatives for South Africa. However, an **effective response to climate change will make for far-reaching contributions** to other urgent national environmental and social impact objectives and the development of a low-carbon, resilient, equitable and sustainable economy.

1.2 Municipal Financing and Sustainable Development

1.2.1 The Intersection of Climate Change and Service Delivery

According to the [South African Constitution](#),¹ the **role of municipalities** is to mobilize economic resources towards the improvement of the lives of all citizens. Municipalities are therefore tasked with a mandate to provide basic services and foster development in the regions they control.

As South African municipalities and the national government aim to address sustainable development challenges, there is growing recognition of the strain climate change places on the built environment, municipal assets and – ultimately – service delivery (DEA, 2011). Without **appropriate adaptation measures**, the effects of climate change may undermine current development efforts, affect service delivery planning and impact local livelihoods.

Given their developmental mandate, is it important for municipalities to adopt **green economy principles**, which include decoupling infrastructure development and improved service delivery from environmental impacts and increased greenhouse gas emissions.

1.2.2 Climate Change Adaptation and Mitigation Focus Areas and Activities

To achieve the SDGs and South Africa's national climate and sustainability ambitions, the South African national and local governments are central actors in unlocking funding for sustainable projects.

On a **local government level**, South African municipalities are starting to move towards models that distinctly integrate and advance natural and social capital performance indicators, through implementation of more sustainable projects.

¹ All legislation and regulations cited in this handbook are listed in [Appendix C](#).

Leading municipalities are increasingly implementing growth and development strategies that display **proactivity and planning towards sustainable cities** (South African Cities Network, 2017). In 1993, ICLEI-Local Governments for Sustainability initiated the Cities for Climate Protection programme, a global municipal network aimed at reducing urban greenhouse gas emissions, improving air quality, and enhancing urban liveability and sustainability. The programme advanced the sustainability agenda significantly, and a number of South African municipalities are subsequently developing policies and strategies for transitioning to low-carbon and resource-efficient cities. Since then, metropolises and other municipalities have continued to integrate sustainability goals into their policies and strategies with the continued support of national government.

Arguably, the **green economy sector that is most easily recognized is energy**, covering renewable energy technologies and energy efficiency applications. Large-scale and decentralized energy systems have received significant focus and development progress by municipalities, despite challenges in the national energy regulatory regimes. South African municipalities have been paving the way to implement climate resilience and adaptation into their development plans and strategies in other sectors as well. A key example is the **water sector**, where the growing realization of the imminent threat of water scarcity in several regions has led municipalities to seek to increase access to sanitation services, as well as increase drought resilience.

To further understanding of climate change adaptation needs on a local scale and under the National Adaptation Planning process, South Africa's national government – with the support of Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) – developed the **Let's Respond Toolkit** to provide municipal stakeholders with information, tools and guidelines to **respond to climate change in local-level planning processes** (Dazé, 2017). The toolkit enables municipal-level vulnerability assessment and response planning, and sets out different climate change impacts and potential responses.

At the intersection of ecosystems and adaptation needs, experts have highlighted the need to **implement ecosystem-based adaptation strategies** which involve

investing in the management, restoration and rehabilitation of ecosystems – and which ultimately contribute to climate resilience and the reduction of greenhouse gas emissions (SANBI, 2021). Such measures are especially important where increasing frequency of extreme weather events, coupled with disruptive resource extraction practices and inefficient land use, threaten South Africa's natural capital. Some of South Africa's municipalities have recognized the intrinsic value of these ecosystems and their relevance in building climate resilience, undertaking rehabilitation and restoration projects in line with South Africa's National Biodiversity Strategy and Action Plan (DEA, 2014).

The development of environmentally oriented projects and activities in these and similar thematic and focus areas could be suitable for **sustainable finance instruments, including municipal sustainable bonds**. Furthermore, projects emanating from municipal climate change, energy, transport, waste (circularity) and water resource management strategies; from climate action plans and climate resilience plans; and from spatial planning and development strategies that seek to protect and restore ecosystems and natural capital may all lend themselves to sustainable finance opportunities.

1.2.3 Municipal Finance and Debt Instruments

To finance municipal capital projects, municipalities make use of a variety of **financing mechanisms**, some of which are set out in [Table 1.1](#). Sustainable finance innovations continue to be developed, as new combinations of financing mechanisms, new approaches and new partners are combined to address development needs.

Whilst South African municipalities utilize various debt instruments, municipalities are often hesitant to engage in long-term debt, even when a significant pipeline of capital projects require such financing (National Treasury, 2020a).

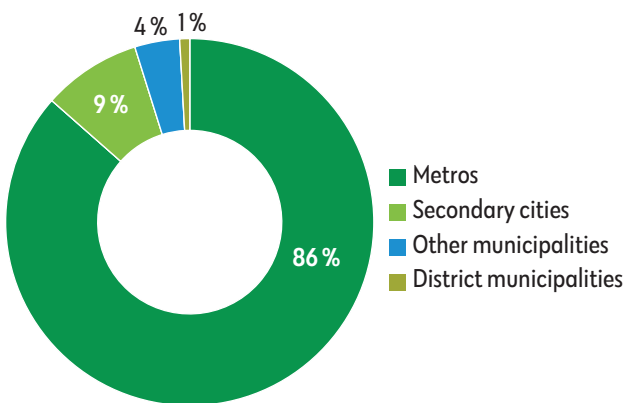
As highlighted in [Figure 1.2](#), 86 per cent of total outstanding long-term debt exposure at the local government level is incurred by metropolitan areas; with only 14 per cent incurred by secondary cities, other municipalities and district municipalities. According to the *2020 Municipal Borrowing Bulletin*, only 97 of 257

Table 1.1 Summary of Municipal Financing Mechanisms

Financing mechanism	Description
External funding	Financing that comes from an entity outside the municipality such as the national government, donor organizations or commercial banks. Examples of external funding mechanisms include but are not limited to municipal bonds, grants, bank loans and other debt instruments .
Internal funding	Financing from municipal funds generated by municipal rates base, user charges and other municipality revenue streams .
Incentives and regulations	Utilization of incentives and regulations to encourage investment by the public or businesses in sustainable initiatives and to promote sustainable practices. Examples of such incentives include tax reductions, rebates on municipal bills and non-mandatory restructured tariffs (e.g. green energy certificates) that include a portion for funding sustainable municipal projects.
Partnerships	Partnering with the private sector in the form of either utility purchase agreements (either for water or energy) or wheeling arrangements to finance sustainable municipal projects.

Source: SALGA (2014).

Figure 1.2 Distribution of Long-Term Debt amongst Different Municipality Groups



Source: National Treasury (2020a).

municipalities are engaged in long-term borrowing (debt tenor of above 10 years), with the Western Cape containing the majority of local municipalities that are engaged in long-term borrowing: 21 out of 24 local municipalities (National Treasury, 2020a).

Experts have theorized that this **lack of engagement in long-term borrowing** is partly due to poor financial management, a lack of structures to demonstrate the creditworthiness required by lending entities, and challenges in long-term debt compared with municipal planning horizons. However, the municipalities themselves indicate a preference for the flexibility that other instruments provide and cite challenges with

the administrative burden and complexity of covenants that might come with long-term borrowings. The **ability and appetite for a municipality to undertake such long-term borrowing is inherent to its ability to undertake a municipal bond**, be it sustainable or “vanilla”.

1.2.4 Bonds as a Financial Instrument for Municipalities

In simple terms, **a bond is a loan given to an organization by an investor, with fixed interest and a repayment schedule**. When issuing a bond, the bond issuer borrows money from investors that, in return, are paid interest on the money they have loaned at specified intervals. This is the simplest type of bond; of course, there are variations on this with added complexity.

Companies and governments frequently issue bonds to fund projects or ongoing expenses. Investors in bonds (or **bondholders**) become creditors of the issuing entity (or the **issuer**). The investors are paid a fixed interest rate (also termed a **coupon rate** or **yield**) and returned their initial investment (**principal**) upon maturity (at the end of the pre-agreed duration of the loan, i.e. the end of the bond **tenor**). It is also possible for the interest and capital to be repaid in **tranches** (intermediate intervals) during the tenor. Because bonds typically pay a fixed interest over the maturity period, they are often referred to as **fixed-income debt securities**.

Once purchased from the issuer (through financial institutions acting as intermediaries and acting on the **primary market**), bonds can continue to be traded in the securities market (or the **secondary market**, i.e. the bond coupons can be resold by the initial investor) (World Bank Treasury, 2015).

Typically, bonds have a **tenor longer than three years**. This is in comparison to a note, which functions similarly, but is typically of short duration (one year to maturity) and used for bridge financing.

Bonds are aligned to projects that require long tenors, for example, infrastructure development which may take a long time to secure all approvals, close on financing, construct, and operate with a view to begin yielding revenues to support return on the investment. **Alternative financial structures** could also be developed to match bonds to projects with shorter financing time frames – for example, if a revolving project debt facility were to be capitalized by a bond.

A bond issued by a local or district municipality, a city, or a municipal entity such as a water board to finance its activities is commonly referred to as a **municipal bond**. Because of the status of the issuer (i.e. a municipality, which has a public mandate and that must fulfil functions, rules and processes), a municipal bond has **characteristics that are unique** among other entity bonds. These include both specific objectives that a bond must relate to, and challenges of municipal functioning that will apply equally to any type of municipal financing.

The following factors must be considered when evaluating the option to issue a municipal sustainable bond (SALGA, 2018).

- **Economic and social development and planning.** The issuance of a municipal bond should be part of a broader and consistent socioeconomic plan by the municipality, and is likely to be one of several instruments employed within a municipal budget.
- **Social cohesion.** The effectiveness of infrastructure funding and delivery may be highly correlated with the degree of social cohesion in the respective municipality.
- **Positive externalities.** A major task of local government is to provide those goods to the community

that generate significant positive externalities, which is typically the case for infrastructure, but also the projects and services municipalities provide. Because of the nature of public goods, capturing the value of the externalities for the infrastructure and services provided may need alternative approaches, because only some will generate direct or sufficient revenue.

- **Public participation.** According to democratic principles, a municipal entity needs to integrate the community into its decision-making. The process may thus diverge in form, content and speed from the expectations of a bond market. The process for participation and approvals is discussed further in this handbook. The decision-making around bonds is integral to council approvals; close coordination of council approvals and market engagement is needed for bonds.
- **Intergovernmental financial transfers (grants).** If other spheres of government also benefit from municipal infrastructure delivery, it seems justifiable they contribute to cost recovery; this may influence the approach to financing arrangements. However, different challenges and risks may arise to be managed and coordinated.

1.3 Defining Sustainable Finance

Multidisciplinary and innovative approaches to increasing funding and diversifying sources of funding will be needed by municipalities for green infrastructure, economic activities and projects.

Sustainable finance will play an important role, with at least two notable dimensions. The first dimension concerns the **application of capital**; the second **how financing decisions** are made to drive the needed economic shift².

- **Financing green.** Mobilize capital for green and low-carbon investments in the broader context of environmentally sustainable development.

² Source: Network for Greening the Financial System (<https://www.ngfs.net/en>).

- **Green finance.** Integrate sustainability into the decision-making processes, specifically:
 - Integrate **risk-related aspects of sustainability considerations** into decisions;
 - Integrate **assessment of an asset, project or activity** in terms of its alignment to sustainable, social and environmental objectives; its **contribution to sustainability**, and therefore the potential positive performance of that asset, project or activity compared to an alternative.

As a broad societal need, it is important that the way in which planning, investment and procurement decision-making practices occur change across the public and private sectors to channel activities away from suboptimal or detrimental value and impact outcomes and to **include climate resilience and climate justice as core objectives**.

Sustainable bonds are a form of sustainable finance and are one of the many tools that could be applied as an instrument to attract investors and ensure that capital is channelled to deliver South Africa's sustainable development needs and support a green economic recovery. The key to such instruments is the explicit connection between the label applied to the capital ("green", "social" etc.) and the use of that capital specifically for sustainable activities, projects and assets which should, by implication, advance the SDGs.

1.4 Overview of Sustainable Bond Market Development

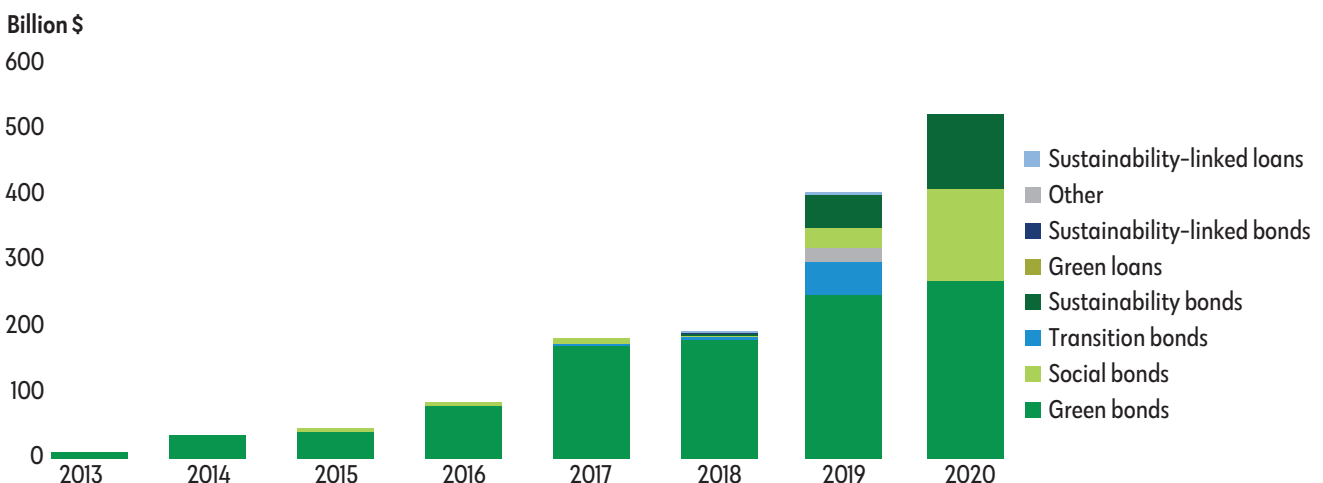
Even though they are a relatively young type of security, green bonds have been noted as potentially **the most popular type of climate-friendly financing instrument** to date (Brand and Steinbrecher, 2019). Compared with conventional bonds, green bonds remain a niche market. Nonetheless, they are already widespread internationally and growing in significance.

The very first green bond was issued by the European Investment Bank in 2007. The market has grown substantially since then; by 2020, the sustainable bond and green loans market had exceeded \$500 billion (CBI, 2019a). [Figure 1.3](#) illustrates this rise in sustainable debt instruments issued globally between 2013 and 2020, and highlights the recent increases in sustainability and transition bonds.

To date, the green bond category remains dominant. More recently, sustainability bond issuances have increased significantly, many of these focusing on disaster management and supporting employment and small and medium-sized enterprises (Environmental Finance, 2021).

There has been **diversity in the types of issuers**, with the largest volumes from financial institutions and corporates. It would seem that municipal sustainable bonds

Figure 1.3 **Annual Issuance in Sustainable Debt, 2013–2020**



Source: Adapted from Environmental Finance (2021) and *The Economist* (2020).

in this area are predominantly labelled sustainability bonds, as shown in [Figure 1.4](#).

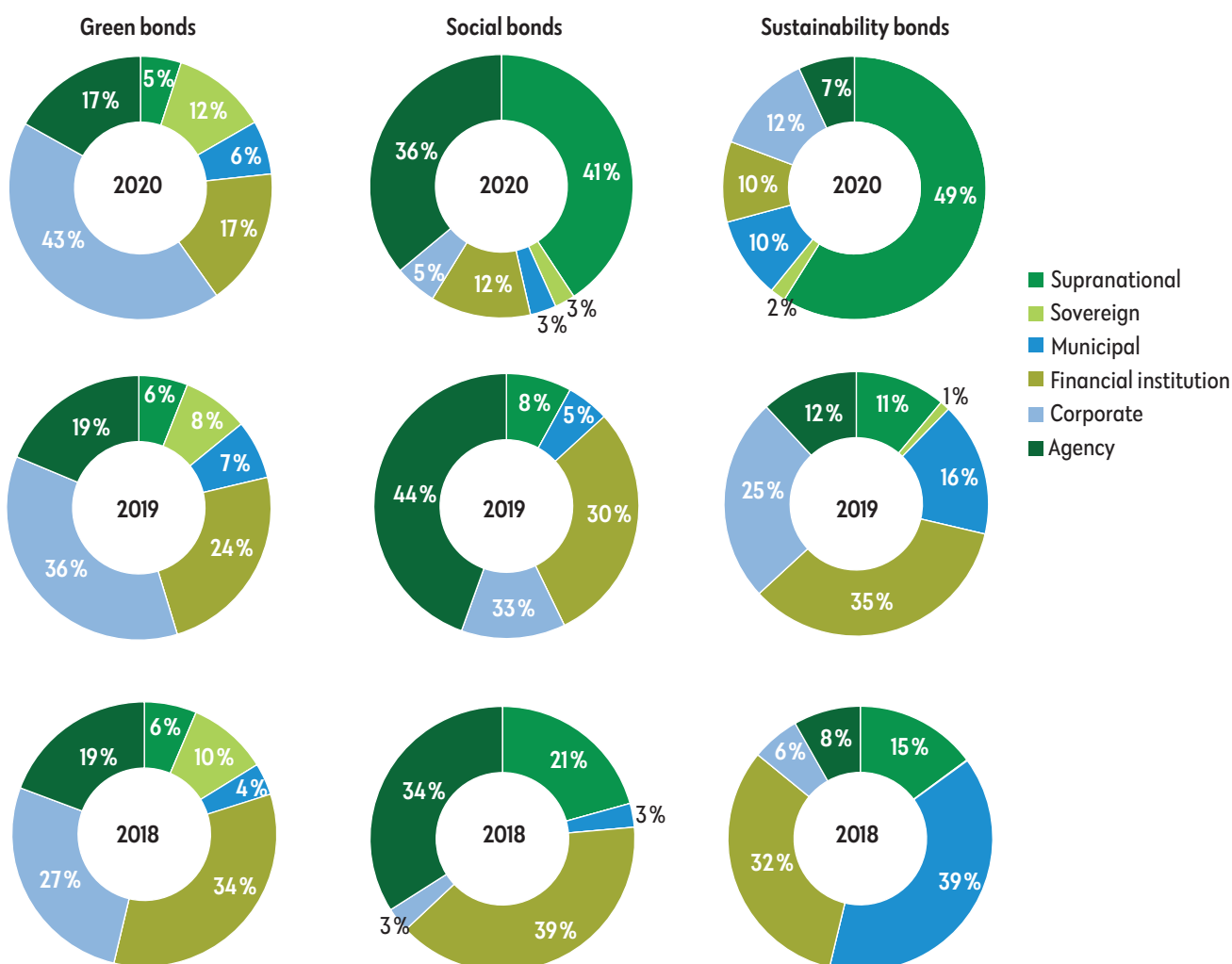
Whilst the number of sustainable bond issuances in South Africa has been relatively limited when compared to international activity, there is growing interest and preparatory activity in the domestic market. The City of Johannesburg green bond (2010) and the City of Cape Town inaugural green bond (2017–2018) are notable examples.

South Africa is one of a relatively few African countries that has been active in the green bond market, with the

others being Egypt, Kenya, Morocco and Nigeria. All of these countries are looking to benefit from green bonds and take advantage of this form of finance which brings resources from both the public and private sectors.

In 2014, the Johannesburg Stock Exchange (JSE) became the first African exchange to launch a **green bond segment and green listing rules**, helping to promote further green bond issuances. In 2020, the JSE evolved its green bond segment to a sustainability bond segment, providing a more encompassing platform to enable sustainable finance.

Figure 1.4 **Relative Market Size of Bond Issuances for 2018, 2019 and 2020 by Issuer Type for Green, Social and Sustainability Bonds**



Source: Environmental Finance (2021).



2. *About Sustainable Bonds*



This section introduces municipal sustainable bonds; this includes highlighting the associated key concepts, introducing the key actors in the bonds issuance process and describing the South African enabling environment for bonds issuance.

2.1 Key Concepts

2.1.1 Types of Bonds

A bond is structured according to recourse to the issuer for repayment. As the market has grown more accustomed to sustainable bonds, international standard setters have expanded the list of types of bonds covered by the standards. [Table 2.1](#) introduces these types.

The vast majority of green bonds issued to date globally have been **standard use of proceeds bonds**; this includes the City of Cape Town’s inaugural green bond.

The **selection of a particular bond structure and recourse** is a matter for detailed financial management

consideration, alongside consideration of the objective of the bond (general or specific) and the nature of underlying assets, projects or activities to be financed (whether these are capital items, and whether these have a certainty of revenue generation).

There are also **technology, finance and credit risks** that will play a critical role in these financial design decisions, as well as limitations and requirements placed on the municipality by the [Local Government: Municipal Finance Management Act \(MFMA\) 56 of 2003](#) and requirements for debt disclosure.

2.1.2 Different Sustainable Use of Proceeds Bonds

2.1.2.1 Green Bonds

A green bond is defined as a bond issued to raise capital to specifically support a combination of both environmental and social projects. It is not a “free use” bond, but one where the bond covenant stipulates on what the principal can be spent. The following basic

Table 2.1 Covered Sustainable Bond Types

Type	Recourse and proceeds raised by bond sale
General obligation or standard use of proceeds bond	A standard recourse-to-the-issuer debt obligation which is either listed or unlisted. Proceeds are earmarked for specific eligible underlying green projects; new projects may be introduced into a portfolio and projects removed from a portfolio.
Revenue bond	A non-recourse-to-the-issuer debt obligation , either listed or unlisted, in which the credit exposure in the bond is to the pledged cash flows of revenue streams, fees, taxes etc. The proceeds go to related or unrelated projects, but are always earmarked for identified specific underlying green projects.
Project bond	A project bond, either listed or unlisted, for single or multiple projects for which the investor has direct exposure to the risk of the projects with or without potential recourse to the issuer. Proceeds are ring-fenced for the specific underlying green project(s), typically infrastructure projects.
Securitized bond	A bond, either listed or unlisted, collateralized by one or more specific projects or assets , including lease, loan and other revenue receivables, asset-backed securities, mortgage-backed securities (MBS; including agency MBS, residential MBS, commercial MBS), collateralized loan obligations, collateralized debt obligations, whole business securitization and other securitization structures. Proceeds are either earmarked for green projects or go directly into the underlying green projects.

Source: CBI (2015) and ICMA (2021a).

