

Green Bonds: A Sustainable Finance for Individuals and Small Firms

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<b>KEYWORDS</b> <i>Green Bonds, Environmental Pollution Control, Community Development, Small &amp; Medium Enterprises.</i>	<b>ABSTRACT</b> A number of reviews have been done on Green Finance and Green Bonds articles at the national and international levels. Tripathi (2016) argued about the established standards and regulations that are not yet strictly followed. The financial scenario is also stated to be more transparent and to control green environment activities if it is followed. This article discusses the gaps in the fundraising process of Green Bonds through LCR project. This concept is not particularly new, but it is a designated and specific market that has existed since 2007 and is labelled as "green."  These green world activities have been broadly defined by Lyon and Maxwell, who also suggested that they have a beneficial environmental impact that will lessen the negative effects of sustainable development. Furthermore, Arragon-Correra (2019) emphasized the advantages and described it in a more positive way that the business can actually make when Green Bond Principles are applied. Additionally, it is asserted that, unlike other nations, the Indian green bond market helps to build investor confidence. Lack of awareness is the only obstacle to the success of the Green Bonds issue.Pietri Master Thesis(2021) proved that the interest towards investment, which helps in climate change and financial returns, is being chosen by the investors if the wide sector of the global economy is looked into. Therefore, in order to underline the value of involvement in defending the nation, the government must prepare seminars and campaigns for SMEs' management staff as well as retail and institutional investors. Standardizing the issuance of these Green Bonds will surely take some time, and the governing bodies are now trying to make the new requirements better  .
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1. INTRODUCTION

This research begins with especially the investors who are not aware of this, and this study is to suggest the government improve the awareness programmes and would bring the requirement of constructing any model to raise awareness and enhance these Green Bonds with cutting-edge features to increase their appeal.

The Investors' Awareness Programmes should also try to educate with its' sustainable investment features.

Mossimo Phillippenne (2024), where the Swiss households were studied, defined that the skill and knowledge in choosing the stocks showed their low level of sustainable finance, even though most of them are financially literate. It suggested that there is a need to create more awareness, and the regulations should be more focused and protected towards these instruments, which we define as the knowledge and skill of identifying and assessing financial products according to their reported sustainability-related characteristics. To this end, we use multiple-choice questions. Furthermore, we measure Swiss private



investors' level of awareness about sustainable financial products using open-ended questions. We find that Swiss households, which are generally highly financially literate by international standards, exhibit low levels of sustainable financial literacy compared to the current working definitions of sustainable finance. Moreover, despite its low level, knowledge about sustainable finance is a significant factor in the reported ownership of sustainable products. The empirical results also show a relatively low level of awareness. Generally, these empirical findings suggest a need to create transparent regulatory standards and strengthen information campaigns about sustainable financial products.

There is an urgent need to boost the number of sustainable development initiatives that address the green issue, as only a small number of Indian enterprises were named among the top 100 and 8,000 green companies worldwide.

Charles Rajesh Kumar.J.(2020) in his research with a primary objective to understand the advancement or improvement in relation to improved energy security and sustainability and also with special reference to modern energy to the citizens, India proved to be one of the top countries in the world which can attract most renewable energy markets. In countries that have achieved success, those models will be examined and suggested based on the viability of the Indian context, which has committed to reaching net zero by 2050. Among these, around 250 companies (G250) report on sustainability. According to the US Green Building Council, India came in third place.

As the world shifts away from fossil fuels to green energy stocks, India looks to tread the fine line between sustainable growth and long-term value. Green companies play a major role in satisfying the Sustainable Development Goals. Environmental and social initiatives are not exactly the same as the SDG Bond Framework, which went into effect in 2018, and investors may be advised to make investments in accordance with this. China raised over \$35 billion in only one year in 2017, while India raised over \$7 billion in just five years. This demonstrates India's lack of attempts to create a green future, which aims to raise \$500 billion by 2030 and presents a chance for international investors. The extent and constraints of green bonds in India are as follows. According to the analysis, by 2044, India will surpass the United States in green investment.