Note: There are also a variety of options for sustainable standards concerning sustainable loans, which are not covered by this handbook. Similarly, this handbook does not address sukuk or convertible bonds for the purposes of South African municipalities.

concepts apply to the definition and practice of green bonds (ICMA, 2021a):

- Green bonds are **labelled as green by their issuer** (i.e. it is primarily the issuer that makes this connection and identifies the bond in its correspondence and market interactions as green).
- The capital (or proceeds) raised from a green bond's issuance is **earmarked** (i.e. specified as being for a particular purpose) **for green investments** (the use of proceeds).
- The issuer tracks and reports on the use of the proceeds, **ensuring green compliance** – i.e. that projects, assets and activities funded with the financing raised, are in fact directly realizing or supporting environmentally friendly outcomes and impacts.

Figure 2.1 provides a simple illustration of the market interactions and flow of value in a green bond.

In differentiating between sustainable bonds and “normal” bonds – often termed general-purpose, straight, plain vanilla or bullet bonds – the latter denotation indicates that there are no additional or specific features attached to the liability (Wiśniewski, 2018).

2.1.2.2 Sustainability and Other Themed Bonds

Bonds can also be applied thematically, i.e. the proceeds raised can be used specifically for a particular type of project or desired outcome. There are some umbrella terms applied in addition to green bonds:

- **Social bonds** are much like green bonds, but are specific to financing projects, assets and activities

that have material positive social outcomes and impacts. For example, bonds are used specifically for small and medium-sized enterprise (SME) financing, low-cost housing, and education (Tarrant, 2020).

- **Sustainability bonds** denote the financing of projects, assets and activities that have both material environmental and social benefits, or include a portfolio (grouping) of projects, assets and activities that each have social and/or environmental benefits.

There are other practices and developments in the naming conventions for bonds that advance particular objectives (Figure 2.2), for example:

- **Climate bonds** are considered a subset of green bonds, with projects specifically targeting climate change mitigation and/or adaptation.
- **Transition bonds** relate to financing that targets capital projects that are lower-carbon performance than other general technology alternatives, or capital projects that introduce technologies that reduce carbon emissions from high- or intense-carbon emissions sources.
- **Renewable energy bonds**, like the domestic green bonds issued by Nedbank in 2018 and 2019, finance or refinance renewable energy projects exclusively.
- **Blue bonds or water bonds** denote bonds for which the proceeds raised are used specifically for ocean protection and environmentally compatible ocean economy development (e.g. the World Bank's Seychelles blue bond) or water, sanitation and hygiene (WASH) infrastructure or projects, for instance.

Figure 2.1 Simplified Green Bonds Transaction Value Flows

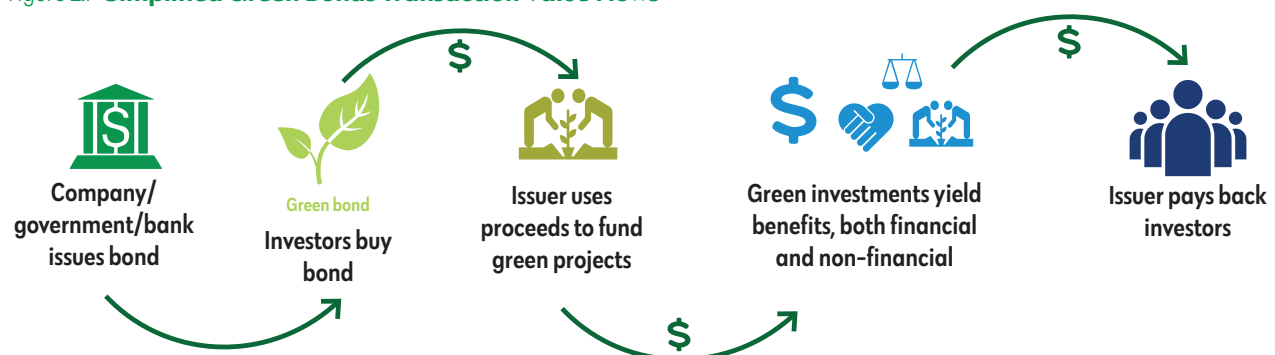
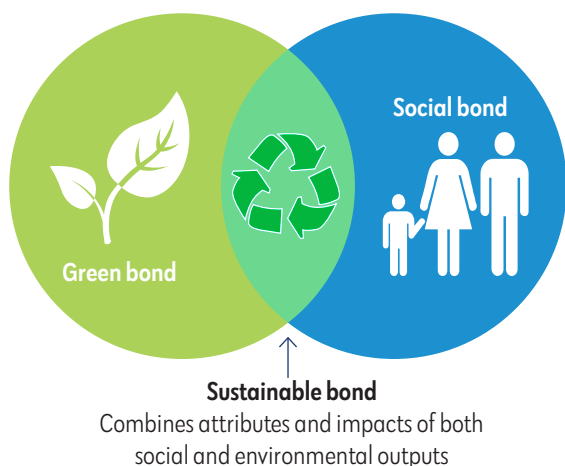


Figure 2.2 **Distinction between Green, Social and Sustainability Labelled Bonds**



2.1.3 International Sustainable Finance Standards

2.1.3.1 Purpose

There are **international standards and supporting frameworks** that have been developed and are now widely used and accepted that represent investor and market expectations and articulate good practice for raising sustainable bonds, using and managing the proceeds, and reporting to investors on the financing activities and impacts of these types of bonds. When an issuer uses a thematic label to name its bond, it is increasingly expected that the issuer has adopted one of these international standards.

The standards set out, in fairly clear terms, the minimum requirements of sustainable bond issuers, as follows.

- **Develop and implement a sustainable bond framework.** The sustainable bond framework establishes the governance and management activities the issuer will undertake in relation to the sustainable bond. The framework is typically made public when or before the sustainable bond is issued. It is communicated to key stakeholders (at a minimum, the stock exchange, investors and the independent reviewer as part of their review).
- **Develop and implement a supporting procedural environment.** The sustainable bond framework is often supported by more detailed procedures, and should refer to these procedures even if they are not

made public. The framework and procedures serve to regulate the specific activities the issuer must perform to manage the sustainable bond, including managing bond proceeds; identifying, monitoring and evaluating the sustainability impacts of projects; and reporting. Sometimes these procedures predate the framework (i.e. they are already existing in the organization); however, this might not be the case for all municipalities. It is important to enhance existing procedures when they do not meet the minimum requirements set out by the sustainable bond standards, and to implement these enhancements effectively in organizational processes.

- **Perform activities and functions in accordance with the sustainable bond framework and procedures.**

In South Africa, if a sustainable bond is listed on the JSE's sustainability segment, it is a **regulatory requirement to adopt and comply with specific international standards**. The four major international frameworks for use of proceeds of green, social and sustainable bonds are as follows:

- International Capital Market Association (ICMA) Green Bond Principles (GBP);
- ICMA Social Bond Principles (SBP);
- ICMA Sustainability Bond Guidelines (SBG); and
- Climate Bond Initiative (CBI) Climate Bond Standards (CBS) and certification scheme.

The five core components defined by each of the ICMA standards that sustainable bond issuers should understand and respond to follow:

- **Use of proceeds.** One of the main elements of a sustainable bond is utilization of the bond's proceeds for sustainability projects, which should be appropriately described in the legal documentation for the security. All selected sustainability projects should provide clear environmental benefits, which will be assessed and, where feasible, quantified by the issuer.
- **Process for project evaluation and selection.** This involves setting environmental sustainability objectives and the process by which the issuer determines the eligibility of sustainability projects.
- **Management of proceeds.** This involves the effective and transparent management of proceeds, which includes crediting the net proceeds of the

sustainable bond to a sub-account or moving them to a subportfolio in a formal internal process linked to the issuer's lending and investment operations for sustainability projects.

- **Reporting.** This entails annual reporting on the use of proceeds until bond maturation is reached.
- **External review.** This identifies independent external review or assurance options and requirements.

A sustainable bond issuer is expected to develop a **sustainable bond framework**, which typically address the five core components, responding in each section to the requirements of the standard (or going beyond these requirements in terms of commitment and/or detail). Issuers are also expected to capture in their frameworks the following additional details:

- The issuer's **overall sustainability strategy**; and
- The issuer's **approach to impact reporting** (as part of reporting).

The following subsections detail the four sets of standards from ICMA and CBI.

2.1.3.2 Green Bond Principles

ICMA maintains voluntary process guidelines for issuing green bonds that clarify the process for issuance and governance of a green bond and recommend transparency and disclosure, thereby **promoting integrity in the development of the green bond market**.

The GBP focus is on use of proceeds for projects, assets and activities that are environmentally impactful (green), while recognizing these may have social co-benefits.

According to ICMA, **eligible green project categories** include but are not limited to the following:

- Renewable energy;
- Energy efficiency;
- Pollution prevention and control;
- Environmentally sustainable management of living natural resources and land use;
- Terrestrial and aquatic biodiversity conservation;
- Clean transportation;
- Sustainable water and wastewater management;
- Climate change adaptation;
- Eco-efficient and/or circular economy-adapted products, production technologies and processes; and
- Green buildings.

The essence of the **governance processes** outlined by ICMA's GBP concern how projects are identified, evaluated and selected as eligible and continued processes for monitoring ongoing eligibility; how proceeds are used and managed, ensuring that proceeds are spent on eligible assets or projects (tracking the use of the proceeds); and ensuring the transparency and suitability of information that issuers must disclose to investors.

The **ICMA Resource Centre** should be consulted for the most current version of the GBP, as well as any additional related guidance materials and templates.

2.1.3.3 Social Bond Principles

Very similar to the GBP in structure and objectives (the same process-related core components apply), the SBP provide guidance for social bonds, whereby the use of proceeds serve a socially impactful purpose.

Many projects undertaken by municipalities have a distinct social and socioeconomic objective; it is possible that municipalities are able to identify such projects as eligible for a social bond.

The SBP provide high-level categories for eligible social projects, but recognize that there is a diversity of views and contexts that apply in terms of social relevance and impact, and that this is an evolving area of work. The SBP recommend consulting complementary guidelines and the additional resources offered by the **ICMA Resource Centre**.

Social project categories include, but are not limited to, providing and/or promoting the following:

- Affordable basic infrastructure (e.g. clean drinking water, sewers, sanitation, transport, energy);
- Access to essential services (e.g. health, education and vocational training, healthcare, financing and financial services);

2. ABOUT SUSTAINABLE BONDS

- Affordable housing;
- Employment generation and programmes designed to prevent and/or alleviate unemployment;
- Food security and sustainable food systems; and
- Socioeconomic advancement and empowerment (inequality).

The SBP emphasize the expectation that:

- Social projects directly aim to **address or mitigate a specific social issue** or seek to achieve distinct positive social outcomes; and
- The **target population** that may be affected by the underlying project is identified.

The SBP recommend that “Issuance aligned to the SBP should provide an **investment opportunity with transparent social credentials**”, reiterating the importance of both impact and transparency and credibility.

2.1.3.4 Sustainability Bond Guidelines

The SBG provide a unifying standard for when the underlying project or portfolio of projects have **both environmental and social impact benefits**. The mixture of sustainability impacts can then be labelled as a sustainability bond or similar, and the independent review conducted against this standard.

In essence, the SBG state that the environmental components of the bond must conform to the requirements of the GBP and the social components of the bond must conform to the requirements of the SBP.

The same process-related core components must be undertaken for sustainability bonds as for green or social bonds.

2.1.3.5 CBI Climate Bond Standards and Certification Scheme

The CBS build on the structure of the ICMA GBP. They apply specifically to **projects that target climate change mitigation and adaptation**, for which the CBI has developed a taxonomy (i.e. a register of sectors, sub-sectors and projects that are typically aligned or could be aligned to the CBS, subject to further validation against the CBS).

The CBS provide similar process-related guidelines to ICMA, clear definitions for eligible use of proceeds, and a requirement for reporting and validation by an accredited verifier in order to obtain a climate bonds certification.¹

The CBS outline the requirements that the climate bond issuer must satisfy at the pre-issuance stage (**pre-issuance requirements**), which covers demonstration and proof that there are robust internal controls and tracking mechanisms to ensure use and management of the bond proceeds is in accordance with best practice.

Additionally, there are **post-issuance requirements** which monitor and direct use and management of the bond proceeds and the reporting systems of the issuer for conformance with the standard.

Both pre- and post-issuance stages include the requirement for **independent assurance** to be provided by an external reviewer, which can only be a CBI-approved verifier.

The certification scheme, through approved verifiers, lends an additional layer of credibility to the enforcement of the CBS requirements. The **database** of the certification scheme provides investors and the wider public with a knowledge bank of verified global sustainable debt finance flows.

2.1.4 Sustainable Finance Taxonomies

A taxonomy, in its simplest definition, is an assessment system that can be used by issuers and investors to consistently define or identify and classify something. In this context, it is a coherent set of sustainability criteria that defines if an industrial activity, product, process, etc. is sustainable, green or social; and assesses the extent of alignment to technical criteria (ICMA, 2021c).

A taxonomy provides market participants with clarity and a **common understanding of whether a project or asset should be considered for financing** using a sustainable instrument, and helps investors confirm

¹ For more information, see the CBI [webpage](#) on Climate Bonds Standard and Certification Scheme.

the alignment of prospective investment opportunities with their investment mandates.

The taxonomy (or set of selection criteria) is needed in the process of identifying and selecting eligible projects from a potential pool or pipeline of projects that a municipality may be considering. The selection criteria to be used by the municipality should be documented in the sustainable bond framework.

An established taxonomy from an international standard, or the draft green finance taxonomy being developed for South Africa (NBI, 2021), can be useful in helping a prospective South African municipal issuer **define its eligibility and exclusion criteria**.

The following subsections identify **available taxonomies that prospective issuers can consider** to identify typical eligible types of projects and assets, support the development of their eligibility criteria, and identify eligible projects.

2.1.4.1 **GBP and SBP Project Category Listings and ICMA Green Project Mapping**

The project categories identified in the GBP and SBP (described respectively in [2.1.3.2](#) and [2.1.3.3](#)) offer high-level investment themes. These can be used as the starting point for creating selection criteria.

Another resource to consult is [Green Project Mapping](#) (ICMA, 2019), which identifies **project categories that have relevance to key environmental objectives**. ICMA describes the mapping as “only [to] provide a broad suggested, and non-exhaustive list of eligible Green Project categories but also note that issuers can reference existing standards and taxonomies (such as labels and accreditations for a specific sector) and/or develop their own framework” (ICMA, 2021b).

A prospective issuer can consider these themes and project categories to **identify the focus areas** for its sustainable bond framework (in terms of green projects) and to inform eligibility criteria. However, it should be noted that these project categories are very broad, and more specific details are recommended when developing eligibility criteria in frameworks. At least for environmental projects, there are more detailed classification methodologies available

internationally, underpinned by greater detail and even specific technical standards – for example, the International Development Finance Club Common Principles for Climate Mitigation Finance Tracking (see [2.1.4.2](#)), the [European Union \(EU\) Taxonomy for Sustainable Activities](#), the draft South African Green Finance Taxonomy which is partly modelled on the EU Taxonomy (see [2.1.4.3](#)), and the CBI Taxonomy (see [2.1.4.4](#)), amongst others. These options should be consulted as they provide more refined, stricter criteria. It is likely that international investors will expect this level of detail in the selection criteria.

2.1.4.2 **Common Principles for Climate Mitigation Finance Tracking**

The high-level [Common Principles for Climate Mitigation Finance Tracking](#) (IDFC, 2021) are aimed at climate finance and used by multilateral development banks (MDBs) and some national development banks; for instance these principles informed the recent [Development Bank of Southern Africa Green Bond Framework](#) (DBSA, 2021).

The Common Principles for Climate Mitigation Finance Tracking are the result of a number of MDBs coming together to develop a methodology for tracking their climate finance contributions in a comparable, transparent and consistent manner. In 2015, these MDBs aligned their principles with those of the International Development Finance Club.

The principles set out consistent and harmonized definitions and guidelines for categories; subcategories and sample activities, projects and assets that would be considered subject to additional principles and environmental, social and governance (ESG) evaluations.

Municipalities could consult the principles in order to develop a slightly more detailed set of eligibility criteria, as compared to those available in ICMA's Green Project Mapping; they are less comprehensive and specific than those provided by the CBI Taxonomy (see [2.1.4.4](#)).

2.1.4.3 **South African Green Finance Taxonomy**

The National Treasury technical paper [Financing a Sustainable Economy](#) is the result of a year-long

initiative supported by the IFC to develop a new green finance taxonomy specifically tailored to the South African context and needs. This taxonomy, to be launched in April 2022, is expected to enable South Africa to accelerate sustainable finance.

The South African Green Finance Taxonomy is initially **focused on environmental aspects, and climate change adaptation and mitigation** in particular, with detailed technical standards adapted from the EU Taxonomy. It is anticipated that the South African taxonomy will be expanded in time to encompass the following:

- **Technical standards for activities that contribute significantly to other environmental objectives** in addition to climate change mitigation and adaptation (e.g. circularity, water resource efficiency, pollution prevention, and protection and restoration of ecosystems); and
- Principles and technical standards that make a significant **contribution to social dimensions of sustainability**, as well as provide guidance for transition activities and projects.

The EU Taxonomy on which South Africa's has been modelled has been incorporated into the EU's regulatory environment. At this writing, however, the South African Green Finance Taxonomy is planned to be a **voluntary tool** for the market to use at its discretion.

Prospective issuers should engage with the taxonomy to understand the depth of technical requirements it expects evaluators to undertake. The taxonomy goes beyond the immediate positive environmental performance of an activity, project or asset to also consider the following:

- The **climate change resilience** of the activity, project or asset – i.e. the investment must not be vulnerable to the physical effects of climate change;
- **Social safeguarding** in relation to the activity, project or asset – i.e. compliance with human rights and labour law is fundamental to taxonomic alignment, even if the project is green; and
- The activity, project or asset must adhere to the **do no significant harm** principle – e.g. a dimension of positive impact cannot be used as a trade-off against a dimension of negative impact.

Eighty subsectors and groups of activities are currently listed in the South African Green Finance Taxonomy under the following sectoral themes:

- Agriculture, forestry, fisheries and land use;
- Industry;
- Energy;
- Water and waste;
- Transportation;
- Information and communications technology;
- Construction;
- Enabling activities, system resilience and innovation; and
- Social resilience.

2.1.4 Climate Bonds Initiative Taxonomy

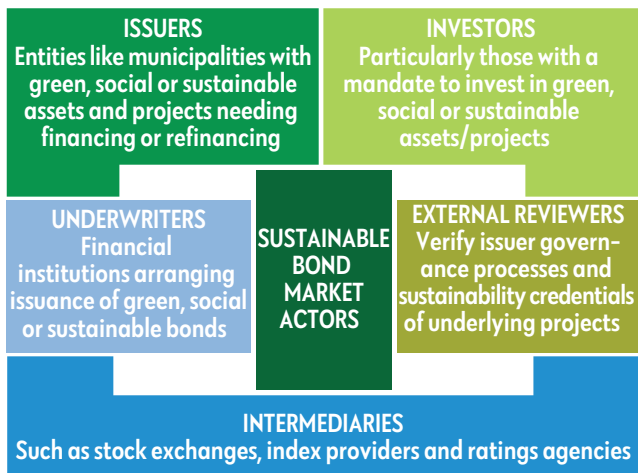
The taxonomy put forward by the CBI (CBI, 2021) is for a range of projects and assets that help deliver a low-carbon and climate-resilient economy. The taxonomy listing is accompanied by detailed technical standards against which each project must be evaluated to determine whether it **aligns with the minimum requirements of the CBI**, and thus be eligible for certification.

The CBI Taxonomy has been expanded to include more climate change adaptation sectors and criteria, alongside a growing range of mitigation sectors and criteria (the most up-to-date version is on the Climate Bonds Taxonomy [webpage](#)). When using the taxonomy, the prospective issuer must consult the individual detailed technical standards for each item.

2.1.5 Market Actors in Sustainable Bonds

The sustainable bond market and ecosystem in South Africa does not differ markedly from that internationally, having the same typical role players and processes. The actors most integrally involved are highlighted in [Figure 2.3](#); the following subsections describe their position in the South African sustainable bonds ecosystem, delineating their enabling and direct roles in sustainable bonds issuance and management.

Figure 2.3 General Sustainable Bond Market Actors



Source: JSE (2017).

2.1.5.1 Issuers

WHAT ARE THEY?

A bond issuer is a borrower (e.g. a municipality); the bondholder or purchaser is the lender or investor. A sustainable bond issuer has a potential project (or portfolio of projects) with sustainability, social and/or environmental/climate benefits and has chosen this instrument to raise funds and use the proceeds of the issuance to fund these projects. At the maturity of the bond, bond issuers repay the bondholders the principal value of tradable debt.

THEIR VALUE PROPOSITION

Raising debt capital on the open market allows the issuer to meet critical capital needs with some ability to match the life of the asset being financed, creating a pay-as-you-use regime. Once the issuer has a track record on the market, it may be possible to put smaller add-on issues at a lower cost than a new issue. Bonds are considered a relatively safe investment vehicle for investors, forming an integral part of an investor's overall portfolio. Bond issuers **provide these safe instruments to meet market investment demand**.

SUSTAINABLE BOND ISSUERS IN SOUTH AFRICA

As of this writing, there are several types of bond issuers in South Africa's nascent market:

- **Corporates:** Nedbank, Standard Bank, Growthpoint Properties and Netcare;

- **Municipalities:** City of Johannesburg, City of Cape Town; and
- **Public agencies:** Development Bank of Southern Africa (DBSA), Industrial Development Corporation of South Africa (IDC).

2.1.5.2 Underwriters

WHAT ARE THEY?

Underwriting is a commitment to subscribe for or purchase securities that are not sold to investors – that is, the underwriter provides the issuer with assurance of pricing for the instrument and removes some of the financial risk from the transaction. The underwriter evaluates and assumes the issuer's risk for a fee. Essentially, the underwriter guarantees the issuer, based on specified conditions, the number of securities that will be sold and the minimum proceeds the issuer will receive.

In the case of bonds, the term is used for an underwriter of bond issue operations. This role entails being responsible for **developing the structure, pricing, launch of the bond on the market and placement with investors**. The underwriter defines the bond's characteristics (term, interest coupon etc.), develops a prospectus and presents it to potential investors (a roadshow). All of these functions may be assumed by a single organization, or a consortium of institutions may undertake the issuing operations under the coordination of a lead institution (or lead arranger), which can also act as a guidance counsellor (advisor) to the sustainable bond issuer (FEBRABAN and CEBDS, 2016).

In tradable debt such as municipal sustainable bonds, the underwriter is **usually a financial institution such as a bank, investment bank or broker**. Other terms used but synonymous for the underwriting of bond issue operations are listed in [Table 2.2](#). These terms are sometimes used interchangeably.

THEIR VALUE PROPOSITION

Underwriters are an **intermediary between a bond issuer (e.g. municipality) and a bondholder (e.g. investor)**. They are generally investment banks with knowledge and expertise to help issuers reach investors. Bankers advise the issuer on the factors and

Table 2.2 Various Naming Conventions for Functions Provided by Underwriters

Singular term	Plural term	Role description
Underwriter	Co-underwriters	Takes the lead and is responsible for underwriting and distribution of the entire bond issue. The term may be used interchangeably with lead arranger if multiple parties are involved in the bond issue (FEBRABAN and CEBDS, 2016).
Lead arranger	Co-arrangers	Leads every aspect of the transaction, its structuring and distributions. Leads the formation and manages an underwriting group or consortium of institutions (FEBRABAN and CEBDS, 2016).
Lead manager	Co-managers	Same as an underwriter
Bookrunner	Joint-bookrunners	Keeps an investor order book and determines how much of the bond is allocated to each investor. This activity can be part of the lead arranger role or brought on board to support an underwritten deal (BBVA, 2018).

marketplace conditions that may affect bond issue before beginning underwriting operations. When underwriting the bonds, they assume the risk of buying the newly issued bonds from the corporate or government agency; they then resell the bonds to the public or to dealers that then sell them to the public. The investment bank earns a profit based on the difference between its purchase price of the bond from the bond issuer and the selling price; this difference is called the "underwriting spread" (Morningstar, n.d.).

When an investment bank markets a new issue but does not underwrite it, it acts as a sales agent or dealer. **Sales agents** operate under a best efforts agreement, which promises to sell the bonds to the best of their ability. These agents receive a commission on the bonds sold. They can buy the bonds for their account to make profits (Morningstar, n.d.).

When considering securing the services of an underwriter (or consortium of underwriters), the municipality should take the following into account:

- The **competitiveness and comprehensiveness** of the service offering; and
- The **experience, capabilities and capacity** in terms of the sustainable bonds market, for instance:
 - Experience issuing or underwriting other sustainable instruments,
 - Ability to incorporate and communicate the sustainability credentials of the sustainable bond to marketing and market engagement, and

- Ability to leverage the benefits of a sustainable bond through engagement with a broad range of ESG-focused investors.

RELEVANT ORGANIZATIONS IN SOUTH AFRICA

Underwriting services are provided by the following entities, amongst others:

- The **"big four" local investment banks** – FNB/RMB, Nedbank, Standard Bank and Absa;
- **International banks** such as J.P. Morgan, Citibank and BNP Paribas; and
- **International MDBs** such as the IFC.

2.1.5.3 Investors

WHAT ARE THEY?

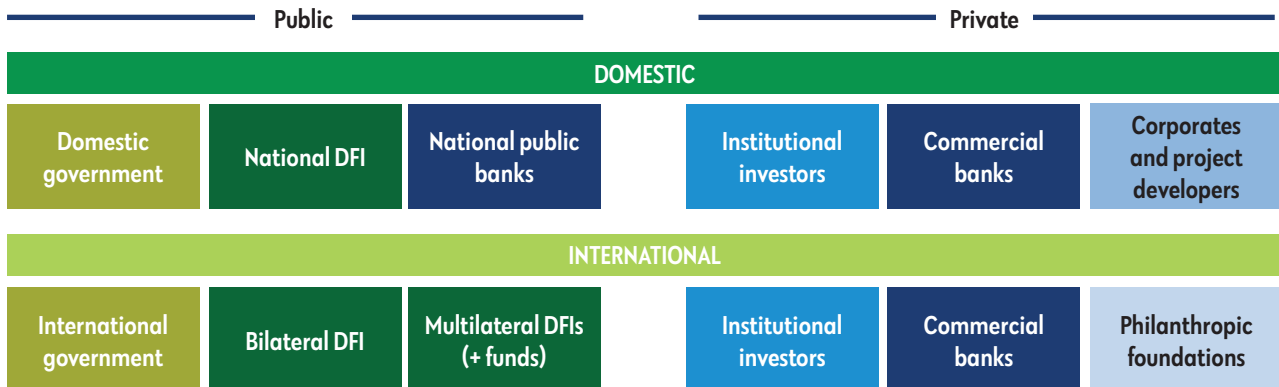
Investors invest in bonds issued by issuers; they are the bondholders, and act in the primary market. They may resell their bonds into the secondary market. At the maturity of the bond, bondholders are owed their principal and the yield to be repaid by the bond issuer.

TYPICAL AND POTENTIAL INVESTORS IN SOUTH AFRICA

Typical investors in sustainable bonds are identified in [Figure 2.4](#); they are likely to include a combination of domestic and international investors, and a spectrum of types of investing organizations.

In the **public sector**, the regional development finance institution (DFI) DBSA is the largest public lender to South African municipalities, holding an approximately

Figure 2.4 Illustration of South African Investor Ecosystem



Source: Adapted from SEforALL (2019).

40 per cent share of total municipal debt as of March 2020 (National Treasury, 2020a). DBSA has invested in South African municipal bonds in the past, including through private placement.

Another prominent investor group in the public sector includes DFIs that utilize different financing mechanisms, for example financial support through concessional finance and de-risking mechanisms across various sectors. In addition to offering financial solutions, DFIs may offer technical assistance to further enable public sector issuance.

On the **private sector side**, commercial banks, pension funds and insurers remain a significant investor group in private sector municipal lending. As awareness around sustainable investment grows, investors or portfolio managers are increasingly integrating ESG and sustainability considerations into their investment strategies – and are likely, in the future, to demand greater action, coherence, impact and transparency from South African municipalities.

The Infrastructure Finance Corporation (INCA) is another significant private lender in the municipal market. It was established to support the country’s stalled municipal bond market by issuing bonds to raise funds (National Treasury, 2008). To date, INCA continues to provide finance and expertise to provincial governments and other public sector entities to assist them in executing their developmental needs.

It may be that the sustainable label attracts a greater number of investors or increases the interest of DFIs and pension funds. This engagement should be strongly supported by the entity handling the loan arranger or municipal investor relations functions during the pre-issuance phase.

2.1.5.4 Index Providers

WHAT ARE THEY?

In investments trading, index providers calculate and distribute tradable securities such as bonds, shares etc.

Indices classify and define a market or a portion of a market. Those indices are used to benchmark that market or market share. An index is an important tool for investors, allowing them to **compare (or benchmark) how their investments are performing compared to the rest of the market** (e.g. how is their investment in a bond performing relative to the entire bond market).

THEIR VALUE PROPOSITION

Bond issuers will use the indices from index providers as a basis for creating financial products (e.g. a green bond) that they sell to investors.

When bond issuers market their bonds through underwriters, they use the overall bond market performance information from index providers to establish how an investor will gain against an asset benchmark by investing in this bond compared to the rest of the bond market.

RELEVANT ORGANIZATIONS IN SOUTH AFRICA

Although the [Johannesburg Stock Exchange](#) provides a sustainable bond segment, local bond issuers tend to look to the [London Stock Exchange](#)'s sustainable bond market to provide a benchmark for sustainable bond issues, given that the South African sustainable bond market is relatively illiquid and has few constituents.

2.1.5.5 Stock Exchanges

WHAT ARE THEY?

A stock exchange is a centralized location where publicly traded bonds are bought and sold. This is a debt capital market; other forms of capital market also exist to trade other forms of capital. Stock exchanges differ from other exchanges because the tradable assets are limited to stocks, bonds and exchange-traded products (ETPs); they are licensed to conduct these types of market activities and to exert regulatory or oversight powers.

THEIR VALUE PROPOSITION

The main advantage of using a stock exchange as a trading method is that, on an exchange, **transactions are mediated** rather than taking place directly between two parties. This means that there are stricter regulations on investors and speculators as well as on the bonds listed, as well as greater parity between actors.

Bonds often need to meet specific standards before they can be listed on a stock exchange. These standards can vary depending on the stock exchange. Exchanges **provide an extra layer of protection** for bond issuers, underwriters and bondholders.

Being listed on an exchange means investors can buy and trade bonds, which helps the bond issuer raise capital. By trading on a stock exchange, traders will likely be at less risk of counterparty default due to the high levels of regulation on stock exchanges.

For the issuer, a stock exchange listing provides **access to a broader pool of new investors**. It is also a leadership and branding opportunity when coupled with positive publicity.

RELEVANT ORGANIZATIONS IN SOUTH AFRICA

The Johannesburg Stock Exchange is the only relevant debt capital market in South Africa for domestic bonds to be issued by South African municipalities. Although there are other, smaller exchanges in South Africa (A2X Markets, 4 Africa Exchange, ZAR X), these do not trade in sustainably labelled bonds.

2.1.5.6 External Reviewers

WHAT ARE THEY AND WHAT IS THEIR VALUE?

International sustainability bonds standards strongly encourage external reviews by an independent party to improve transparency and credibility of the label. In South Africa, listing a sustainable bond on the Johannesburg Stock Exchange will require an independent sustainability review by a suitably qualified and experienced independent party appointed by the issuer.

External review introduces additional costs but benefits the issuer and is advised. The advantages of these independent services typically include the following:

- Provide an **expert independent perspective** of compliance and alignment with sustainable bond standards;
- Signal **credibility** to potential investors and offer an additional means to build investor confidence; and
- Align with **market expectation**.

An external review might take different forms, as shown in [Table 2.3](#). The decision of which to choose is made by the sustainable bond issuer, taking the following into account:

- Investor expectations;
- The international sustainable bond standard applied; and
- Issuer preferences.

THEIR SERVICES AND RELEVANT ORGANIZATIONS

Typically, independent reviews are conducted at the **pre-issuance stage** and consider the bond framework and the prospective bond. The external review may lend credibility and transparency to an issuance and enhance benefits in the marketing and issuance process.

However, **during post-issuance**, further and regular independent reviews can be undertaken. Some international sustainable bond standards require at least a single instance of post-issuance assurance; others do not require it, but encourage it as good practice. Best practice at this time involves post-issuance assurance within a year of the bond auction, and regularly thereafter for the tenor of the bond. These reviews should address the following:

- **Use of proceeds** (also referred to as verification of the allocation of proceeds); and

- **Actual achieved impacts** of the underlying assets and projects, and reporting on those impacts to bondholders and other relevant stakeholders (such as the stock exchange, a relevant standards body or the public – as would be good practice for municipalities).

[Table 2.4](#) identifies these additional post-issuance independent review subject matters that may be undertaken as good practice and potential service providers.

Table 2.3 **Types of Independent Reviews Identified by International Standards**

Type of review	What it covers	Service providers
Third-party assurance or verification	Assess whether the issuance is aligned with a reputable international framework, such as the GBP, SBP or CBS	<ul style="list-style-type: none"> • Typically accounting/audit firms (e.g. KPMG, EY, Mazars, Deloitte and others) • Other service providers are also recognized by the CBI and must provide assurance against that standard; see the CBI website for an up-to-date list of Approved Verifiers
Second-party opinion	<p>Assess issuer's sustainable bond framework, analysing alignment of eligible projects/assets and conformance of the framework with an international standard (typically, ICMA GBP, SBP or SBG).</p> <p>Some also give a sustainability rating, providing a qualitative indication of aspects of the issuer's framework and planned allocation of proceeds</p>	<ul style="list-style-type: none"> • ESG service providers (e.g. ISS ESG, Sustainalytics, Vigeo Eiris, DNV GL) • Scientific experts (e.g. CICERO, CECEP Consulting) • Other environmental consultants and assessment organizations (e.g. the Carbon Trust)
Green, social and sustainability bond rating/scoring	Assess bond's alignment with the GBP and integrity of its green credentials	Rating agencies such as Moody's , S&P Global Ratings , Japan Credit Rating Agency , R&I and RAM Holdings

Source: CBI (2019b); CBI [External Review](#) webpage.

Table 2.4 **Typical Post-Issuance Reviews**

Type of review	What it covers	Service providers
Second- or third-party assurance report	<p>Assurance of allocation of proceeds to eligible sustainable projects.</p> <p>In the case of assurance against the CBS, this includes allocation of proceeds to eligible green projects and types of green projects</p>	<ul style="list-style-type: none"> • Accounting/audit firms (e.g. KPMG and Deloitte's Assurance Reports) • ESG service providers (e.g. ISS ESG, Sustainalytics, Vigeo Eiris, DNV GL) • Scientific experts (e.g. CICERO, CECEP Consulting) • Other environmental consultants and assessment organizations (e.g. the Carbon Trust). • For assurance against the CBS, verifiers must be approved by CBI; see the CBI website for an up-to-date listing of Approved Verifiers
Impact reporting verification	Reporting that seeks to quantify the climate or environmental impact of a project/asset numerically	Audit firms, ESG service providers and scientific experts and consulting firms, as identified above

Source: CBI (2019b); CBI [External Review](#) webpage.

2.2 The Enabling Environment in South Africa

With reference to sustainable bonds, the **enabling environment** refers to the broad set of policy, institutional, regulatory, infrastructure and cultural conditions that govern sustainable bonds; and supportive aspects regarding implementation, enforcement, institutional and capacity strengthening of key actors, and dialogue and coordination between participating stakeholders.

2.2.1 Legislation and Regulatory Context of Bonds Issuance in South Africa

2.2.1.1 Who May Be a Bond Issuer?

A bond is a form of debt security, a particular financial instrument. Much like the rest of the financial sector in South Africa, **debt securities are regulated**. The legislation governing both listed and unlisted debt securities – including bonds (and therefore green, social or sustainability bonds) – in South Africa includes the Financial Markets Act, the Companies Act and the South African Banks Act (Davids et al., 2020; DLA Piper, 2019).

Only an entity that is registered as a bank, as defined under the Banks Act; authorized as a branch of a foreign bank, as defined under the Banks Act; or in compliance with particular exemptions, as defined in the Banks Act, may offer and issue debt securities. An important exemption of the Banks Act for non-bank issuers – such as municipalities – is set out in the Commercial Paper Regulations. This exemption specifies that a **non-bank entity may issue debt securities, provided the entity is a listed company or has a net asset value of at least R 100 million for at least 18 months prior to the issue of any commercial paper**. This regulatory stipulation is therefore the criteria by which a municipality in South Africa might be eligible to issue a debt security such as a bond (DLA Piper, 2019; Shawe, 2016).

2.2.1.2 Who May Market a Bond?

Marketing of debt securities in South Africa is regulated by the **Financial Advisory and Intermediaries Services Act**. Only an entity that is licensed under the act to do

so may market debt securities, act as an intermediary in offers and sales of debt securities, and recommend or provide guidance on the purchase of debt securities (DLA Piper, 2019). Thus, **a municipality seeking to issue a prospective bond should engage a service provider that is able to assist it in marketing the bond** – a role that may be taken up by an individual actor or as part of the services offered by an underwriter or arranger.

2.2.1.3 How and Where May Bonds Be Issued?

There are differences in what is required of an issuer for a bond issuance depending on whether it is a private placement or a public offering; this is regulated by the Companies Act.

- A **public offering** requires the development of a prospectus that sets out the details of the investment offering of securities for sale and other factual information as specified by the Companies Act. The prospectus must be registered with the South African Companies and Intellectual Property Commission (CIPC).
- A **non-public offering** (i.e. a private placement) does not need a prospectus, but is also specified under the Companies Act.

A non-public offering might be appropriate when a municipality has attracted a major investor – for example, a DFI – that might be interested in investing in sustainability projects through a bond issue.

Whether a public offering or private placement, a bond may be listed on the debt capital market, providing market coordination and access. The only licensed exchange for listing of debt securities in South Africa is the Johannesburg Stock Exchange.

2.2.2 Institutional and Regulatory Infrastructure of the Johannesburg Stock Exchange

2.2.2.1 Overview

The JSE is a major global capital market actor and is licensed to operate under the Financial Markets Act. It is a publicly listed enterprise offering a multi-asset class securities exchange.

The JSE is actively involved in the promotion, enablement and advancement of sustainable finance activities in South Africa. To this end, it offers for-fee Continuing Professional Development-accredited training on the process of listing debt securities on the JSE targeted at financial role players in organizations. The JSE also runs an annual responsible investment/ ESG investor briefing workshop to enable investor engagement on ESG issues.

The JSE also has an appointed bond specialist in its Capital Markets division, whose role includes support to building awareness and providing assistance to prospective debt issuers, including prospective issuers in terms of the JSE's sustainability bond segment.

2.2.2.2 Regulatory Infrastructure of the JSE Debt Capital Market

The regulation of debt issuers and debt issuance is defined in terms of the JSE's debt listing requirements (DLR), which are amended from time to time – it is imperative that prospective debt issuers consult the [JSE website](#) for the most up-to-date DLR publication². Any debt listing process will need to conform to the requirements of the DLR and engage with the JSE's Issuer Regulation division, which is tasked with in-principal and final approvals of debt listings including of green, social and sustainability bonds listed on the JSE sustainability bond segment.

2.2.2.3 JSE Sustainability Bond Segment and Issuance Requirements

The JSE's sustainability bond segment enables the issuance of sustainability instruments. The JSE defines a sustainability instrument as "an instrument that finances one or more green, sustainable and social projects and confirmed by an independent sustainability advisor the sustainability status pursuant to the sustainability standards" (JSE, 2020).

² [Service Issue 28](#) (JSE, 2020) is the current version of the JSE's DLR. At the time of writing, amendments to the JSE DLR were open for public comment, as the JSE is introducing more sustainable debt products (namely, transition bonds and sustainability-linked bonds, to complement use of proceeds sustainable bonds discussed in this handbook).

The definitions for and series of **additional regulatory requirements pertaining to the sustainability segment** are defined in the DLR. Issuers should reference the latest version when they embark on the issuance process, as details, definitions and requirements are continually evolving for these types of instruments.

Important concepts in the DLR regarding the sustainability segment include the following:

- **The need to appoint an independent sustainability advisor.** The DLR specifies the typical requirements of a suitable advisor, and what this advisor must do to confirm that the bond meets the requirements for the JSE sustainability segment.
- **Information required in the offering legal documentation.** This documentation (i.e. Domestic Medium-Term Note Programme memorandum and Applicable Pricing Supplements) serves as the legal agreement between the issuer and investors that pertains to green, social or sustainability bonds in particular and will include:
 - Confirmation that an independent sustainability advisor has been appointed and information regarding that advisor;
 - Clarity on the use of proceeds for the bond;
 - Clarity on the management and allocation of proceeds;
 - Clarity on reporting on impact of the projects;
 - Commitment to include the report from the independent sustainability advisor.

Regarding the **international sustainable standards** against which the independent sustainability advisor is to confirm the compliance of the instrument, framework and/or projects, the JSE recognizes the following standards related to green, social and sustainability bond issues:

- ICMA GBP;
- ICMA SBP;
- ICMA SBG; or
- "Any other standard acceptable to the JSE, in its discretion in relation to the classification of sustainability instruments" (JSE, 2020).



3. *End-to-End Process*



This section introduces the end-to-end process for preparing, issuing, managing and reporting on a municipal sustainable bond. [Figure 3.1](#) provides an overview of the sequence of activities for sustainable bonds across three phases:

- **Pre-issuance phase (Steps 1–13 of Figure 3.1).** The preparatory work to develop a sustainable bond framework, the governing and management processes, and to design and position a municipal sustainable bond.
- **Launch phase and issuance (Steps 14–17).** The processes once the market is formally engaged, with the view to issue a municipal sustainable bond, to the auction of the bond.
- **Post-issuance phase (Steps 18–21).** The ongoing activities and obligations that a sustainable bond issuer must meet, to various stakeholders including the management of proceeds, allocation and impact reporting.

Some of the steps are not required, but are recommended as good practice and provided as guidance to municipal issuers.

PRE-ISSUANCE PHASE

3.1 Evaluate Financial Suitability and Other Benefits and Challenges

A range of potential financial and non-financial opportunities and challenges are associated with municipal sustainable bonds, each of which must be evaluated thoroughly when considering issuance. These considerations are discussed in the following subsections and summarized in [Figure 3.4](#).

3.1.1 Consider the Need for Capital and Diversification

South African municipalities face significant demands for investment in services and infrastructure. Given the limited availability of grant funding and the challenges around own revenue, **municipalities often need ways to augment capital budget deficits and utilize innovative financing for infrastructure** so as to accelerate the eradication of infrastructure backlogs and fulfil their developmental role (SALGA, 2018).

Increased capital mobilization by municipalities is paramount in the South African context. Municipal sustainable bonds could provide an innovative means to mobilize private capital towards green and social investing and reduce threats to sustainable municipal projects due to lack of financing.

Municipal sustainable bonds also offer the opportunity for capital diversification. This entails the use of multiple financing instruments for capital projects – which could reduce the overall cost of borrowing and lower project financing risks, in certain instances.

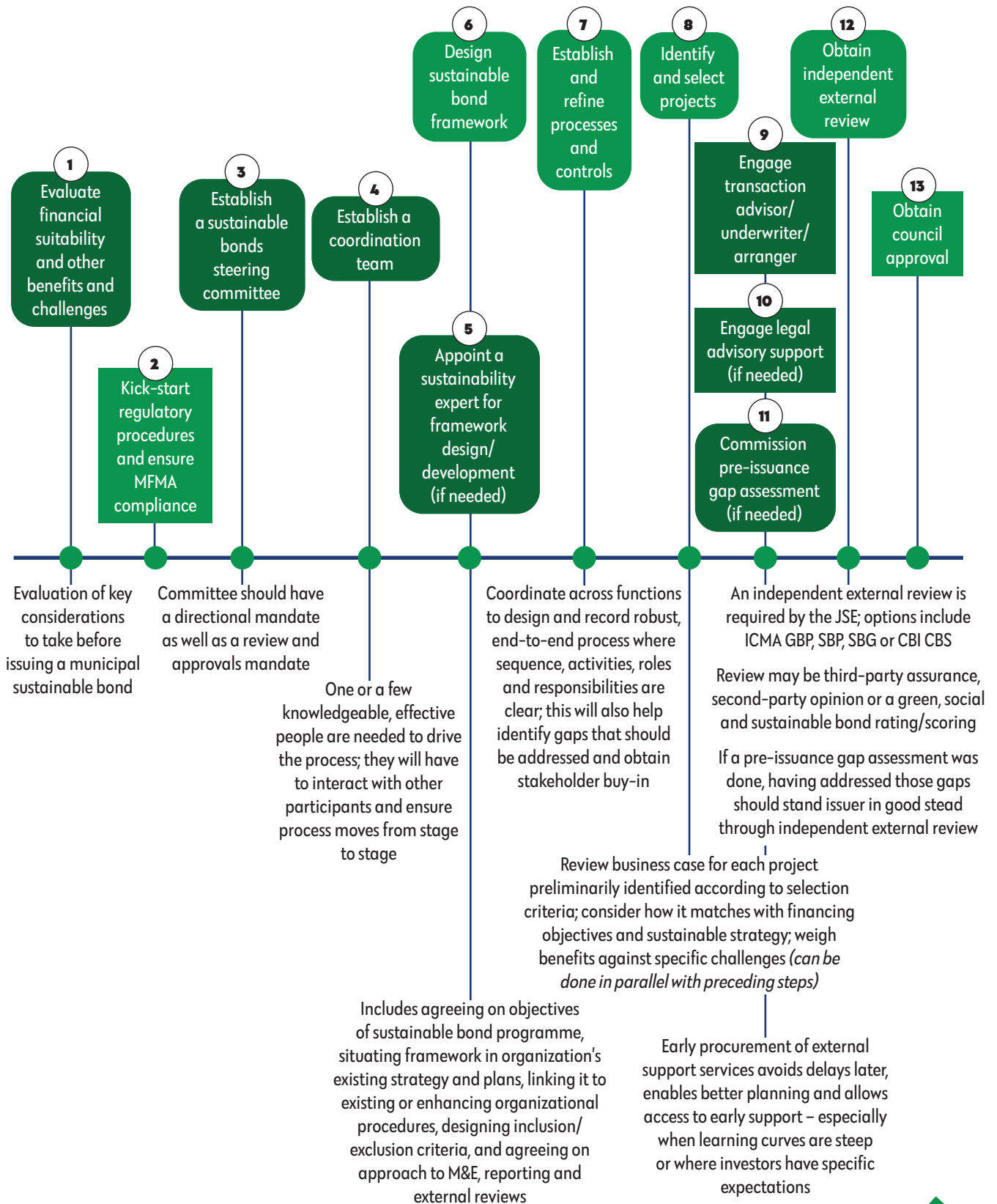
Intrinsic to evaluating the suitability of a sustainable bond is **understanding the financial need and cost efficiency of the instrument** by comparing it against other financing options.