### ***Research Questions or Hypotheses:***

How to bring awareness of the sustainable instrument Green bonds among retail investors? Is really the Government playing an active role in creating awareness among the Retail Investors and SMEs or not? Polina Pimenova (2004), in the paper on MSMEs as a strong foundation for economic development, especially in the case of developed countries, also proved that this is continuously growing and important in the economies to develop at a faster rate. Micro-, small-, and medium-sized enterprises (SMEs) form a strong basis for the economy in developed countries and are of growing importance in transition economies. At the same time, SMEs significantly contribute to environmental degradation. This paper draws on a pilot survey of SMEs in the London area, examining their environmental concerns, constraints to environmental performance improvements, key incentives to caring for the environment, and the role of support initiatives and bodies in promoting best environmental practices in SMEs. The applicability of the results of this study to the transition economies of Eastern Europe is examined, and further research is proposed in the region in order to test the hypotheses developed by this study.

## **2. LITERATURE REVIEW:**

In her analysis of the sub-prime crisis that began in 2008, Gabriela de Oliveira Junqueira (2021) highlighted the role of green bonds for economic development from environmental, social, and governance perspectives, pointing out that the projects hold a central place in the green recovery and that it uses the world-ecology approach to expand its ecological world. Green bonds are sound enough for the savings of even retail investors, and they have been instrumental in improving the climate.

The rapid development of green bonds, according to David Gilchrist, Jing Yu, and Rui Zhong (2021), evaluates the determinants and benefits of corporate involvement in these environmentally friendly projects and green loans. Jeremy Gorelick and Neil Walmsley (2020) argued extensively about the greening of municipal infrastructure investments and the technical support provided by the government. They also discussed the importance of green finance and the investments made by retail investors. This article covered the government's support for the infrastructure and city champions' use of Green Finance Funds.

The growth of the regional green economy and its impact on financial agglomeration are explained in detail by Yuhang Zhang and Shaunglian Chen (2020), who have provided evidence from China.

These investments will raise interest even in stock markets, as Alexandra Maria (2020) noted the new market development in terms of a sustainable environment where climate protection is highly necessary. The structure of these financing mechanisms, their guiding ideas and conceptions, and their effects on the capitalist economy were all discussed in the article.

According to Pauline Deschryver and Frederic de Mariz (2020), this market is drawing a lot of new retail investors in addition to issuing businesses and projects that provide investors a wide range of options. Because of its difficulties, the size of the companies still remains small when compared to other traditional bond instruments. This paper also recognized the deficit of unified worldwide standards, risk of greater costs to the issuers, and lack of supply to the investors in the market. It has also made recommendations on how to get past these obstacles and draw in investors to finance sustainability tools.



In its publications, ICMA (2019) stated that the green bond criteria encourage openness and provide valuable information to all companies issuing green bonds. In contrast to other countries, it is also said that the green bond market in India contributes to the development of investor trust.

In this post, Blagica Novkovska (2019) outlined in detail the true relationship between the Green Economy and the shadow that now exists, as well as how to reduce and eliminate it in order to move the economy in the direction of community development. As more and more money was invested in these green funds, the focus was on how this would help to eliminate the shadow.

Global climate change and the growing need for greenhouses to contribute to the planet have been discussed by Aleksandrova-Zlatanska Svetlana and Kalcheva Desislava Zheley (2019), along with the sources of Green Bond capital expenditure.

With particular reference to the European Union, Shuba Olena (2018) investigated the significance of employing green investments in funding economic transformation. The status of Green Bonds in France and Germany, two of the leading issuers of these bonds in the EU, was also discussed. It was thoroughly examined to ascertain the amount allocated to renewable energy and transportation projects, with particular attention to Germany.

Millicent Apiyo Omala (2023), in his paper, mentioned that there is an increase in the channels of climate financing towards the southern parts of the globe and also found that there is a gap when stakeholder opinions are analysed, especially on the climate finance coordination.