3.1.2 Consider Municipal Funding Instruments and Borrowing Strategies

Municipalities make use of various funding strategies (including debt instruments) to meet capital and operational expenditure needs. [Figure 3.2](#) illustrates the main types of funding sources.

Under **external funding**, debt instruments used are typically either short- or long-term debt. Short-term debt mostly comprises bank loans and loans from government entities (such as the national government)

Figure 3.1 Outline of Suggested Sustainable Bond Issuance Process



■ Optional/recommended based on need

□ (Square-edge boxes) Same as for vanilla bond issuance

Pre-issuance

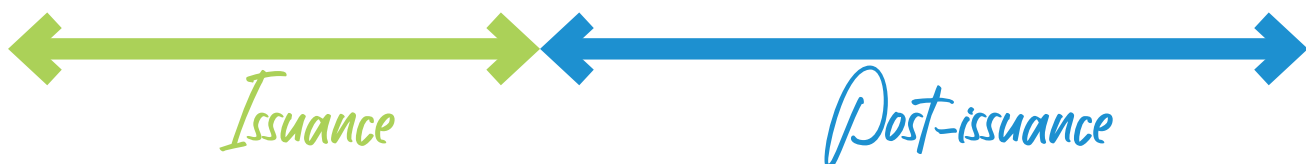
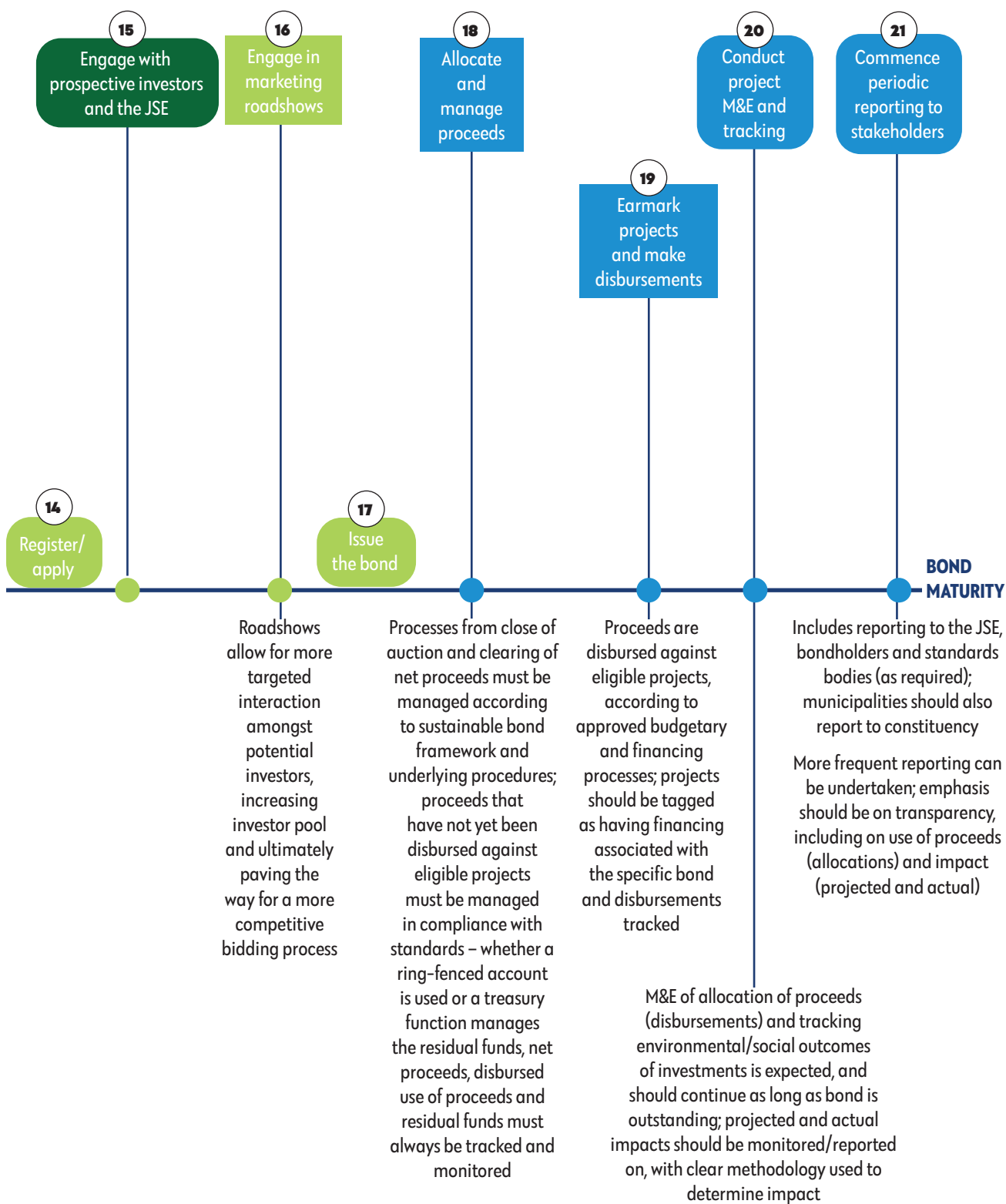
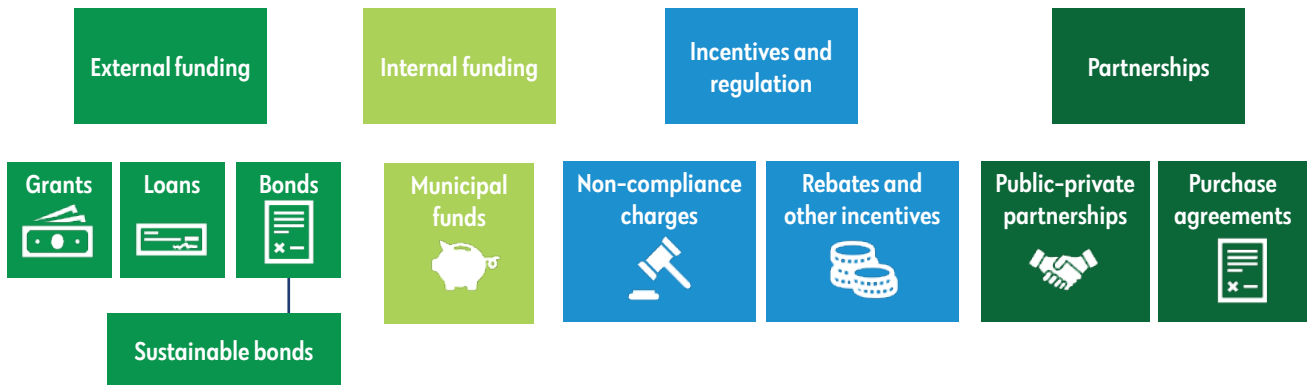


Figure 3.2 Common Municipal Funding Instruments Used for Green Projects in South Africa



Source: Adapted from SALGA (2014).

and other domestic sources. Long-term debt mostly comprises municipal bonds (including municipal sustainable bonds) and long-term bank loans.

Municipal projects that are also classified as sustainable can be financed by any of these different financing mechanisms, including by municipal sustainable bonds, to raise finance to respond to approved budgets. Figure 3.3 illustrates how projects that qualify for municipal sustainable bonds could situate in the financing ecosystem.

Before a municipality issues a municipal sustainable bond, it is useful to do the following:

- Consider the opportunities and challenges associated with the debt instrument in general (Figure 3.4).
- Understand how sustainable bonds may be positioned within established municipal functions, governance procedures and operations, and within existing regulatory and mandate specifications. Ideally, management processes can be extended or evolved to accommodate sustainable bonds.

Municipal financial planning processes must evaluate costs of capital and the appropriateness of financing instruments, including if embarking on a potential municipal sustainable bond issuance.

Figure 3.3 Illustration of Link between Municipal Projects That Qualify for Sustainable Bonds and Options for Funding Mechanisms

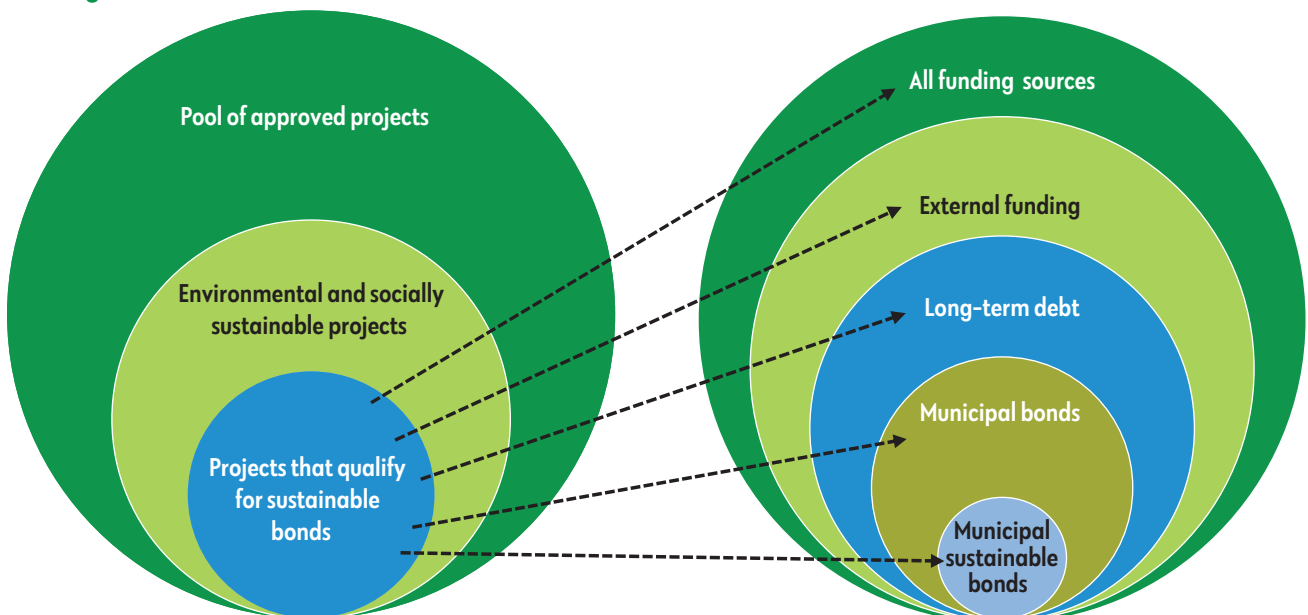
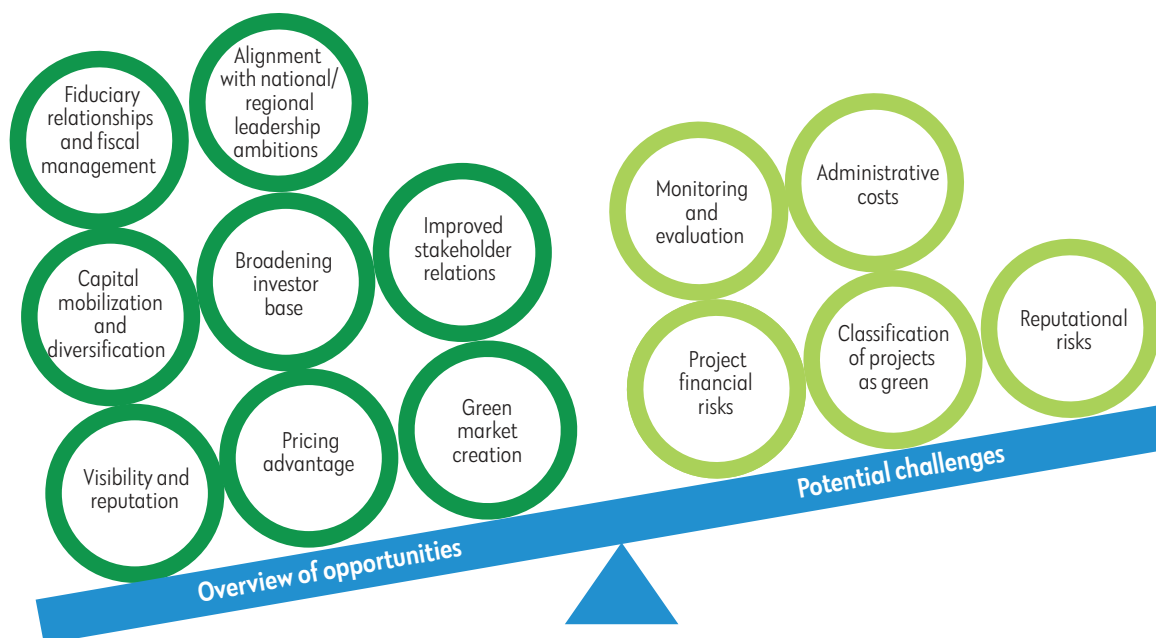


Figure 3.4 Overview of Opportunities and Potential Challenges of Sustainable Bond Issuance



Note that the **opportunities and challenges associated with municipal sustainable bonds** are subject to a wide variety of factors, including financial market conditions; institutional structures and the capacities of the issuing municipality; the financial state of municipality, including its creditworthiness as expressed by its credit rating (Goebel, 2017); the type of projects to be funded; the strength of investor relations; and, to a lesser degree, the communications strategy around sustainability matters, governance and the issuance in particular.

3.1.3 Evaluate the Opportunity to Broaden the Prospective Investor Base

Globally, trends indicate that investors are increasingly demanding sustainable investment opportunities and that the **popularity of sustainable financing instruments is growing**. Research highlights that as retail investors demand sustainable investments, institutional investors use sustainable bonds as one strategy among others to address sustainability requirements. For this reason, **sustainable bond issuances have attracted a new subset of investors** (Timbers, 2019).

Municipal sustainable bonds are known to attract investors that are not typically active in the municipal bond market, such as impact investors and retail and institutional investors seeking an environmentally positive way to earn income (CBI, 2015).

This in turn **widens the pool for more investor participation both locally and internationally**, which creates an opportunity for more competitive bidding. In particular, accessing capital markets gives exposure to a large pool of funds from institutional investors. For example, the City of Cape Town found that its inaugural green bond issuance in 2017 afforded it interactions with a new mix of asset manager investors it had not interacted with before.

3.1.4 Determine Whether There May Be Potential Pricing Advantages

Municipal bond lending rates tend to be more competitive compared to traditional bank lending rates, because of the involvement of more actors and the standardization of processes, services and products (Goebel, 2017). Even in private placement, the **municipality tends to gain a pricing advantage** – in this

case, because of the particular interest by the investor which often comes with concessional terms. Municipal sustainable bonds have an opportunity for an even better advantage on pricing performance mainly due to their niche market and popularity with investors interested in climate and socially responsible investing (SRI).

Studies differ as to whether there is any significant pricing difference between traditional municipal bonds and green bonds (Fung and Clement, 2019) – a variation termed a “greenium”. Anecdotal evidence suggests that, because they attract a particular kind of investor with an appetite for taking up investments with clear ESG attributes, **sustainable bonds hold the potential for “tighter” pricing and improved yields.**

3.1.5 Factor in the Additional Costs and Administrative Fees

Compared to other debt instruments, municipal bonds generally tend to be associated with more administrative components, which in turn leads to **higher transactional fees and additional administrative fees.** These costs include municipal advisor fees and expenses, bond counsel fees and expenses, underwriter discounts, bond insurance premiums, rating agency fees and registration costs (Goebel, 2017).

The issuance and ongoing costs associated with a municipal sustainable bond could be greater than those of a regular bond. These costs include implementation of additional tracking, monitoring and reporting processes along with up-front investment to define the bond's green criteria and sustainability objectives. Proper impact projections and evaluations require in-house competency – and possible specialist support.

The above are typically one-off costs that should be factored into consideration of the financial instrument. However, these costs should be weighed against the potential financial and non-financial benefits that may be accessed.

Furthermore, investors may seek penalties for a **green default**, which is when a bond is paid in full, but the issuer breaks agreed green clauses (KPMG, 2015).

Before issuance, green default clauses and penalties are defined by the issuer and documented in the bond prospectus; these are often based on early inputs from prospective investors.

3.1.6 Evaluate Further Benefits and Challenges of Municipal Sustainable Bonds

3.1.6.1 Evaluate Capital Project Failure Risks

Municipal capital projects often carry substantial and varied risks even after due diligence processes and feasibility studies have been conducted. Project failure might result in the loss of significant capital and revenue and a municipality's ability to deliver services. Broadly, municipal capital projects might fail because of operational failure, financial challenges or market-related causes. Examples include unforeseen structural failures due to extreme weather events, poor project delivery from contractors, poor project management and planning, and failure of projects to generate planned revenue (Lumen, 2020). The extent of failure risks associated with a municipal project vary by sector and type of project.

Project failure could also result in a failure to achieve the bond's projected impacts. If impact requirements are built into bond covenants, this form of green default could have financial implications for the municipality – over and above the negative reputational consequences of green default.

3.1.6.2 Understand the Capacity Needed to Classify Projects as Sustainable

Establishing a sustainable bond framework and identifying eligible projects can be complex and cumbersome. This difficulty is partly because **sustainability metrics have not yet been mainstreamed** in designing and communicating the business case and the benefits and/or challenges of municipal projects.

Municipal sustainable bonds will require that municipalities hone their project design and evaluation processes where these may presently be lacking in accounting for resilience and ESG performance.

Project eligibility evaluation often requires interdepartmental collaboration and cohesion, which municipal officials have highlighted as often being challenging in the South African context.

3.1.6.3 Understand the Capacity Needed to Conduct Monitoring and Evaluation Processes and Ongoing Reporting

Sustainable bonds require that the issuer implements robust monitoring and evaluation (M&E) processes and submits annual impact reports. However, it is **challenging to set baselines, identify project impact and calculate impact indicators accurately**, even given the wide availability of methods and tools.

The sustainable bond reporting process should bring into view any material deficiencies inherent in the project design and evaluation process.

A further factor to consider is the long time frame of regular reporting. Reporting is required at least annually until the municipal sustainable bond reaches maturity.

3.1.6.4 Understand the Opportunity to Benefit from Additional Fiscal Management

As South African municipalities aim to mainstream climate change response initiatives into their fiscal and budgetary processes (DEA, 2007), improved fiscal management will be crucial in achieving these goals. Issuance of municipal sustainable bonds can allow for better fiscal management because of the strict M&E processes associated with them, and will ultimately enable **more seamless mainstreaming of climate change initiatives into fiscal management processes**.

Undertaking a sustainable bond's issuance is a pioneering activity that can have substantial reputational benefit for a municipality. The space for signalling sustainability practices through such pioneering issues is far from saturated. It also has the potential to help integrate good project design and management practices and processes deeper into the municipality.

3.1.6.5 Wider Benefits of Green Market Creation

The development of sustainable bond markets provides more opportunities to finance implementation of the SDGs, climate commitments and other green growth projects (Williams, Jones and Pickin, 2017). The political economy has a central role to play in sustainable markets, and actions from the public sector can create a self-fulfilling prophecy.

Sustainable bonds offer an opportunity to make funds available that can be geared towards achieving climate commitments. Since municipal sustainable bonds are associated with tracking performance, annual reports to investors could constitute a means to track progress against South Africa's NDC and regional climate goals.

As **more capital** is made available for green and sustainable projects (or at least, as there are more and clearer signals that sustainable projects are being considered and favoured), this **creates a fertile environment for more, and more mainstreamed, sustainable activities**.

For example, issuing a sustainable bond can stimulate the development of sustainable goods and services ecosystems, and give rise to economic processes that adhere to the principles of sustainable development. This is useful where a change in mindset is needed; i.e. where municipal services could have been delivered as standard, but could as easily be delivered as green. Choosing the green or sustainable option sets the tone of expectations and increases the number of market participants looking to fulfil such requirements.

A **sustainable goods and services market can be a catalyst for further development** of the domestic capital market and financial system more broadly – and ultimately be a catalyst for economic growth (Williams, Jones and Pickin, 2017). For example, undertaking sustainable financing activities can change the status quo, building momentum in a more sustainable direction and perpetuating better practices around ESG.

3.1.6.6 Take into Account Increased Visibility and Reputation

As the popularity of sustainable bonds and other sustainable finance instruments grows, municipalities working at the forefront will be viewed as leaders (Timbers, 2019). For example, the City of Johannesburg and the City of Cape Town continue to be recognized as pioneers of green bond issuance and continue to be cited in sustainable finance publications.

If the underlying projects and assets to be funded by a municipality through a bond have ESG attributes, the municipality may benefit from labelling the bond as sustainable rather than as just a traditional bond.

Additionally, because of the annual reporting and mandated public disclosure, municipal sustainable bonds allow **enhanced visibility of the municipality's sustainable initiatives** that might not otherwise have received as much local, national or global visibility. This could help build a reputation for the municipality – which might in turn attract more investors.