### ***Identification of Research Gap:***

PanelCongyu Zhao (2024), in their paper, estimated the impact of AI on renewable energy's moderating role in climate finance and also studied the importance of technology's effect on the progress of renewable energy by taking the survey in 63 countries using the Moments Model method and asymmetric nexus and potential mediation effect. Although a lot of research has been done on green finance and green accounting, little is known about investors' and small and medium-sized businesses' ignorance of the green bond issue. Because of the absence of evidence, corporates remain inconsistent regarding environmentally favourable projects. Although guidelines are issued, they are not widely shared, despite efforts to raise awareness. There is a great opportunity to bridge the gap between investors' understanding and availability.

The industrial development of any country, when observed in the decade, is somewhat having a negative impact, and it is specific to the environment. The academicians, industrialists and researchers are continuously trying to understand the funding mechanism where projects are environment friendly and how these projects are affecting its investors. No factors are associated with the growth and the impact of green bonds and the issuers of ESG objectives.(Umair Saeed Bhutta, 2022)Additionally, a large number of SMEs lack knowledge on the government's support, sustainability, and consistency.

Asem Alkahtani(2020), in his research, clearly indicated that population density plays a significant and optimistic impact and effect on the improvement of the place with good government support in networking as well as finance.

Research in this crucial field of green bond financing is currently lacking. The information may be found in the audited financial reports of all publicly traded corporations during their financial performance management. Additionally, businesses are unaware that it is one of the non-financial elements that has a significant impact on the performance evaluation. Businesses may also contribute to its ranking and goodwill as a result of their involvement in these initiatives, which fall under the umbrella of environmental or green accounting.

Amr EIAIfly (2020), in the research predicting the agenda of 20230, proved that United Nations SDGs have directly influenced very much the CSR activities and suggested improving the gap between the government policies and practices. The research also showed that the increased comprehension of CSR and the performance improvement happens in the long run, if not in the short run.

This is also a component of the Balanced Score Card, which is a key component of the Climate Change and Corporate Social Responsibility pillars. Because of these social responsibilities, it also strengthens the relationship between suppliers and customers and is beneficial to non-financial stakeholders. There is a need to raise corporate awareness, and this will require a great deal of research. Corporations should be informed that these initiatives would undoubtedly contribute to the transformation of the environment. Teaching about green has also gotten difficult.

Scholars ought to recommend specific initiatives and strategies to SMEs in this regard and raise awareness of Green Bonds among current and prospective investors.

Most of the research has focused on the environmental performance of corporations, with little attention paid to SMEs. Environmental disclosures are also lacking in content, which has to be improved through awareness campaigns. Lastly, future researchers must evaluate different rating methods to standardize the Green Accounting model. New financial analysis data is required to make progress in our quest for ways to safeguard the world and improve society on a human level.

### ***Objectives of the Proposed Study - General Objectives:***

To explain various features of the Green Accounting concept and the Green Bonds issue. This will explain the sustainable



features of various instruments and other general bonds & the guidelines given by various Governments regarding the issue and holding of these Green Bonds.

To analyze the success issue of various Green Environmental Projects in other countries. This includes a brief explanation of such projects initiated and successful in other countries.

To explain the concept, process, & Opportunities of Green Bonds Issues- To the investors as well as Small & Medium Enterprises.

To suggest the need to educate Small & Medium Enterprises Entrepreneurs about raising funds for Green Environmental Projects and educate the common investors about the investment in Green Bonds.

To give practical suggestions to the Government about the required methods of the issue to reach the maximum number of investors & SMEs in the Indian Context and to estimate the future prospects of Green Bonds.

### ***Major Research Question/Hypotheses:***

How to bring awareness of the sustainable instrument Green bonds among retail investors, & Is the government really playing an active role in creating awareness among Retail Investors and SMEs or not? This will try how to improve the literacy of Green Bonds comparatively with other Bonds.

### ***Methodology for the research work***

The research work of this project is completely descriptive, the data collected from the primary as well as secondary sources.

Tables from various Green Environment and Climate Bond Organizations will be collected to analyze. Secondary data was collected from various Green clubs existing across the globe. Secondary data collected from various websites, the published reports on Green

Environment throughout the globe and the handbook of statistics about this increase in the number of these projects. The models of different countries, guidelines and policies are given in the Regulations of Green Bonds in different countries, with more focus on India. Guidelines are also compared with the SEBI guidelines on the issue of different capital market instruments.