On the other hand, experts have noted the **risk of municipalities issuing municipal sustainable bonds as a means of greenwashing**. Greenwashing implies that the issuer is primarily interested in branding and marketing, with little intent of achieving impact. This mindset must be guarded against by taking the following types of actions:

- **Integrate the sustainable bond as part of a larger strategic ambition**, e.g. in municipal strategy and planning processes that give rise to the projects funded through a sustainable bond;
- **Comply with international standards** that specify good practice for sustainable bonds; and
- Obtain **independent review** of municipal management processes regarding key aspects of the municipal sustainable bond.

3.1.6.7 Consider How Stakeholder Relationships Could Improve

Municipal sustainable bonds demonstrate the issuer's commitment to long-term sustainable development and hence could improve stakeholder perceptions (CBI, 2015).

Since South African municipalities are required to invite comments from the public on municipal budgets and before a long-term debt proposal can be approved by the council, an opportunity exists for municipalities to engage local residents and for local residents to have their inputs considered regarding the projects sustainable bonds may finance.

General municipal bonds also **offer the potential for residents to invest in their own communities** by accessing the bonds in secondary markets, which could encourage public participation in local-level development.

3.1.6.8 Aligning to National Leadership Ambitions

Funding has been highlighted as one of the main gaps to achieving South Africa's climate change commitments (DEA, 2011). Therefore, a municipal sustainable bond that uses its proceeds for projects and activities that also align to national commitments could be **mutually beneficial**.

3.2 Kick-start Regulatory Procedures and Ensure MFMA Compliance

Before embarking on a bond issuance, an issuer needs to ensure there are **no regulatory barriers** to the issue. This is no different from the requirements the municipal issuer faces when undertaking a vanilla bond or other forms of long-term borrowing in terms of council approvals and informing the National Treasury.

3.2.1 Complying with Municipal Long-Term Debt Policy and Regulation

Since municipal sustainable bonds involve public funds, their issuance must comply with regulatory laws surrounding public debt and financing. In South Africa, there are two main sources of regulation for municipal bonds:

- **The South African Constitution**. The constitution stipulates that municipal councils may, in

accordance with national legislation, raise loans for capital or current expenditure. However, loans for current expenditure may only be raised for bridging purposes during a fiscal year. The constitution therefore allows for municipal borrowing, including long-term borrowing such as municipal bonds, under the condition that the appropriate regulatory procedures are followed. Overall, municipalities are authorized to engage in both short- and long-term borrowing. The **decision to borrow is taken by the municipal council**, without any national or provincial approval; and the obligation to repay is that of the municipality, without any national or provincial liability (National Treasury, 2017).

- **The Municipal Finance Management Act.** The MFMA aims to secure sound and sustainable management of the financial affairs of municipalities and other institutions in the local sphere of government, and to establish Treasury norms and standards for the local sphere of government. It stipulates key regulatory procedures regarding long-term debt. According to the act, municipalities may incur debt for either capital expenditure on property, plant or equipment to be used towards achieving the objectives of local government or refinancing existing long-term debt. The permission for refinancing allows municipalities more flexibility in their infrastructure development and other capital projects (Goebel, 2017). This in turn allows them to **utilize municipal sustainable bonds as refinancing debt instruments**

for sustainable projects originally financed through other mechanisms.

As highlighted in [Figure 3.5](#), while the powers and functions involved in the borrowing procedure are the purview of the municipal council, the mayor and the accounting officer, the MFMA makes provision for inputs from the National Treasury, provincial treasury and the general public. This allows for a wide spectrum of critique, which will ultimately increase the robustness of the proposed debt instrument.

Recommendations from the Policy Framework for Municipal Borrowing emphasize that **municipalities should clearly articulate to prospective investors the financial strategy** underpinning any borrowing, including the intended use of proceeds and the revenue streams that will support repayment of borrowed capital (National Treasury, 2017). Sustainable bond standards similarly stipulate that sustainable bonds should be situated within the issuer’s broader sustainability strategy and framework, that the approach to project selection should be clear and that the use of proceeds must be clearly articulated.

3.2.2 Municipal Credit Rating

A municipal credit rating is a requirement to issue debt on the JSE. It is an assessed measure of a municipal bond issuer’s ability to service and redeem a bond,

Figure 3.5 **Key Regulatory Aspects of Long-term Borrowing in the Municipal Finance Management Act**

<p>Main powers and functions in long-term borrowing procedure</p>	<p>Debt currency</p>	<p>Debt securities</p>
<p>Municipal council</p> <ul style="list-style-type: none"> • Reviews and approves proposed municipal debt <p>Mayor</p> <ul style="list-style-type: none"> • Signs and approves debt after approval from council <p>Accounting officer</p> <ul style="list-style-type: none"> • Signs agreement or other documents that create or acknowledge the debt • Issues a public statement 21 days prior to council meeting, invites public, National Treasury and relevant provincial treasury to submit written comments and feedback to council (Section 46) 	<p>MFMA prohibits taking any currency risks, stipulating that municipality may only take debt if it is denominated to rands and is not indexed to fluctuating currency (Section 47)</p>	<p>Municipalities are allowed to meet essential and reasonable expectations on security of capital lenders (Section 48)</p>
<p>Information to lenders</p>		
<ul style="list-style-type: none"> • Municipalities should disclose all information within their possession that may be material to the decision of that prospective lender or investor • Ensure accuracy of information disclosed (Section 49) 		

Source: Adapted from Goebel (2017).

conducted at a particular point in time. Key questions that underpin the assessment are the **municipality's ability to obtain sufficient cash to service the loan obligation** and its willingness to pay (Moody's Investor Service, 2021).

A credit rating agency will conduct this assessment using a standardized method and apply various weights to credit risk, based on several factors. The agency's ratings are represented based on a scale, and accompanied by a forward-looking professional opinion or an outlook on the municipality's creditworthiness.

Highly rated municipal debt presents the issuer with an opportunity to lower the cost of borrowing from capital markets and reach a wider investor audience. As an illustration, investors that prefer high creditworthiness would come forward to invest in the "safer" instrument whilst accepting a lower return on their investment. Obtaining a credit rating comes at a cost, as credit rating agencies are independent service providers paid either by the bond issuer or by parties with interest in the bond issuance.

Having considered the financial and non-financial benefits and challenges, as well as the regulatory and creditworthiness aspects, the municipality will now decide whether to progress with the development of a municipal sustainable bond. There could be benefits in developing needed capacities up to Step 8, even if the municipality ultimately decides against issuing a municipal sustainable bond for the time being.

3.3 Establish a Sustainable Bonds Steering Committee

Planning for, issuing and managing municipal sustainable bonds requires effective cooperation across an organization in order to deliver on functions including, but not limited to, the following:

- Municipal management;
- Treasury and financial management;
- Strategic planning functions;
- Governance and operational support;
- Service delivery and economic development;

- Departments concerned with service delivery, social development, environmental management, electricity, waste, water and sanitation, housing, etc.;
- Legal counsel;
- Procurement;
- Information technology services;
- Internal audit; and
- Investor and public relations.

Constituting a **municipal sustainable bonds steering committee is recommended and good practice to support coordination across these multiple functions** in an efficient way and to provide suitable oversight and support to the process.

The steering committee membership should include:

- **Actors who understand the financial aspects and those who understand the sustainability aspects** of municipal sustainable bonds; and
- **Sufficiently senior representation to make effective decisions** concerning the municipal sustainable bond and to give direction to the different functional participants who must execute the tasks of preparing, issuing and managing the bond.

The steering committee should have a clear role in the municipal sustainable bond **governance process**, with its role specified in the sustainable bond framework.

3.4 Establish a Coordination Team

Constituting a coordination team is recommended for issuing a municipal sustainable bond. Planning for, issuing and managing municipal sustainable bonds **requires a great deal of proactivity and can benefit from key actors who take responsibility for driving and delivering the process**. This team has a different function than the steering committee. The latter makes selected decisions regarding the bond, whereas the coordination team actually delivers the tasks related to the bond.

These process coordinators are central to the success of issuing a municipal sustainable bond:

- They take a key part in developing the sustainable bond framework.
- They link the functions together for the supporting procedural definitions.
- They are the central contact points for external service providers (such as the arranger, independent reviewer etc.) and can liaise across the organization.

It is important that the coordinators:

- Have **sufficient understanding of the end-to-end municipal sustainable bond process** to regularly and effectively coordinate with other participants;
- Understand **both the financial and sustainability aspects** of the underlying projects and the organization's management of these aspects;
- Are **sufficiently senior** to obtain support from other participants; and
- Have a **mandated role and sufficient capacity** to drive the municipal sustainable bond process.

These coordinators should report to the steering committee.

3.5 Appoint a Sustainability Expert for Framework Design/Development

This step is **not required**, but is to be taken at the discretion of prospective issuers that might need additional external expertise to design a comprehensive and responsive framework.

A provider of a second-party opinion might be able to provide advisory services; the independence requirements for third-party assurance providers means that they can only provide either assurance or advisory services to avoid any conflicts of interest. It is therefore recommended as good practice to have different providers for these respective parts of the process, if advisory services are needed at all.

3.6 Design Sustainable Bond Framework

The sustainable bond framework is a procedural document that **communicates the issuer's governance and management process**. It is developed by the issuer before issuance, with the support of specialists if needed. It will be supported by other existing procedures and processes, which should be documented in the framework.

The sustainable bond framework is:

- **Required by international standards**;
- To be **reviewed by the independent sustainability reviewer** and a report provided to the JSE as part of JSE listing of the bond on the sustainability segment;
- To be **disclosed to investors** – a requirement by the JSE and an expectation by investors; and
- To be **publicly published**, such as on the issuer's website and in connection with the sustainable bond issued – again, a requirement by the JSE and good practice.

The sustainable bond framework should **provide as much clarity and substance as possible** concerning the process for managing the municipal sustainable bond. It should make commitments and state intentions **in clear, specific language**. These commitments and intentions must be matched in practice once the bond is issued, so the framework should be backed up with **robust, transparent, identifiable and dependable processes**. Procedures should be documented and actors identified and informed of their roles.

Typically, the sustainable bond framework is a **brief document**. General practice is to provide an outline of the key parts of the governance and management process and identify the specific underlying procedures relevant to the sustainable bond.

The sustainable bond framework is typically made up of five parts corresponding to the structure of international standards, plus a sixth part providing situational and strategic content and content related to external reviews. These parts are described in the next subsections.

3.6.2.1 Introductory Content

This part consists of the following:

- An overview of the issuer's organization;
- An introduction to the issuer's approach to sustainability and sustainability efforts made to date – this could describe a “journey” of sustainability and/or explain the sustainability-focused functions within the organization and how these connect to the municipal sustainable bond; and
- Any regulatory references that apply, such as the MFMA, the Municipal Systems Act and/or actions in terms of delivering on a strategic mandate.

3.6.2.2 Use of Proceeds

This part defines the types of projects and assets that can be supported under the sustainable bond framework, and provides the definitions and technical parameters for financing; it should include the following:

- Clearly and specifically identify, qualify and (where possible) quantify the impacts and benefits of the use of proceeds, including commitment to disclose the methods to investors.
- Disclose the proportion of financing versus refinancing that is considered, and what the limit for refinance of historic projects are (the “look back period”).
- Define the themes for and list the types of eligible projects.

3.6.2.3 Process for Project Evaluation and Selection

This part sets out the process of how projects will be identified and how the issuer will go about validating the eligibility of projects and assets to be financed by the municipal sustainable bond.

- Situate the sustainable bond in the context of existing sustainability, climate, social etc. strategies, policies, plans and existing procedures. This information frames the broader objectives; the projects and assets financed by the sustainable bond should be consistent with the organization's broader context.

- It is generally expected that a municipal sustainable bond issuer is actively focused on sustainability matters, and that a sustainable bond is not “tacked on” or something done apart from an organization's core efforts in sustainability.
- It is preferable that existing procedures be leveraged for municipal sustainable bonds, even if these must be enhanced or supplemented. If municipal sustainable bonds are managed in a completely separate process, there is a potentially increased risk of mismanagement and this may indicate a non-integrated approach to sustainability.

- List the specific eligibility and exclusion criteria (as applicable). This is where taxonomies may be of use.
- Describe how the issuer will evaluate prospective (or nominated) projects against eligibility criteria, so as to identify the subset of projects that are eligible for sustainable bond financing. The issuer will need to demonstrate having followed this process for the external reviewer; therefore, a documentary process should be developed that includes necessary checks to ensure the process can be executed consistently and demonstrably.
- Identify any specific sustainable bond standards or other certifications the issuer intends to meet.

3.6.2.4 Management of Proceeds

This part considers the processes to be followed when the bond's capital clears and the net proceeds are deposited with the issuer (or with a holding agent). The management of proceeds is required throughout the tenor of the bond, and the process should detail how this will be done. The framework should make clarify the following:

- How net proceeds will be received (i.e. into what form of account, how they will be managed and separated or not from other funds);
- How net proceeds, disbursements to eligible projects and the remaining balance will be tracked and recorded;
- How the remaining balance (the amount that has not yet been disbursed to eligible projects) will be managed, where funds will be temporarily placed,

and how these will be matched and allocated to eligible projects; and

- How these processes will take place within the organization's existing investment and lending operations (i.e. whether a special arrangement to prevent contamination¹ is required).

3.6.2.5 Reporting

This part addresses the following:

- Regular internal management reporting (which should be sufficiently frequent to identify material developments and take effective remedial action, triggering external reporting where required by contractual terms, such as with a standards body or with investors); and
- External reporting, at least annually to the JSE, investors and the public.

This reporting should continue as long as the bond is outstanding and should contain relevant information, including at least the following:

- Details of the net proceeds, the total use of proceeds and the remaining balance;
- A list of the projects and assets funded (including project details, amounts financed and projected impacts).

The preceding two points are collectively called "allocation reporting" or "use of proceeds reporting".

- Projected (ex ante) impacts, communicated via the use of qualitative and, where and to the extent possible, quantitative.

¹ Contamination here refers to when net proceeds from a sustainable bond are used for a completely incompatible application, even on a temporary basis. For instance, if before being disbursed to an eligible project, the net proceeds of a climate bond are temporarily allocated to a short-term investment account that supports coal-powered electricity-generation projects, these funds would be considered contaminated. The same applies to social projects where funds have unwittingly been used for projects that are detrimental to social progress or inclusivity.

This is called "impact reporting".

The selection of indicators should ideally align with harmonized guidance provided by ICMA through its [Handbook – Harmonized Framework for Impact Reporting](#) (ICMA, 2020a) for environmentally focused projects and [Working Towards a Harmonized Framework for Impact Reporting for Social Bonds](#) (ICMA, 2020b) for socially focused projects.

- It is good practice to monitor actual impact (ex post), and to report on these results.
- The methodologies applied to determine projected and actual quantitative impacts should be disclosed in sufficient detail so that users of this information can understand the approach, as well as assumptions.

See [Appendices A](#) and [B](#) for further resources on indicators.

3.6.2.6 External Review

Generally, this part commits to undertake external reviews. This might be a general commitment that leaves the issuer flexibility to determine what type of external review to undertake in a particular instance, or it could be a very specific statement for particular circumstances. In any event, the issuer must deliver on these commitments to external reviews.

- International standards specify that an external review should be undertaken at least at the pre-issuance phase.
- It is good practice to have post-issuance external reviews undertaken, which can cover allocation reporting, impact reporting or both.
- The JSE requires pre-issuance external review; it does not require post-issuance external review.
- The results of these reviews should be made publicly available and shared with bondholders.
- The CBS requires third-party assurance and pre- and post-issuance assurance (thus specifying the type and minimum frequency).

The international standards provide further guidelines on what to expect and require of external reviews and external review providers.

Following are links to reports from other South African issuers detailing their sustainable bond frameworks:

[Nedbank Sustainable Development Goals Issuance Framework \(April 2019\)](#)

[Development Bank of Southern Africa DBSA Green Bond Framework \(January 2021\)](#)

[City of Cape Town Green Bond Framework \(May 2017\)](#)

[Standard Bank Sustainable Bond Framework \(May 2020\)](#)

3.7 Establish and Refine Processes and Controls

In this step, the issuer ensures that all aspects of the procedural environment are fully detailed in supporting documentation, **delineating all processes, activities, systems, roles and responsibilities.**

Each issuer will approach this slightly differently, using its own procedural environment and naming conventions. Identifying or developing the refined processes and controls should span from the beginning of the financial management process (i.e. receiving the net proceeds) through to final disbursement of funds to eligible projects; it should include all checks, approvals, tracking and reporting mechanisms. Project identification should be fully documented, through eligibility determination, funds earmarking and disbursement, and impact monitoring.

To the extent possible, **existing procedures and processes** should be referred to, relied upon and/or integrated. Care should be taken, however, that existing procedures and processes are tailored as needed to accommodate the sustainable bond. It is recommended that the specific details of the standards should be considered to determine whether an existing procedure is suitable or sufficient.

The processes and controls identified in the sustainable bond framework must match those applied in practice. Thus, the details developed in conducting this step

must match those in the sustainable bond framework developed in Step 6 (3.6). The development of the draft sustainable bond framework and the detailed procedural environment could be iterative until both are finalized.

To ensure that processes are fully defined, the issuer should ask (and answer) “then what happens?” and “who does that?”, until the process is complete.

3.8 Identify and Select Projects

3.8.1 Requirement

It is a requirement of sustainable bond issuance that the actual activities, projects and assets to be financed are clearly identified by the issuer in the pre-issuance phase, in line with the eligibility criteria set out in the sustainable bond framework (3.6) and the budgeting and approval processes established in the preceding step.

Projects and assets identified at the pre-issuance phase may later be removed from the portfolio of eligible projects and substituted with other projects. Substitutions must conform with the requirements of the sustainable bond framework in all respects, be aligned with bondholder requirements and be communicated.

3.8.2 Incorporating Sustainable Projects in Municipal Plans and Budgets

Municipal investment processes follow a long-term capital improvement plan, outlined in a municipality's integrated development plan or a metropolitan area's built environment performance plan (BEPP). The integrated development plan is drafted every five years and covers functional and institutional planning, including the municipal spatial development framework. The BEPP takes its cue from the municipal spatial development framework but additionally provides direction (prioritizing, mobilizing and sequencing) to strategic developments and infrastructure investment. For cities, the BEPP is a critical instrument in identifying

and securing funding for catalytic projects and priority interventions (Cities Support Programme, 2018).

These planning frameworks feed into an annual municipal financial management cycle characterized by planning, budgeting, implementation and M&E. [Figure 3.6](#) provides a high-level depiction of how the municipal management cycle overlays with international standards.

All municipal projects, including sustainable projects, are subject to initial screening against established frameworks before they can be approved by the council. Large projects are required to go through a number of approval processes involving successively more detailed planning before being considered for funding through the budget (National Treasury, 2020b).

Municipalities often need to compile a detailed business plan that further demonstrates the financial feasibility of each of project and [how the project contributes to the municipality's broader plan](#) (SALGA, 2014).

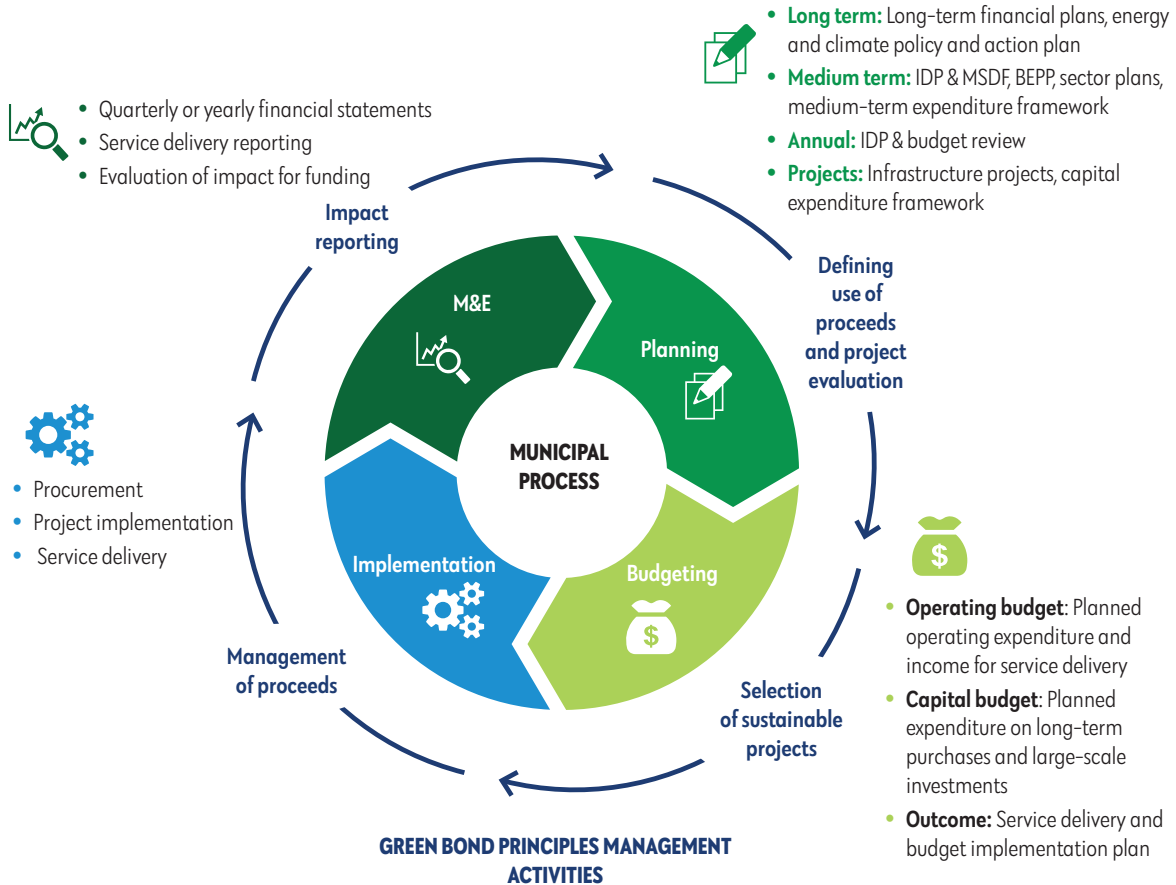
Municipalities also need to ensure that the council understands the technical and organizational aspects of the each project, [what it aims to achieve \(financially, technically, socially and environmentally\)](#), who will be involved, [who will benefit](#) and the risks associated with the project (and how these can be managed) (SALGA, 2014).

3.8.3 Identify the Municipal Sustainable Bond List of Projects

The specifics of project selection and prioritization vary from municipality to municipality, and there are different ways projects could be identified. However, all municipal capital projects are subject to the same evaluation processes, which thus provide a convenient starting point. A municipality could identify eligible projects using the following resources:

- [Medium-term revenue and expenditure framework capital budget allocations and detailed capital](#)

Figure 3.6 **Municipal Financial Management Cycle and Core Sustainable Bond Management Activities**



project reports. Scan entries to identify projects that could fall within the eligibility criteria or taxonomic themes. Detailed eligibility evaluation processes must be followed as set out in the sustainable bond framework.

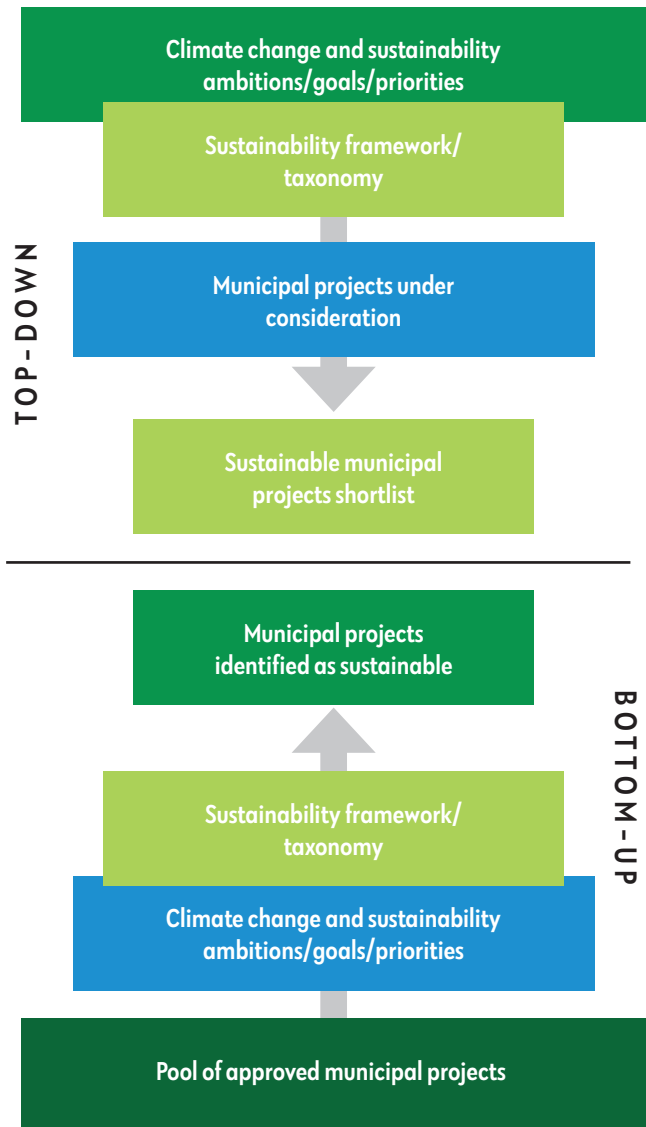
- **Capital project application proposals.** These are a more centralized resource from which nominated projects could be identified, particularly looking at those proposals at the evaluation stage whose business cases have been reviewed. If these project proposals include sustainability performance information, capital projects that are approved and have sustainability impacts can be “tagged”, and moved into a register of potentially eligible sustainable projects.²

The method used for **integrating or identifying green or sustainable projects in the municipal project pipeline** can reflect one of two broad approaches depending on a municipality’s departmental structure and protocols – either top-down or bottom-up, as shown in [Figure 3.7](#).

- **The top-down approach** involves applying a climate change or sustainability lens as well as a sustainability framework at the selection phase of municipal projects. For example, the City of Cape Town successfully implemented a strategic management framework for project pipeline development that involves strategically aligning the budget to the city’s priority areas. Within that budget is an allocation for sustainability and climate change adaptation priorities that require financing. According to the City of Cape Town, implementation of the framework ensures that what enters the capital programme has strategic justification.
- **In a bottom-up approach**, a municipality starts with a pool of already approved projects and undertakes a process to identify which of them could be considered sustainable. The pool of municipal projects is subjected to the sustainability framework and

²This is a rather “sidelined” approach to sustainability. Ideally, sustainability characteristics should be represented and evaluated for all capital and operational activities and projects. Realistically, as municipalities are only beginning to mainstream such processes, these less integrated approaches are good starting points.

Figure 3.7 **Illustration of Different Approaches to Identifying Sustainable Projects**

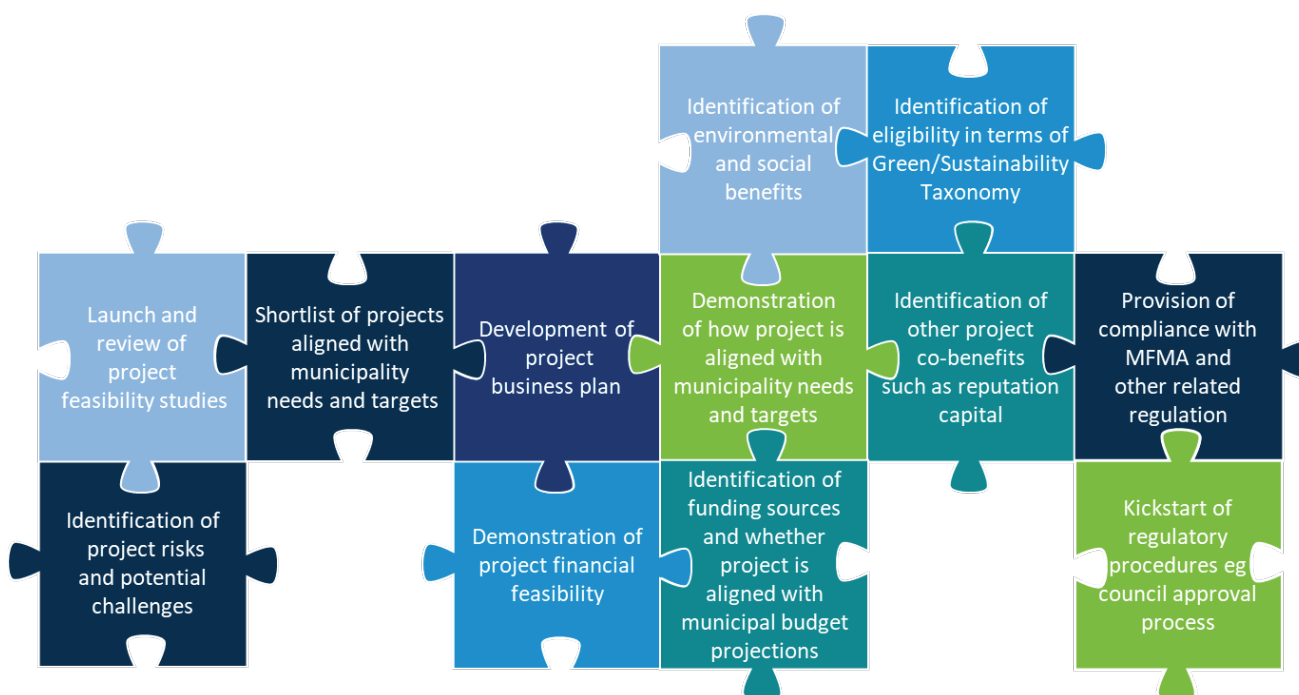


climate change strategy so sustainable projects are identified.

[Figure 3.8](#) illustrates some of the key elements considered in pipeline development.

Once the eligible projects are selected according to the process defined in the sustainable bond framework, **a list or register of projects associated with the municipal sustainable bond can be created.** This register will include details about the projects, budgets, disbursement schedules (aligned to the medium-term revenue and expenditure framework), relevant impact themes, indicators and projected impacts. It becomes a central

Figure 3.8 Key Elements Involved in Building a Project Pipeline



tool for communications and management of the municipal sustainable bond.

3.9 Engage Transaction Advisor/Underwriter/Arranger

Generally, it is recommended that issuers and their arrangers begin engaging relevant investors well in advance of bond placement. This could include informal engagements with potential investors ahead of undertaking targeted roadshows (3.16), as roadshows often occur in the lead-up to bond auction.

The rationale for this **early engagement** is to determine the types of terms and documentation prospective investors would require to make an appropriately informed decision as to whether to invest, and to negotiate terms (or covenants) that might be required by specific investors. It may entail providing prospective investors with a draft of proposed placement documents to provide an opportunity to receive comments and feedback well ahead of actual placement (DIA, 2017).

This approach is similarly valid for a **green, social or sustainability bond**, where this label might draw particular interest from investors, as well as particular expectations for use of proceeds, management of proceeds or reporting – which should be understood as early in the process as possible.

Existing municipal procurement processes for engaging advisor/underwriter/arranger services should be followed. Early engagement is encouraged to ensure that support can be provided to the municipality in a timely manner.

3.10 Engage Legal Advisory Support

External legal advice may be needed in formulating or engaging with prospective investors on complex covenants, drafting instrument documents and preparing legal opinions as needed. It is possible that the municipality has internal legal capacity suitable for these interactions, or that the transaction advisor will provide such support. In cases where **specific covenants** are sought by investors concerning sustainable bond performance or ESG requirements, specialist advice may be needed.

3.11 Commission Pre-issuance Gap Assessment

A gap assessment is not a requirement. However, for first-time municipal sustainable bond issuers – especially in cases where the issuer has designed its own sustainable bond framework and/or the coordination team may have limited experience with external reviews such as audits and assurance exercises – **it is worth considering having a gap assessment done.**

A gap assessment can be thought of as an **assurance-readiness exercise**. It should have the same scope and seek to follow the same processes as an external review.

The results of a gap assessment would be a report to management that identifies **gaps and weaknesses in the sustainable bond framework** and supporting procedural environment. The issuer can then address these in sufficient time before a full external review process (3.12) is undertaken.

A gap assessment could be performed by the same service provider appointed for the external review; in which case, **there might be cost efficiencies to be gained** because the service provider will have the opportunity to become more familiar with the issuer team and processes.

The benefit of doing a gap assessment ahead of issuance is that this **can reduce the pressure on the issuer and the service provider against deadlines** dictated by the issuance process. It also serves as a **dry-run** for the issuer, enabling the municipality to become more comfortable with the processes and better prepared for implementation at issuance and post-issuance.

3.12 Obtain Independent External Review

The type of external review a municipality is to obtain at the pre-issuance phase is determined by the following:

- The specifications in **the sustainable bond framework**;
- The requirements of the JSE sustainability segment – at present, the JSE accepts second-party opinions

and third-party assurance provided by independent and suitably experienced and credible service providers, against the ICMA standards; and

- The requirements of the international standard the issuer has selected (e.g. ICMA GBP; CBI's CBS).

The external reviewer will likely provide the following to the issuer:

- **A report of interim findings or issues, addressed to management and for management's attention.** There may be a range of findings covered in the report, from serious (or material) to relatively minor.
- **The opportunity for management to react to and remedy the findings and issues.** Management should endeavour to address the findings through improvements to the framework or procedures etc., and to particularly address any material findings or issues (or gaps in the framework or procedures). If these remain unaddressed, the final external review report will document these issues and may be unfavourable in terms of the sustainable bond and prospective issuer.
- **A final external review report.** This can be either a verifier's report, second-party opinion or assurance report, depending on the type of review conducted. This final report is to be associated with the sustainable bond and should be made public and provided to prospective investors.

While it is generally discouraged, in the interest grounds of independence, that the external reviewer be the same service provider that supported the design of the framework (3.5), the external reviewer might have provided assurance readiness services as described in the previous step.

Generally, the same external reviewer provides pre-issuance and post-issuance services, using this perspective to evaluate effective implementation of the processes and controls documented at the pre-issuance phase.

The **JSE requires that the external reviewer's independence and competence be evaluated** at pre-issuance and reported to the JSE, and that continued independence be evaluated and declared at the time of annual reporting by the issuer to the JSE and bondholders.

There is no specific list of approved external reviewers in South Africa, although a sample list of typical providers – and the types of external reviews – is given in [Tables 2.3](#) and [2.4](#). Solicitation and evaluation of services, value, competencies and experience must be done by the municipality's procurement function according to its criteria.

The [fees for the external review](#) will depend on the scope and nature of services provided – that is, whether only a pre-issuance review is required or pre- and post-issuance reviews; and whether validation of impact reporting is included in the scope.

Existing municipal procurement processes for engaging these services should be followed. Early engagement is encouraged to ensure that support can be provided to the municipality in a timely manner.

There is [no specific requirement to rotate external reviewers](#) for multiple sustainable bonds. This is at the discretion of the issuer.

3.13 Obtain Council Approval

Final municipal council approval for the municipal sustainable bond as long-term debt is required for the issuance to proceed. If the process is well-planned in advance, the timing of the external review and the finalization of the prospectus and bond structure will be complete and ready for inclusion.

Any work performed by the arranger/underwriter on the prospective municipal sustainable bond must be completed so the approvals application submitted to the council has all relevant cost details for its consideration.

3.14 Register/Apply

This step is the juncture between the end of the pre-issuance and start of the issuance phases. At this point, the sustainable bond framework has been finalized and the external review successfully completed; the processes to execute investor roadshows, finalize bond documentation (prospectus, or applicable pricing schedule) and conduct the auction have been planned and are about to commence.

ISSUANCE PHASE

3.15 Engage with Prospective Investors and the JSE

The transaction advisor would likely have already begun engaging with prospective investors and the JSE much before this step. What is required at this point, irrespective of earlier and informal engagements, is the following:

- [Finalize the prospectus and the applicable pricing schedule](#). As detailed in [2.2.2](#), the applicable pricing schedule for a sustainable bond to be listed on the JSE sustainability segment must contain specific information regarding the use of proceeds, confirmations regarding the external reviewer, reporting commitments, and the sustainable bond framework or reference to a public publication. Finalizing the applicable pricing schedule may require several revisions and enhancements to satisfy all requirements.
- [Engage prospective investors](#). This engagement should address specific requirements relating to the sustainable bond or other covenants. It is also useful to make reference to any external reviews, certifications and/or ESG rating processes that are underway when engaging investors early on.
- [Plan the roadshow](#). The roadshow will take place before the bond auction, and marketing materials and supporting documentation must be planned for this. External review, certification and/or ESG rating outputs should be planned so they can be included in marketing packets to investors.

3.16 Engage in Marketing Roadshows

A successful roadshow is critical to bond issuance of any kind. Generally, all details of the planned placement are complete or nearly complete by the time roadshows are undertaken. The transaction advisor leads this activity.

Municipal sustainable bond issuers typically include additional information concerning the credentials of the bond in the marketing materials when undertaking roadshows, such as the following:

- The sustainable bond framework; and
- Outputs from external review.

3.17 Issue the Bond

On the day of the bond auction, investor management and bidding processes are coordinated by the transaction advisor and the JSE platform services. At the close of the auction, depending on the bond's performance, a volume of the marketed bonds will have been sold to investors, and the JSE and transaction advisor will be in a position to report on the financial results.

Once the auction has closed and the financial details have been confirmed, **public announcements of the municipal sustainable bond are typically made by the municipal issuer**. Sometimes these announcements and press releases are made in conjunction with cornerstone ESG investors, certification or ratings agencies, the underwriter/transaction advisor or the JSE. **Municipal communications and investor relations teams can support such efforts**.

If the municipal sustainable bond is conducted as a private placement, it is at this step that the agreements are finalized and co-signed, and the processes for transferring and clearing the invested capital are initiated.

POST-ISSUANCE PHASE

3.18 Allocate and Manage Proceeds

At this step, the issuer must begin managing the proceeds of the municipal sustainable bond in precise alignment with the sustainable bond framework.

Ultimately, **management of proceeds should be such that clear tracking of funds can be demonstrated**. It should be evident what net proceeds were received, how funds were managed, and that the proceeds are reduced as earmarking/disbursements take place.

The management of proceeds is a key focus for post-issuance external review, if undertaken.

3.19 Earmark Projects and Make Disbursements

This step entails the process of use of proceeds as described by the sustainable bond framework (and as committed to in the applicable pricing schedule to investors). The process involves determining which funds are disbursed to the eligible projects or set aside or notionally allocated for eligible projects, throughout the tenor of the bond.

3.20 Conduct Project M&E and Tracking

Throughout the bond's tenor, the financial aspects of proceeds management must be monitored, and the projects to which proceeds are allocated and disbursed must be monitored and evaluated as appropriate and as described in the sustainable bond framework. These processes must be sufficiently robust to provide credible management and investor information.

3.21 Commence Periodic Reporting

The market considers post-issuance reporting to stakeholders to be very important; it is especially valued by investors and the financial industry. Post-issuance reporting in South Africa typically includes the following:

- **Mandatory annual reporting** in terms of the requirements of ongoing JSE obligations, which requires post-issuance reporting on the use of proceeds and on impact to investors. This reporting is not necessarily made public.
- **Voluntary reporting**, which could be at any frequency and on the municipal issuer's preferred reporting platform, such as annual reports, sustainability reports, websites, or ad hoc public reports or case studies. These voluntary reports typically include information on the use of allocation/proceeds and/or their impact.
- If a CBI certification was sought, **annual post-issuance reporting** to the CBI Secretariat is required as specified in the agreement with the CBI.

Municipalities should decide on their approach to voluntary annual reporting and integrate the mandatory reporting requirements, specifying the approach and procedures in the sustainable bond framework. At this step, the municipality should deliver the details as set out in the framework.

Municipalities publish public annual reports; these contain information on activities undertaken and on financial performance. Especially for larger municipalities, these reports have begun to include reporting on sustainability activities and performance. **Annual reports could be enhanced to include a section that**

deals with the sustainable bond – ideally reporting on both the use of proceeds and the bond’s impact.

Figure 3.9 summarizes the tasks involved in annual impact reporting. ICMA and the CBI each provide recommendations concerning post-issuance good reporting practice that should be considered when developing the sustainable bond framework and practiced when undertaking reporting.

After the issued bond reaches maturation, the issuing municipality can close off its annual impact reporting to investors.

Figure 3.9 Summary of Recommended Impact Reporting Process



Source: Adapted from ICMA (2020).



4. Case Studies



Two case studies of subsovereign sustainable bonds are presented in this section, in Africa and Latin America, respectively. These cases have each been cited as leading examples of municipal bonds, attracting competitive financing for vital, strategically aligned city climate mitigation and adaptation needs. These case studies highlight the instruments' key attributes, the issuers' process and approach to meeting the requirements of the applicable international standards, and the direct and subsequent benefits.

4.1 City of Cape Town Inaugural Green Bond

4.1.1 Details of and Rationale for the Green Bond

In 2017, the City of Cape Town launched its inaugural green bond, becoming the second South African municipality to issue a green bond and the first in South Africa to be certified by the Climate Bonds Initiative. The launch of the green bond was part of an effort to demonstrate its sustainability commitments and credentials, mainstream sustainability within the city and diversify its funding mix with the aim of targeting investors with sustainability mandates. The City of Cape Town is also a member of the [100 Resilient Cities initiative](#) and the [Global Covenant of Mayors for Climate and Energy](#), and reports annually to the [Climate Disclosure Project](#).

While the main driver was the desire to advance sustainable finance and showcase its efforts and progress in climate mitigation and resilience, the use of a long-term debt instrument was also determined to be suitable for the city's funding needs at the time. The bond presented an [opportunity to match capital to a mix of priority, climate-impactful projects](#) to be financed and refinanced.

The green bond was issued as part of the city's existing Domestic Medium-Term Note Programme; to date, it is one of four issuances under the programme. [Table 4.1](#) summarizes the main features of the bond.

4.1.2 Pre-Issuance and Issuance

To kick-start the pre-issuance process, City of Cape Town began by developing a green bond framework which included agreeing and setting the objectives of the green bond issuance; situating the framework in the city's existing climate change strategy and plans; and linking the framework to the city's existing organizational procedures, especially those related to financial management and treasury.

In situating the green bond within the context of the city's strategy, its relevance was identified as stemming from the following:

- The city's adoption of an Organizational Development and Transformation Plan (ODTP), aiming at more "responsive, more proactive, and customer-centric government";
- Transformational plans and programmes in terms of the ODTP and the city's new Integrated Development Plan (City of Cape Town, 2017); and
- The City of Cape Town's 2016 Environmental Strategy and Climate Change Policy.

The pre-issuance phase also involved the [identification of projects and their associated budgets](#) and the establishment of reporting procedures within the city. The identified projects had to be aligned with the city's medium-term revenue and expenditure framework and with the CBI's Sustainable Projects Taxonomy.

To support and enhance the process, the city took the following actions:

- [Developed nominated project evaluation templates](#), to document nominated projects' characteristics and to ascertain and record whether they

Table 4.1 Summary of City of Cape Town's Inaugural Bond Elements

Type of bond	Climate bond
Bond standard	Climate Bonds Standard V2.1
Type of bond structure	Use of proceeds bond, listed on JSE green bond segment (now sustainability bond segment)
Value	R1 billion (\$67 million)
Interest + capital repayment term	10 years
Bond yield	10.17 % (Issued at R186 rate + 1.33 %)
Estimated transaction costs	<p>Transaction costs breakdown:</p> <ul style="list-style-type: none"> • Bond arranging fees: R400,000 (excluding VAT) • CBI processing fee: R10,000 (no VAT included) (1/10th of a basis point of the bond size) • Bond assurance fees: \$20,000 (including VAT) <p>Non-quantified costs:</p> <ul style="list-style-type: none"> • Internal team (time spent) • Reporting (pre and post) • Investor roadshow
Use of proceeds	<p>Mitigation and adaptation projects:</p> <ul style="list-style-type: none"> • Reduction of water losses (water distribution and demand management devices, water treatment, water storage infrastructure maintenance) • Flood defences and coastal structures • Resource efficiency – energy/carbon savings • Low-carbon transportation
Public documents	<p>City of Cape Town Green Bond Framework City's Green Bond Press Release (2017)</p> <p>Documents repository concerning the green bond on City of Cape Town website</p> <p>Green bond's Applicable Pricing Supplement</p> <p>Details of underlying projects in Moody's Green Bond Assessment</p>

Source: Maguire (2018).

met framework requirements and the requirements of applicable technical standards regarding climate change mitigation and adaptation impacts;

- **Developed a register of eligible projects** associated with the climate bond, which covers all key information about the projects including their climate change mitigation and/or adaptation relevance and their budgets and disbursement profiles; and
- **Used its existing enterprise resource planning system (SAP)** to tag projects as green and associated with funding from the prospective climate bond.

The city noted that the decision to certify the green bond through the CBI against the CBS was based on a desire to demonstrate the credibility of the underlying projects (City of Cape Town, 2017). Doing so placed a high bar on the requirements for project evaluation processes, especially with regard to their **adaptation features and impacts**. The CBS technical standards required the city to evaluate the resilience of long-lived infrastructure included in the portfolio of eligible projects, and to consider the specifics of the ecosystem-based adaptation approaches included in some of the projects. It also set the bar high on being able to quantify and project climate change mitigation impacts, so investors and the city could confidently state that projects would be climate-impactful.