In order for the government to launch more awareness campaigns, investors' awareness is also crucial. In India, the idea and its significance for the research are emphasized, starting with a 1000 crore rupee investment made with Yes Bank in 2015 and followed by an investment of about 600 crore rupees made by CLP India. The next bank was Axis Bank, which also released USD 500 million with international accreditation. There has been a tremendous increase in research on this concept since SEBI adopted the Green Bond Guidelines in 2016, which major bond market issuances must follow. It is important for investors to understand that the market will contribute to community development and climate change mitigation.

### ***Relevance of the proposed study for policy making:***

The study's applicability would aid in changing the rules that SEBI and other regulatory agencies have issued; once these rules are changed, it will undoubtedly inspire more and more small businesses and retail investors to come forward and raise these environmentally friendly, eco-friendly, and sustainable energy projects through green finance. Following the identification of the knowledge gap between investors and SMEs, the government will be recommended to implement new policies and make the necessary adjustments to current ones in order to increase the appeal of these instruments to investors. The average investor will make a socially responsible investment in this. Because of their convenience and government-sponsored incentives, entrepreneurs also see the value of community development-based initiatives.

Therefore, the policy would be devised and evolved in such a way that both the investor and the SMEs run towards Eco-friendly economic development.

### ***Relevance of the proposed study for society:***

The proposed study would be helpful to society with reference to the investors to know an innovative variety of financial instruments. Since the proposal is to bring more awareness among the investors, the portfolio of the investment will be increased. A more diversified portfolio will expand the capital market's reach. The research project would help existing SMEs and aspiring entrepreneurs increase their capacity to initiate environmentally friendly projects; it would motivate potential entrepreneurs and provide opportunities to positively impact society because these are socially responsible projects for community development.

Those who are eager to demonstrate their abilities and skills for community development but lack funding are given the chance to contribute to the nation's success successfully.

### ***Current Status:***

Green bond sales in the year 2024 began with \$356 billion, remarking as the busiest half year, the highest record since its inception. (Bloomberg Data). Both governments and corporations are responsible for the problems, so sales hit their highest point. In 2023, the global sustainability and green technology market was anticipated to be worth USD 17.21 billion. The



market is predicted to increase from USD 20.90 billion in 2024 to USD 105.26 billion by 2032, displaying a CAGR of 22.4% during the forecast period.

**Role of Green Technology:** The green market is rigorously growing on a positive note due to the increasing investment in IT-customized solutions and services. Integration of green technology solutions with Machine Learning, Artificial Intelligence, Internet of Things (IoT), blockchain, cybersecurity, big data, cloud computing and other technologies.

This helps in capturing and analysing the real-time and sources like Global Positioning System (GPS), sensors and cameras. generative AI with ESG/Sustainability in April 2023.

Billio (2024), considered the ESG factors which has gained good attention and has become a common practice in risk calculation and measuring the impact on credit risk, debt and equity costs and the costs of the bonds, suggested that the positive ESG ratings would definitely contribute towards better credit ratings.

Additionally, governments, public institutions, and private businesses worldwide are investing in technology to protect the environment and mitigate negative effects, which is driving market expansion. Remedies that improved the market's trajectory. Three factors in the use of green technology will define how businesses will function in the post-COVID future, according to an article published by Telecom. The three components include embracing digital equity and environmental responsibility, collaborating with green technology companies, and making sustainability a priority in the organization's DNA.

Bonds with 100% use of net proceeds financing or refinancing green/environmental projects aligned with Climate Bonds Taxonomy, data given below:

**Table: 1.Net Proceeds financing or refinance Green Projects**

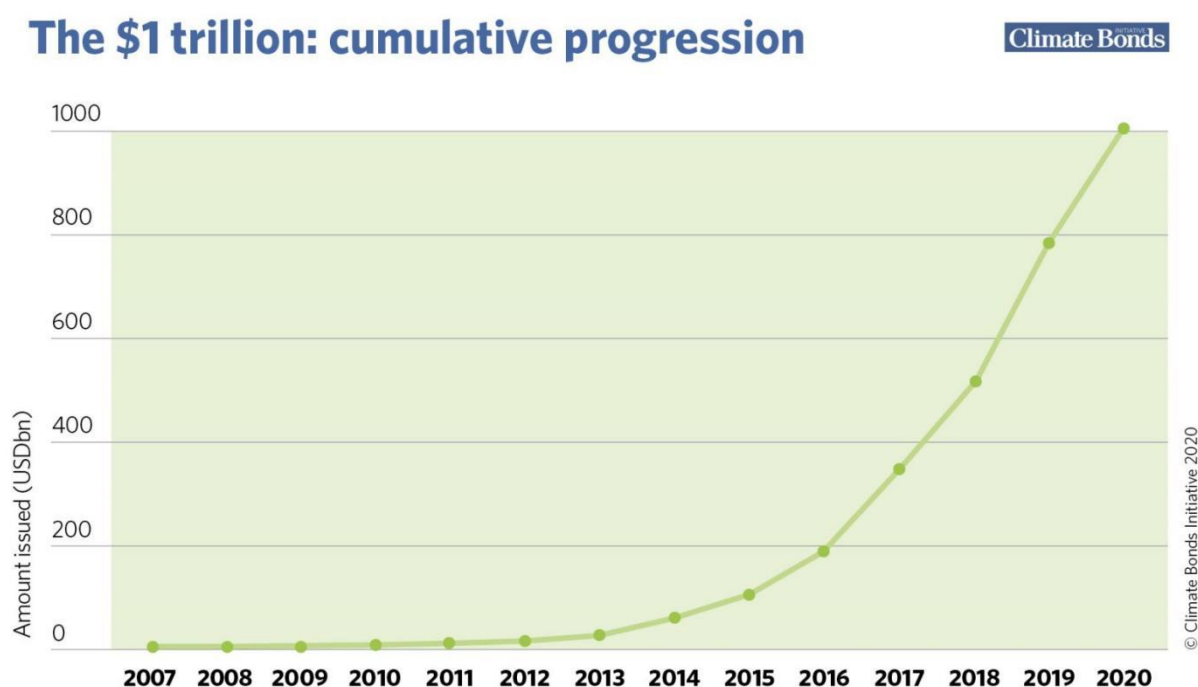
Bond identification	Name of the company	Total amount Issued	Name of the currency	Date of the Issue	Date of Maturity	Certified by CEBI	SPO Provider
1364000001005	Confederation in Switzerland	210,951,000	CHF	December-2024	October-2038		ISS ESG
1548900001001	Ameren Securitization Funding LLC 2024-1	476,121,100	USD	December-2024	October-2041		
1548600001001	Tokyu Corp	10,000,000,110	JPY	December-2024	December-2029		JCR
1439800004001	Global Vision Logistics SdnBhd	50,000,110	MYR	December-2024	July-2038		
1055200004001	Kanton Basel-Stadt	197,000,000	CHF	December-2024	December-2029		ISS ESG
1004100037001	Rikshem AB	1,000,000,000	SEK	December-2024	December-2029		CICERO

Source: Climate Taxonomy





**Table 2 :Cumulative Progression of Green Bond entry:**



The first green bond with a AAA rating was issued in 2007 by the World Bank and the European Investment Bank (EIB), two multilateral institutions. The market has closed at all-time highs each year since it started to take off in 2014. When IFC released its first USD 1 billion green bond in March 2013, it sold within an hour of its announcement, causing the larger bond market to respond. The market was totally rocked in November 2013 when Swedish real estate firm Vasakronan issued the first corporate green bond. SNCF, Berlin Hyp, Apple, Engie, ICBC, and Credit Agricole are important corporate issuers.