Evaluating the candidate projects at this level of detail required cooperation between different technical units, and ultimately ensured the credibility of the projected impact of the projects put forward for the climate bond. The cooperation and cross-functional collaboration within the city has been highlighted as one of the major benefits of the process. Although challenging, it was also unifying and helped different functions begin to understand their roles in the context of the city's climate action planning and delivery.

To allow for an independent review and satisfy JSE requirements, the City of Cape Town appointed KPMG as its third-party assurance provider before official submission of its application to the CBI, as well as for the post-issuance review required by the CBI.

At the pre-issuance phase, the review conducted focused on conformance of (i) the framework and processes to CBS pre-issuance requirements and (ii) the candidate projects against CBS technical standards.

The independent assurance report was submitted to the CBI to support the city's application for certification. Subsequently, **the city was issued a pre-issuance certificate** by the CBI; both the certificate and the report were **included in its marketing information and roadshow**.

As part of the issuance process, the City of Cape Town **received a bond credit rating from Moody's Investors Services**. Based on the rating agency's assessment, the city scored an "excellent" rating for its governing processes, and planned use of proceeds and M&E processes.

The city made use of transaction advisory support to ensure the competitiveness of its bond and its financial robustness. The lead arranger was RMB. As a final step before issuance, the city engaged in a marketing roadshow aimed at soliciting a wide pool of potential investors, which would enable a competitive bidding process. A press release (City of Cape Town, 2017) promoting the roadshow highlighted municipal operational features and prudent financial management, including the following:

- Integrated development plan implementation success rate;
- Municipal audit record;
- Municipal capital spent on infrastructure and maintenance;
- Progress on climate-related projects' roll-out; and
- City's national credit rating and financial standing.

Although there were costs associated with the various stages of bond issuance (Table 4.1), the city also highlighted that these additional costs were moderate and comparable to traditional bond issuances.

4.1.3 Bond Reception

The city's green bond was well received, with a quadruple oversubscription. A total of 29 investors, including a new mix of asset managers, participated in the bidding process.

Both the CBI and Environmental Finance named Cape Town's bond Green Bond of the Year for 2018. Since the launch of its green bond, the City of Cape Town has

been cited in several publications as a leading example; it continues to be **recognized as one of the pioneers of green bond issuance in South Africa**. Additionally, since the bond issuance was strategically linked to the launch of the city's climate change policy, it was instrumental in streamlining the project selection process to include climate change mitigation and adaptation priorities (KPMG, 2019).

4.1.4 Post-Issuance

The post-issuance stage focused on processes related to allocation of funds, tracking of project performance, and reporting on use of proceeds to relevant stakeholders and conformance to the CBS (KPMG, 2019). During this phase, the city committed to **post-issuance reporting, including posting on the city's website**, providing updated details on the projects, including the amounts of funds allocated and unallocated as of the reporting date, along with a description of the projects' environmental benefits and associated quantitative measurements to the extent available (Moody's Investor Service, 2017).

The Moody's Green Bond Assessment rating was updated in 2019, which maintained its "excellent" (GBI) rating (Moody's Investor Service, 2019). In its report, Moody's documented that the City of Cape Town had developed a staged approach to project and impact reporting, consisting of the following:

- Initial reporting would focus on technical project implementation (one- to three-year focus); and
- Reporting thereafter would be progressed to enable identification of and reporting on environmental outcomes and impacts in terms of short-, medium- and long-term results, effects and changes (3–5 and 5–10-year focus, respectively).

The City of Cape Town has not yet begun reporting on project impact, but has committed to do so imminently. Since the launch of this bond, the emphasis on and expectations for impact reporting have grown significantly.

The **city's 2018/19 annual report has a specific section reporting on the use of proceeds of the green bond** (see Table 4.2 for an extract of the proceeds allocation

Table 4.2 **Climate Projects Partially Funded by the City's Green Bond**

Project name	Proceeds allocated (ZAR)
Upgrade to reservoirs citywide	4,630,825
Pressure management: zone metering and valves	14,694,307
Treated effluent: reuse and infrastructure upgrades	44,350,768
Water meter replacement and conservation programme	830,816,752
Replacement and upgrade of sewage pump station	4,431,377
Sir Lowry's Pass River upgrade scheme	22,114,284
Coastal structures rehabilitation	19,001,782
Replace and upgrade sewer and water supply network citywide	59,959,905
Total	1,000,000,000

reporting), and the green bond capital is distinctly recognized in the annual reports' financial reporting.

4.1.5 Benefits of City of Cape Town's Green Bond Issuance

Whilst the City of Cape Town has highlighted that there was not a significant "greenium" associated with the issuance of the bond and that the bond costs (repayment and yield) were comparable to current costs of capital from other sources including concessionary loans, it notes a number of important non-financial benefits that accrued largely as a result of the issuance. These included the following:

- **Access to a new pool of investors.** Issuance of the bond attracted a new set of investors that were particularly interested in sustainable or green investing, allowing for improved stakeholder relations between the city and these investors.
- **International and local recognition.** The country was recognized as a pioneer of green finance, helping to cement the city's reputation for climate action and proactivity.

- **Increased awareness of sustainable standards that could be applied to project selection in the future.** This has helped frame further discussions about the assessment of future infrastructure development plans in the city (Environmental Finance, 2018).
- **Increased inter-departmental collaboration.** City departments collaborated on project selection and on embedding climate change mitigation and adaptation strategies in city operations.

4.1.6 What's Next?

The city has indicated it is open to further green bond issues, but that at this time its financial requirements do not prioritize this financing instrument.

However, the benefits the Green Bond brought continue to play out in the municipality, especially in terms of closer cross-functional cooperation (especially between planning, financial and sustainability functions) and the mainstreaming of climate action.

Subsequent to the green bond issue, the city is in the process of instituting project evaluation processes that more clearly focus on environmental and social attributes, and promote project ESG impacts. This effort is at an early stage, but the distinct inclusion of ESG and climate change in project evaluations down to the project manager level is expected to elevate the significance of these issues amongst other financial, technical and impact considerations – and in time to improve the resilience of the portfolio of projects and assets invested in by the city.

4.2 Mexico City Sustainability Bonds Programme

4.2.1 Details of and Rationale for the Green Bond

In December 2016, the City of Mexico placed its first green bond on the Mexican Stock Exchange, making it the first city in Latin America to issue a green bond. Issuance of the green bond was part of an effort to implement Mexico's policies and programmes, which

included the Climate Action Programme (2014–2020), the Climate Change Fund and the Climate Change Law.

Mexico City had already developed M&E systems that encouraged transparency, had good creditworthiness and a suitable pipeline of intersectoral projects. This contributed to a favourable enabling environment, which made issuance relatively easier. [Table 4.3](#) summarizes the main features of the bond. [Figure 4.1](#) illustrates the distribution of the bond proceeds across the various sectors, and [Table 4.4](#) details the allocation of funds for the different projects funded by the green bond in 2016.

Table 4.3 Summary of City of Mexico's Sustainability Bond Programme

Type of bond	Green bond
Bond standard	ICMA SBG, including the GBP in relation to environmentally focused components and the SBP in relation to socially focused components
Type of bond structure	Use of proceeds bond
Value	1 MXM billion
Interest + capital	5 years

4.2.2 Approach to External Reviews

As part of the issuance process, Mexico City appointed Sustainalytics to review its green bond framework and provide a second-party opinion. Sustainalytics' opinion noted that the planned use of proceeds had clear positive environmental impacts and were likely to contribute to achieving Mexico City's environmental targets to reduce greenhouse gas emissions, increasing the city's resilience to climate change and achieving SDG 11 (Sustainable Cities) (CDMX, 2017).

Figure 4.1 Distribution of Proceeds across Various Sectors

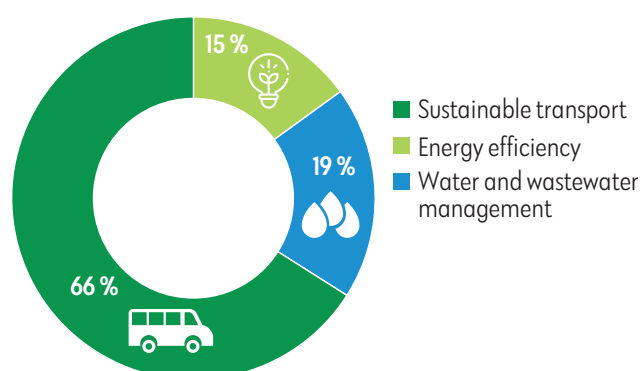


Table 4.4 Summary of Use of Proceeds from Mexico City's Green Bond

Category	Projects	Allocation MXM billion
Sustainable transport	New projects Mexico City Metro (STC): installation and repair of transportation equipment	187
	Refinancing <ul style="list-style-type: none"> Mexico City Metro (STC): installation and repair of transportation equipment Acquisition of light rail trains and construction and maintenance of the City's metro bus 	210
Water and wastewater management	New projects <ul style="list-style-type: none"> Construction and maintenance of water collection and drainage facilities Construction of water treatment plants Construction and maintenance of water and storm water pumps and reservoirs Replacement and repair of drinking water wells and drinking water distribution lines 	538
Energy efficiency	New projects Public lighting: installation, upgrades and maintenance of street lighting and lighting in city buildings to improve energy efficiency (LED bulb installation) and reduce the need for new equipment/material	65

Source: CDMX (2017).

4.2.3 Approach to Reporting Impact and Use of Proceeds

In addition to the external review of its green bond framework, Mexico City obtained specialist support to develop its impact M&E framework for the green bond; it now has the resulting annual impact report externally reviewed every year by an independent party. The impact indicators the city reports on annually are shown in [Figure 4.2](#).

After the issuance, the Mexico City Finance Ministry published the list of projects to which green bond proceeds had been allocated. At the end of each fiscal year of green bond issuance, the ministry publishes a green bond report on its website. The report includes qualitative and quantitative environmental performance indicators on eligible green projects.

4.2.4 Bond Reception

Despite the turmoil in the markets at the time due to the U.S. presidential election, the bond was oversubscribed 2.5 times. It attracted a diverse investor base with more than 20 orders, translating into highly competitive pricing. [Figure 4.3](#) presents the distribution of investor types that invested in the green bond.

Figure 4.2 **M&E Framework Indicator List for the Mexico City 2016 Green Bond**




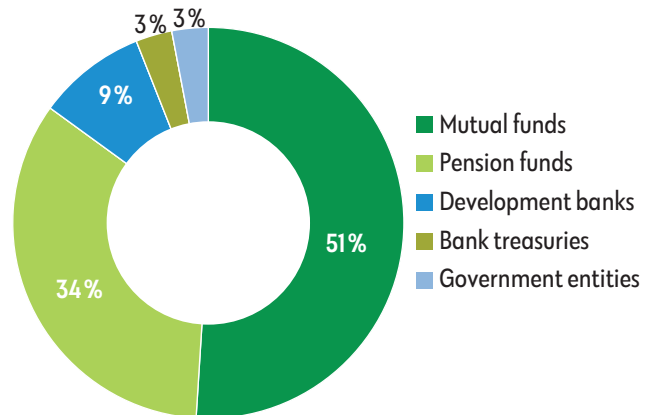
 <p>Energy efficiency</p>	<ul style="list-style-type: none"> • Annual energy savings (kWh) • Annual greenhouse gas emissions reduced (tCO₂e)
 <p>Water and wastewater management</p>	<ul style="list-style-type: none"> • Number of people who benefited from the project • Volume of clean water generated (m³)
 <p>Sustainable transport</p>	<ul style="list-style-type: none"> • Number of passengers who benefited from the project • Decrease in frequency of failures in transport system (%) • Annual greenhouse gas emissions reduced (tCO₂e)

Figure 4.3 **Distribution by Investor Type of the Mexico City Green Bond**



Source: CDMX (2017).

4.2.5 What's Next?

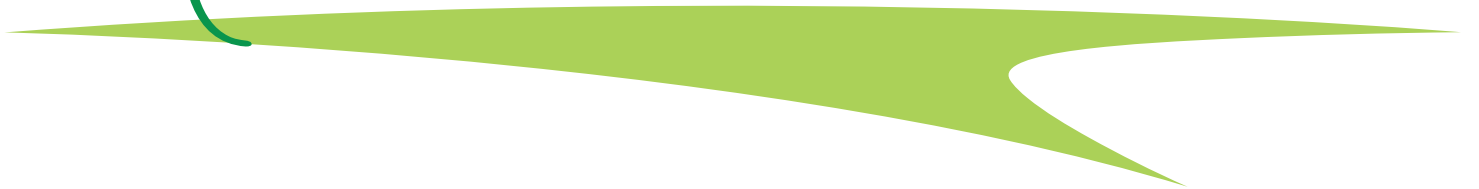
Mexico City has now issued three Green Bonds in consecutive years. The local environment minister indicated that each new bond is issued with new projects, "especially in the field of transport and [water] infrastructure" with a focus on resource use for the labelled sustainability projects (GFL, 2018). Mexico City uses other innovative financing approaches, including concessional instruments and carbon credits, alongside its sustainability bonds.

In 2018, Mexico City became the first city in Latin America and the largest municipal signatory to date to sign the [Green Bond Pledge](#), which is a joint initiative developed and designed by international climate finance and environmental groups. The pledge is a simple declaration with broad and far-reaching impact. All bonds that finance long-term infrastructure and capital projects need to address environmental impact and climate risk.

Mexico City states that its signing of the pledge is indicative of its ambitions to continue the rapid growth of a local green bond market and to work to ensure that these bonds are used to finance climate-resilient infrastructure and mitigation projects.



Appendices



Appendix A: Some Common Environmental Impact Indicators by Sector for Green Bonds

Sector	Core indicators
Renewable energy	<ul style="list-style-type: none"> • Annual GHG emissions reduced/avoided^a in tCO₂e • Annual renewable energy generation in MWh/GWh (electricity) and GJ/TJ (other energy) • Capacity of renewable energy plant(s) constructed or rehabilitated in MW
Energy efficiency	<ul style="list-style-type: none"> • Annual energy savings in MWh/GWh (electricity) and GJ/TJ (other energy savings)^a • Annual GHG emissions reduced/avoided^b in tCO₂e
Climate change adaptation	<p>Temperature-related</p> <ul style="list-style-type: none"> • Increase in grid resilience, energy generation, transmission/distribution and storage in MWh • Reduction in number of wildfires and/or in the area damaged by wildfires in km² • Reduction in emergency and unplanned rail and tarmac replacement in km • Increase in grid resilience, generation and storage in MWh <p>Wind-related</p> <ul style="list-style-type: none"> • Reduction in repair costs due to storms (to all kinds of infrastructure and assets) • Reduction in number of customers/employees suffering loss of power/transport services • Reduction in number of power lines incapacitated due to storms • Reduction in number of operating days lost to floods • Additional water availability and/or increased water catchment in m²/year • Reduction in household demand for clean water in m²/year <p>Land-related</p> <ul style="list-style-type: none"> • Reduction in repair costs and/or operating days lost due to landslides • Increase in area under wetland management in km² • Reduction in number of operating days lost to disrupted transport networks or other infrastructure • Reduction in changes in the nutrient and/or pH level for agricultural soils • Increase in agricultural land using more drought-resistant crops in hectares • Area cultivated by precision agriculture in km²
Sustainable water and wastewater management	<p>Sustainable water management – water use sustainability and efficiency projects</p> <ul style="list-style-type: none"> • Annual water savings – annual absolute (gross) water use before and after project in m³/year, reduction in water use in % <p>Wastewater treatment projects (including sewage sludge management)</p> <ul style="list-style-type: none"> • Annual absolute (gross) amount of wastewater treated, reused or avoided before and after project in m³/year and p.e./year and as % • Treatment and disposal and/or reuse of sewage sludge – annual absolute (gross) amount of raw/untreated sewage sludge treated and disposed of (in tonnes of dry solids/year and in %) • Annual absolute (gross) amount of sludge reused (in tonnes of dry solids/year and in %)

Sector	Core indicators
Waste management and resource efficiency	<p>Waste management projects – resource efficiency</p> <ul style="list-style-type: none"> Waste prevented, minimized, reused or recycled before and after project in % of total waste and/or in absolute amount in tonnes/year For certain waste management projects that reduce amount of waste disposed of, may also be possible to capture GHG emissions from waste management before and after project in tCO₂e/year <p>Energy recovery from waste including energy/emission-efficient waste-to-energy projects</p> <ul style="list-style-type: none"> Annual energy generation from non-recyclable waste in energy/emission-efficient waste-to-energy facilities in MWh/GWh (electricity) and GJ/TJ (other energy) Energy recovered from waste (minus any support fuel) in MWh/GWh/KJ of net energy generated/year GHG emissions from waste management before and after project in tCO₂e/year <p>Pollution control projects</p> <ul style="list-style-type: none"> Annual absolute (gross) amount of waste separated and/or collected and treated (including composted) or disposed of (in tonnes/year and in % of total waste)
Clean transportation	<ul style="list-style-type: none"> Passenger-km (i.e. transport of 1 passenger over 1 km) and/or passengers; or tonne km (i.e. transport of 1 tonne over 1 km) and/or tonnes Annual GHG emissions reduced/avoided in tCO₂e/year Reduction of air pollutants: particulate matter (PM), sulphur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), non-methane volatile organic compounds (NMVOCs)
Green buildings	<ul style="list-style-type: none"> kWh/m² of GBA/year; % of energy use reduced/avoided versus local baseline/building code; and, if relevant, % of renewable energy generated on site (specifying relevant renewable energy form) kgCO₂/m² of GBA/year; annual GHG emissions reduced/avoided in tCO₂e versus local baseline/baseline certification level; and/or % of carbon emissions reduced/avoided versus local baseline/baseline certification level m²/m² of GBA/year; and annual absolute (gross) water use before and after project in m³/year (for retrofitted buildings); and/or % of water reduced/avoided versus local baseline/baseline certification level/IGCC/International Plumbing Code
Biodiversity	<p>Protected areas and other effective area-based conservation measures</p> <ul style="list-style-type: none"> Maintenance/safeguarding/increase of protected area/OECM/habitat in km² and in % for increase Absolute number of predefined target organisms and species per km² (larger fauna) or m² (smaller fauna and flora) before and after project Absolute number of protected and/or priority species deemed sensitive in protected/conserved area before and after project Changes in CO₂ nutrient and/or pH levels for coastal vegetation and coral reefs in % Absolute number of invading species and/or area occupied by invading species in m² or km² before and after project <p>Landscape conservation/restoration</p> <ul style="list-style-type: none"> Maintenance/safeguarding/increase of natural landscape area (including forest) in km² and in % for increase Maintenance/safeguarding/increase of natural landscape area in urban areas in km² and in % for increase Increase of area under certified land management in km² or m² and in % (in buffer zones of protected areas) Absolute number of indigenous species, flora or fauna (trees, shrubs and grasses) restored through project Annual GHG emissions reduced in tCO₂e/year

Note: GHG = greenhouse gas; GBA = gross building area; GJ = gigajoule; GWh = gigawatt hour; IGCC = International Green Construction Code; MWh = megawatt hour; KJ = kilojoule; km = kilometre; m = metre; OECM = other effective area-based conservation measures; p.e. = person equivalent; tCO₂e = tonnes carbon dioxide equivalent; TJ = terajoule.

a. Where CO₂ emissions figures are reported, the GHG accounting methodology and assumptions should be referenced.

b. Depending on their GHG reporting requirements, some institutions may report absolute (gross) GHG emissions from the project, alongside the reduced/avoided emissions (under indicator #1). Together with baseline emissions, absolute (gross) emissions allow for calculation of emissions reduced/avoided.

Appendix B: Sustainability Impact Indicator Identification Tools

Tool name	Description	SDG	Tool developer
Aqueduct Water Risk Atlas	Aqueduct provides a comprehensive and granular database with global coverage of current and future water risk indicators, including measures of water supply, demand, stress and flood risk, among others.	6	World Resources Institute
Alliance for Water Stewardship (AWS) International Water Stewardship Standard	The AWS Standard is an international, ISEAL-compliant, standard that defines a set of water stewardship criteria and indicators for how water should be stewarded at a site and catchment level in a way that is environmentally, socially and economically beneficial.	6	Alliance for Water Stewardship
GEMI Local Water Tool (LWT)	The tool helps companies assess impacts, risks and opportunities, and manage water-related issues at specific sites; to provide a common and consistent "visualization platform" for internal and external communication.	6	GEMI, CH2M, World Business Council for Sustainable Development, IPIECA
Greenhouse Gas (GHG) Protocol	The GHG Protocol is the most widely used international accounting tool for government and business leaders to understand, quantify and manage GHG emissions. A 20-year partnership between the World Resources Institute and the World Business Council for Sustainable Development, the GHG Protocol works with businesses, governments and environmental groups around the world to build a new generation of credible and effective programmes for tackling climate change.	13	World Business Council for Sustainable Development, World Resources Institute
High Conservation Value (HCV) Network	The HCV approach is a process by which high-conservation values are identified, managed and monitored in forestry and agricultural production. HCVs are biological, ecological, social or cultural values that are considered outstandingly significant or critically important at the national, regional or global level.	15	HCV Network
Impact Reporting & Investment Standards (IRIS) Catalog of Metrics	IRIS is the catalogue of generally accepted performance metrics that leading impact investors use to measure social, environmental and financial success; evaluate deals; and grow the credibility of the impact investing industry.	1	Global Impact Investing Network (GIIN)
Integrated Biodiversity Assessment Tool (IBAT)	IBAT has established itself as the go-to biodiversity screening tool for a range of financial institutions, including the International Finance Corporation and the World Bank. IBAT provides a preliminary risk screening on biodiversity. It integrates information on globally recognized biodiversity, drawing on the IUCN Red List of Threatened Species, Key Biodiversity Areas (priority sites for conservation) and The World Database on Protected Areas (covering nationally, regionally and internationally recognized sites, including IUCN management categories I-VI, Ramsar Wetlands of International Importance and World Heritage sites).	6; 14; 15	IUCN, BirdLife International, Conservation International, UNEP-World Conservation Monitoring Centre

Tool name	Description	SDG	Tool developer
Integrated Valuation of Environmental Services and Trade-offs (InVEST)	InVEST is a suite of software models used to map and value the goods and services from nature that sustain and fulfil human life. If properly managed, ecosystems yield a flow of services that are vital to humanity, including the production of goods (e.g. food), life-support processes (e.g. water purification), life-fulfilling conditions (e.g. beauty, recreation opportunities) and the conservation of options (e.g. genetic diversity for future use). Despite its importance, natural capital is poorly understood, scarcely monitored, and, in many cases, undergoing rapid degradation and depletion. InVEST enables decision makers to assess quantified trade-offs associated with alternative management choices and identify areas where investment in natural capital can enhance human development and conservation.	13;15	Natural Capital Project, Stanford University
Measuring Socio-Economic Impact	This guide has been developed to help businesses perform three essential tasks: (i) define and articulate the business case for socioeconomic impact measurement within their organization; (ii) understand the essentials of impact measurement theory and communicate with internal and external stakeholders on the subject, including on the terminology; (iii) navigate the landscape of measurement tools and identify those that best meet companies' needs. The guide profiles 10 existing tools tailored to business needs, dissected on the basis of functionality, fit for purpose, cost and complexity of implementation, and examples of their application in practice.	8	World Business Council for Sustainable Development
Poverty Assessment Tools (PATs)	The PATs are free, easy-to-use tools for assessing poverty levels of any group of people. Development practitioners use PATs to assess their success at reaching out to poor and very poor people, compare poverty levels of those who are engaged in different practice areas, or track changes in poverty level over time. Each PAT survey consists of 10–25 questions. Results can be analysed in custom data entry templates or within the user's own analysis software.	1	United States Agency for International Development (USAID)
True Cost of Water Tool	This tool calculates a composite cost per gallon or cubic metre that incorporates direct and indirect costs, as well as monetized implications of water-related risks. It is used to make informed business case decisions on water projects.	6	Veolia
Understanding and Measuring Women's Economic Empowerment	This document is intended as a conceptual guide, rather than an operational tool kit. Economic empowerment is a complex process, and the general framework presented here will need to be adapted to meet the needs of specific projects.	5	International Center for Research on Women (ICRW)
WASH Pledge Self-Assessment Tool for Business	The WASH Pledge Self-Assessment Tool assembles 32 provisions on best practices on the provision of WASH to employees, allowing companies to evaluate each site and establish a baseline. By signing the WASH Pledge, companies commit to implementing access to safe water, sanitation and hygiene at the workplace at an appropriate level of standard for all employees in all premises under their control within three years after signature.	6	World Business Council for Sustainable Development

Tool name	Description	SDG	Tool developer
Water Footprint, Neutrality and Efficiency (WaFNE) Umbrella Project	Since 2009, UNEP has been implementing a project to enhance water efficiency and water quality management through the refinement of water footprinting and water neutrality methodologies, and their testing and applications in developing country industries and in water-stressed areas. The project's specific objectives include (i) refining methods and management tools for the water footprint and water neutrality concepts; (ii) building capacity and raising awareness within the public and private sectors in order to apply the water footprint and neutrality concepts on a larger scale and with greater consistency; and (iii) demonstrating the applicability of harmonized concepts in enhancing water efficiency and improving water quality in high water impact and water-dependent industries and in water-stressed regions.	6	UNEP
Water Impact Index (WIIX)	The WIIX calculates a composite metric in gallons or cubic meters equivalent that quantifies the net impact of activities on local water resources. It integrates volume and quality.	6	Veolia
Water Use Life-Cycle Assessment (WULCA)	The tool provides industrials with a coherent framework within which to measure and compare the environmental performance of products and operations regarding freshwater use, and related environmental consequences.	6	UNEP, Society for Environmental Toxicology and Chemistry
Water Footprint Assessment Tool	The water footprint is an indicator of freshwater use that looks at both direct and indirect water use of a consumer or producer. The assessment involves quantifying the water footprint, assessing its sustainability and impacts and formulating response strategies. The Water Footprint Assessment Tool helps users perform water footprint assessments at the geographical level (e.g. river basin) and product or facility level (including supply chain).	6	Water Footprint Network

Note: SDG 1 = No Poverty; SDG 2 = Zero Hunger; SDG 3 = Good Health; SDG 5 = Gender Equality; SDG 6 = Clean Water and Sanitation; SDG 8 = Decent Work and Economic Growth; SDG 13 = Climate Action; SDG 14 = Life Below Water; SDG 15 = Life on Land.

Appendix C: Pertinent Legislation and Regulations

- [Banks Act](#) (Act 94 of 1990)
- [Banks Act: Designation of an Activity Not Falling within the Meaning of "The Business of a Bank"](#) (Commercial Paper Regulations) (1994)
- [Companies Act](#) (Act 71 of 2008)
- [Financial Advisory and Intermediary Services](#) (FAIS) (Act 37 of 2002)
- [Financial Markets Act](#) (FMA) (Act 19 of 2012)
- [Local Government: Municipal Finance Management Act](#) (MFMA) (Act 56 of 2003)
- [Local Government: Municipal Systems Act](#) (MSA) (Act 32 of 2000 as amended)
- [National Environmental Management Act](#) (NEMA) (Act 107 of 1998 as amended)
- [Public Finance Management Act](#) (PFMA) (Act 1 of 1999)
- [South African Constitution](#) (Act No. 108 of 1996)

Glossary

Accounting officer. A public servant in a department who is accountable to Parliament for financial management, usually the director-general or head of the department.

Adaptation. The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.

Bond maturity. This is the agreed date when the issuer is required to repay the full amount of the outstanding principal plus any applicable interest to the lender.

Bondholder. An investor in a bond. See [Investor](#).

Capital project. A long-term, capital-intensive investment project with a purpose to build upon, add to or improve a capital asset – for example, a property, building or other infrastructure.

Carbon dioxide equivalent. Concentration of carbon dioxide that would cause the same amount of radiative forcing (the difference of sunlight absorbed by the Earth and energy radiated back to space) as a given mixture of carbon dioxide and other greenhouse gases.

Climate change. Refers to a change in the state of the climate that can be identified (e.g. by using statistical tests) by changes in the mean and/or variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings, such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use.

Climate-smart agriculture (CSA). Climate-smart agriculture is an approach that helps guide actions needed to transform and reorient agricultural systems

to effectively support development and ensure food security in changing climate. CSA aims to tackle three main objectives: (i) sustainably increasing agricultural productivity and incomes; (ii) adapting and building resilience to climate change; and (iii) reducing and/or removing greenhouse gas emissions, where possible.

Commercial paper. A commonly used type of unsecured, short-term debt instrument issued by corporations, typically used for the financing of payroll, accounts payable and inventories, and for meeting other short-term liabilities.

Coupon, coupon rate. The interest rate on the face value of a bond.

Credit rating agency. An entity that assesses the creditworthiness of the municipal issuer, in general, or the issued bond, in particular. Creditworthiness describes the probability that the issuer will default.

Creditworthiness. The extent to which an entity is considered suitable to receive financial credit, often based on its reliability in paying money back in the past.

Debt capital markets. Markets that facilitate the issuance of debt instruments and access to investors.

Debt listing requirements. The rules and procedures governing new applications and continuing obligations applicable to issuers of debt securities.

Direct emissions. Emissions from sources owned or controlled by the reporting entity.

Ecological infrastructure. Refers to naturally functioning ecosystems that deliver valuable services to people, such as water and climate regulation, soil formation and disaster risk reduction.

Ecosystem. A functional unit consisting of living organisms, their non-living environment and the interactions within and between them. The components included in a given ecosystem and its spatial boundaries depend on the purpose for which the ecosystem is defined. In some cases, they are relatively sharp; in others, they are diffuse. Ecosystem boundaries can change over time. Ecosystems are nested within other ecosystems, and their scale can range from very small to the entire biosphere. In the current era, most ecosystems either contain people as key organisms or are influenced by the effects of human activities in their environment.

Ecosystem-based adaptation. The use of biodiversity and ecosystems to support communities to adapt to life in a less predictable climate system.

External reviewer. Independent organization commissioned to review the green credentials of the use of proceeds prior to a bond issue and after a bond is issued.

Fixed-income security. A debt financial instrument with remuneration to investors (holders of the security) in defined periods and with certain profitability conditions at the time of application.

Grant funds. Non-repayable funds or products disbursed or given by one party, often a government department, corporation, foundation or trust, to a recipient or another government entity.

Green bond. A type of fixed-income instrument that is specifically earmarked to finance or refinance green eligible activities that will have a positive environmental impact.

Green default. A situation whereby a bond is paid in full but the issuer breaks the agreed green clauses or mandated green outcomes.

Green economy. Economic activities and infrastructure that enable a robust, efficient, competitive, lower-carbon, resilient and sustainable economy and society.

Greenhouse gases. The gaseous constituents of the global atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation; these include carbon dioxide (CO₂), methane (CH₄), nitrous

oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆).

Green market. Market ecosystems and economic processes that adhere to all the principles of sustainable development including responsible social and environmental governance.

Green project. Project with positive environmental attributes. Such a project is considered suitable for the issuance of a green bond (new or existing).

Greenwashing. Misinformation or exaggerated reporting of sustainable targets disseminated by an organization so as to present an environmentally responsible public image.

Index provider. Market indices classify and define a market or a portion of a market. Those indices are used to benchmark that market or share of the market. An index provider maintains such an index.

Indirect emissions. Emissions that are a consequence of the activities of the reporting entity, but occur at sources owned or controlled by another entity.

Issuer. A company or legal entity borrowing money from investors through the issuance of a bond instrument. In the case of a sustainable bond, a company or legal entity seeking to issue a bond to raise capital for a potential project with sustainability/social/environmental/climate benefits. Typically, major issuers in the international market are private companies, supranational institutions and multilateral development banks. Government agencies, including municipalities and financial institutions (public and private), might also raise capital via the issuance of a sustainable bond.

Insurers. Act as long-term investors and provide cover for climate-related and social risks and their financial consequences.

Investor. Any person or other entity that commits capital in a transaction with the expectation of receiving financial returns as a reward for their investment. Investors rely on different financial instruments to earn a rate of return and accomplish financial objectives. The characteristics of sustainable bonds are especially attractive to investors with long-term profit goals and who are focused on environmental, social

and governance aspects as part of their investment selection criteria.

KPI-linked bonds. Bonds issued with a structural component (e.g. a coupon) that varies depending on whether a defined environmental, social and/or governance key performance indicator/objective is achieved. Also known as sustainability-linked bonds or SDG-linked bonds.

Legal advisor. An issuer may require the assistance of a law firm to assess the legal aspects of the issuance of the fixed-income security, assist in the preparation of drafts of the writ and other legal documents, as well as perform legal due diligence where the contracts and other obligations undertaken by the company and are of interest to prospective investors will be checked.

Maturity. A defined date in the future on which the issuer returns the nominal value of the bond to its holder or the last payment date on an amortizing bond.

Municipality. A publicly mandated entity that has its own territory, operating at a subnational scale (usually within a province or state). On this territory, the local community gives it a mandate to render public good. From that mandate, specific powers and functions are derived. To justify its powers and fulfil its functions, the municipality must follow specific rules and processes. In an intergovernmental system, these powers and functions, rules and processes become related to other public entities of the same or different public sphere. In South Africa, there are metropolitan, district and local municipalities; there may be related municipal entities that deliver specific services.

Nationally determined contribution. National climate plans highlighting climate actions, including climate-related targets, policies and measures that governments aim to implement in response to climate change and as a contribution to global climate action.

Natural capital. Natural resources (including geology, soil, air, water and all living things) used to generate economic growth and ecosystem services that support economic activities.

Paris Agreement. An international treaty on climate change adopted by 196 parties on 12 December 2015 and entering into force on 4 November 2016.

Pension funds. Funds from which pensions are paid, accumulated from contributions from employers, employees, or both.

Principal. The amount of money the issuer of a bond is borrowing and will repay to a bondholder in full upon the bond's maturity or, for an amortizing bond, over the life of the bond.

Private placement. The sale of stock shares or bonds to preselected investors and institutions rather than on the open market.

Prospectus. A formal document that is required by and filed with the debt capital markets regulator (in South Africa, the JSE) that provides details about an investment offering to the public. The JSE also refers to the prospectus as the applicable pricing schedule.

Public offering. The sale of equity shares or other financial instruments such as bonds to the public in order to raise capital.

Resilience. The ability of a social, economic or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning; the capacity for self-organization and the capacity to adapt to stress and change.

Retail investor. Non-professional investor who buys and sells securities or funds that contain a basket of securities such as mutual funds and exchange-traded funds (ETFs).

Ratings agency. Agency that provides credit ratings, research, tools and analysis that contribute to transparency and integration of financial markets. A ratings agency provides an independent assessment on the credit quality of the issuer. In addition to the traditional function of assigning credit ratings, rating agencies have also started to structure environmental assessment processes related to project selection criteria and/or projects funded by sustainable bonds, in order to assign a specific rating on the sustainable bond characteristics and not on the issuer's credit profile.

Securitized bond. Bond where coupon and interest payments come from a collection of other underlying assets.

Social bond. Fixed-income instrument whose proceeds will be exclusively applied to finance and/or refinance eligible social projects.

Social equity. Active commitment to fairness, justice and equality in the formulation of public policy, distribution of public services, implementation of public policy and management of all institutions serving the public directly by contract.

Sustainable bond. As used in this handbook, a collective term for one or all of typical use of proceeds financial instruments that are labelled “green”, “environmental”, “social” or “sustainability” in terms of market accepted practices for these labels. This is the definition according to ICMA; the term is often used more loosely to refer to a bond that is using bond proceeds to fund SDG-aligned activities or assets.

Sustainable development. The integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.

Sustainable finance. As defined by the South African National Treasury (2021, p. 16):

Sustainable finance contributes to the delivery of the sustainable development goals and a just transition to a low carbon and climate resilient economy and financial stability. Sustainable finance encompasses financial models, services, products, markets and ethical practices to deliver resilience and long-term value in each of the economic, environmental, social and governance aspects. This is achieved when the financial sector: Evaluates portfolio and transaction-level environmental and social risk exposure and opportunities, using science-based methodologies and best practice

norms; discloses and mitigates these risks and links these to products, activities and capital allocations.

Sustainability. A dynamic process that guarantees the persistence of natural and human systems in an equitable manner.

Sustainability bond. Fixed-income instrument whose proceeds will be exclusively applied to finance or refinance a combination of both green and social projects.

Tenor. The total length of time before a financial contract expires.

Underwriter. A financial institution that takes the lead and is responsible for underwriting, and sometimes for arranging and distributing, the entire bond issue.

Use of proceeds instrument. A financial instrument in which the capital raised is earmarked for specific projects that have green, social or sustainability attributes.

Vanilla bond. A bond without any unusual features. It is one of the simplest forms of bond with a fixed coupon and a defined maturity and is usually issued and redeemed at face value. It is also known as a straight bond or a bullet bond.

Wheeling. The transfer of electrical power via a utility's transmission or distribution system between different grid or network service areas.

Yield. The effective return received on a bond based on its current price and the coupon rate. A bond's yield to maturity specifically is equal to the rate of return that makes the present value of all a bond's future cash flows equal to its current price.

References

- BBVA, 2018. [Arranger, Bookrunner, MLA and Other Roles in Financing Transactions](#).
- Brand, Stephan, and Johannes Steinbrecher, 2019. [Green Bonds – A Sustainable Alternative for Municipal Infrastructure Finance?](#) KfW Research: Focus on Economics No. 245.
- CBI (Climate Bonds Initiative), 2015. [How to Issue a Green Muni Bond: The Green Muni Bonds Playbook](#).
- CBI (Climate Bonds Initiative), 2019a. [Green Bond Market Summary](#).
- CBI (Climate Bonds Initiative), 2019b. [Post-Issuance Reporting in the Green Bond Market](#).
- CBI (Climate Bonds Initiative), 2021. [Climate Bonds Taxonomy](#).
- CDMX (City of Mexico), 2017. [Climate Financing for Cities with Green Bonds](#). C40 webinar.
- Cities Support Programme, 2018. [Catalytic Land Development Guideline](#). National Treasury, South Africa.
- City of Cape Town, 2017. [City Commences Investor Road Show to Promote Inaugural R1 billion Green Bond](#). Statement by the City's Executive Mayor 18 June.
- City of Cape Town, 2019. [Integrated Annual Report 2018/19](#).
- Davids, E., D. Yuill, R. Wessels and S. Mdluli, 2020. [The Initial Public Offerings Law Review – Edition 4](#).
- Dazé, Angie, 2017. [Information Sharing for Adaptation Planning at Sub-national Levels: South Africa's Let's Respond Toolkit Country Briefing 3A](#). NAP Global Network.
- DBSA (Development Bank of Southern Africa), 2021. [DBSA Green Bond Framework](#).
- DEA (Department of Environmental Affairs), 2007. [National Climate Change Response White Paper](#).
- DEA (Department of Environmental Affairs), 2011. [Financing Climate Change](#).
- DEA (Department of Environmental Affairs), 2014. [National Biodiversity Strategy and Action Plan: 2015–2025](#). Pretoria: DEA.
- DIA (Debt Issuers Association), 2017. [Debt Capital Markets – Primary Issuance Guidelines](#). South Africa.
- DLA Piper, 2019. [Law and Regulation: South Africa](#). Jurisdictions: Financial Regulation online tool.
- The Economist*, 2020. [Sustainable and Actionable: An ESG Study of Climate and Social Challenge for Asia](#).
- Environmental Finance, 2018. [Green Bond of the Year – Local Authority: City of Cape Town](#).
- Environmental Finance, 2021. [2020 Sustainable Bond Issuance Jumps Two-Thirds amid Social Breakthrough](#).
- FEBRABAN and CEBDS (Brazilian Federation of Banks and Brazilian Business Council for Sustainable Development), 2016. [Guidelines for Issuing Green Bonds in Brazil 2016](#).
- Fung, Bill, and Joachim Clement, 2019. [Green Bonds vs. Traditional Bonds](#). Blog post 8 March. CFA Institute.
- Goebel, D. J., 2017. [Municipal Bonds for Infrastructure Development in South Africa](#). Discussion paper prepared for GIZ and the South African Local Government Association.
- GFL (Green Finance for Latin America and the Caribbean), 2018. [Mexico City Prepares Its Third Green Bond in the Mexican Stock Exchange](#).
- ICMA (International Capital Market Association), 2019. [Green Project Mapping](#). Paris: ICMA.
- ICMA (International Capital Market Association), 2020a. [Handbook – Harmonized Framework for Impact Reporting](#).
- ICMA (International Capital Market Association), 2020b. [Working Towards a Harmonized Framework for Impact Reporting for Social Bonds](#).
- ICMA (International Capital Market Association), 2021a. [Green Bond Principles](#). Paris: ICMA.

- ICMA (International Capital Market Association), 2021b. [Guidance Handbook](#). Paris: ICMA.
- ICMA (International Capital Market Association), 2021c. [Usability of Taxonomies and Nomenclatures for the Green, Social and Sustainable Bond Markets](#). Paris: ICMA.
- IDFC (International Development Finance Club), 2021. [Common Principles for Climate Mitigation Finance Tracking](#). Version 3.
- JSE (Johannesburg Stock Exchange), 2017. [The Role of Exchanges in Accelerating the Growth of the Green Bonds Market: The South African Case](#).
- JSE (Johannesburg Stock Exchange), 2020. [JSE Debt Listing Requirements](#).
- KPMG, 2015. [Sustainable Insight: Gearing up for Green Bonds](#).
- KPMG, 2019. [Green Bond-ing with Sustainable Development Goals](#).
- Lumen, 2020. [The Relationship between Risk and Capital Budgeting](#). Boundless Finance Course. Lumen Learning.
- Maguire, G., 2018. [Sub-national Green Bonds: Innovation Finance for Sustainability](#). Presentation. Cape Town: Western Cape Government, Environmental Affairs and Development Planning.
- Moody's Investor Service, 2017. [City of Cape Town, Green Bond Assessment](#).
- Moody's Investor Service, 2019. [City of Cape Town, Update to Green Bond Assessment](#).
- Moody's Investor Service, 2021. [Rating Symbols and Definitions](#).
- Morningstar, n.d. [Bonds 101: Underwriting Bond Issues](#).
- National Treasury, 2008. [Local Government Budgets and Expenditure Review: 2003/04–2009/10](#).
- National Treasury, 2017. [Policy Framework for Municipal Borrowing](#).
- National Treasury, 2020a. [Municipal Borrowing Bulletin Issue 17](#). June 2020.
- National Treasury, 2020b. [Public-sector Infrastructure Update](#). Annexure D in Budget Review 2020. Pretoria: National Treasury.
- National Treasury, 2021. [Financing a Sustainable Economy: Technical Paper](#).
- NBI (National Business Initiative), 2021. [Applying the Green Finance Taxonomy: User Guidance to the Draft Green Finance Taxonomy](#). Working Draft 1.0. Johannesburg: NBI.
- NBI and BCG (National Business Initiative and Boston Consulting Group), 2020. Just Transitions Pathways Project.
- NBI (National Business Initiative) and Carbon Trust, 2020. [Developing a National Green Finance Taxonomy: Project Briefing Report](#).
- NPC (National Planning Commission), 2012. [National Development Plan 2030: Our Future – Make It Work](#). Pretoria: South African Government.
- Republic of South Africa, 2021. [South Africa: First Nationally Determined Contribution Under the Paris Agreement](#). Report to the United Nations Framework Convention on Climate Change.
- SALGA (South African Local Government Association), 2014. [Local Government Toolkit: Financing Energy Efficiency and Renewable Energy](#). Pretoria: SALGA.
- SALGA, 2018. [Municipal Innovative Infrastructure Financing Conference 2018: Unlocking Infrastructure Financing to Accelerate Service Delivery](#). Pretoria: SALGA.
- SANBI (South Africa National Biodiversity Initiative), 2021. [What Is Ecosystem-based Adaptation?](#)
- SEforALL, 2019. [Energizing Finance: Understanding the Landscape 2019](#).
- Shawe, L., 2016. [Debt Capital Markets in South Africa: Regulatory Overview](#). Available on Thomson Reuters Practical Law website.
- SIDSSA (Sustainable Infrastructure Development Symposium South Africa), 2020. [The Sustainable Infrastructure Development Symposium 2020](#).
- South African Cities Network, 2017. [Sustainable Cities Report](#).
- Stats SA, 2019. [Sustainable Development Goals \(SDGs\): Country Report 2019 – South Africa](#). Pretoria: Statistics South Africa.
- Tarrant, Hilton, 2020. [Champion of Change](#). *JSE Magazine* Supplement.
- Timbers, A., 2019. [GoGreenBonds](#).
- UNEP (United Nations Environment Programme), 2018. [Aligning Climate Finance to the Effective](#)

[Implementation of NDCs and to LTSs](#). Input document for the G20 Climate Sustainability Working Group.

Williams, Jon, Andy Jones and Sarah Pickin, 2017. [New Markets for Green Bonds: A Guide to Understanding the Building Blocks and Enablers of a Green Bond Market](#). Climate and Development Knowledge Network.

Wiśniewski, M., 2018. Innovative Bonds in Financing Public Tasks. *Zbornik Ekonomskog fakulteta u Zagrebu* 17: 59–72.

World Bank Treasury, 2015. [What Are Green Bonds?](#). Washington, D.C.: World Bank.