**Table 3: Role of Stock Exchanges in Providing Market Access:**

Name of Stock Exchange	Type of Dedicated Section	Launch Date
Oslo Stock Exchange	Green bonds	January 2015
Stockholm Stock Exchange	Sustainable bonds	June 2015
London Stock Exchange	Sustainable bonds	July 2015
Shanghai Stock Exchange	Green bonds	March 2016
Mexico Stock Exchange	Green bonds	August 2016
Luxembourg Stock Exchange	Luxembourg Green Exchange	September 2016
Borsa Italiana	Green and Social bonds	March 2017
Taipei Exchange	Sustainable bonds	May 2017
Johannesburg Stock Exchange	Green bonds	October 2017
Japan Exchange Group	Green and Social bonds	January 2018
Vienna Exchange	Green and Social bonds	March 2018
Nasdaq (Multiple stock exchanges)	Sustainable bonds	May 2018
Swiss Stock Exchange	Green and Sustainability bonds	July 2018
The International Stock Exchange	Sustainable bonds	November 2018
Frankfurt Stock Exchange	Green bonds	November 2018
Santiago Stock Exchange	Green and social bonds	July 2019
Euronext (Multiple stock exchanges)	Green, Sustainable and Social bonds	November 2019
Bombay Stock Exchange	Green bonds	June 2019
Argentina Stock Exchange BYMA	Green, Sustainable and Social bonds	September 2019
Brazil Stock Exchange	Green bonds	September 2019
Nigerian Stock Exchange	Sustainable bonds	October 2019
Hong Kong Exchange	Green, Sustainable and Social bonds	June 2020
Korea Exchange	Green, Sustainable and Social bonds	June 2020
Toronto Stock Exchange	Sustainable bonds	November 2020
Singapore Stock Exchange	Green, Sustainable and Social bonds	n.a
Bolsas y Mercados Españoles (BME)	Green, Sustainable and Social bonds	n.a
Astana International Exchange (AIX)	ESG bonds	December 2022



#### ***Source: Climate Bonds Initiative***

Stock exchanges facilitate market access, and specialized green bond listings have greatly aided the promotion of green bonds. The SGDs and economy are relatively growing, and the issuers are looking for investors who can expect sustainable growth in their returns. The idea of this market is to encourage more and more fixed-income securities in financing the projects which contribute towards the environmentally friendly economy and the rate of growth in relation to the development of technologies and adverse climate change conditions (Sylvia Frydrych, 2021)

#### ***Green Infrastructure Investment Opportunities (GIIO) Programme:***

To meet the emissions reduction targets of the Paris Agreement, an estimated USD 100 trillion in climate-compatible infrastructure is required between now and 2030. The green infrastructure offers enormous investment opportunities worldwide. Nonetheless, there are still not enough recognizable, bankable, and investment-ready projects. Additionally, little is known about the kinds of projects and assets that are eligible for green finance. SNCF, Berlin Hyp, Apple, Engie, ICBC, and Credit Agricole are among the issuers.

To address this issue, Climate Bonds is creating a number of studies that seek to pinpoint and illustrate global investment opportunities in green infrastructure. By doing this, it hopes to increase knowledge about green investments and where to make them, as well as to encourage the issuing of green bonds as a means of funding environmentally friendly infrastructure. In May 2018, the GIIO Indonesia report was released, marking the start of the report series. In the pipeline of GIIO reports currently under development, opportunities in Latin America and Asia-Pacific are being further explored.

#### ***Brown to Green transformation:***

The reports also support the necessity of a brown-to-green shift. As they boost capital expenditures and embrace greener modes of operation, governments and large corporations will gradually reduce their exposure to short- to medium-term brown practices and assets. If businesses like shipping and logistics start to align with a 2-degree emissions trajectory, opportunities for new green infrastructure may present themselves.

#### ***Sustainable Stock Exchanges:***

The goal of the SSE is to offer a worldwide forum for investigating how exchanges can improve performance on ESG issues and promote sustainable investment, including funding the UN Sustainable Development Goals in partnership with investors, companies (issuers), regulators, policymakers, and pertinent international organizations.

#### ***Companies with a Greener future:***

The 108 companies and funds that have earned the Green Economy Mark accreditation from the London Stock Exchange are introduced and honoured in the third Green Economy Mark report. The London-listed issuers contributing significantly to the global green economy and the transition to a low-carbon economy are acknowledged in the 2022 report. In addition, the paper examines the role of financial markets in the global green economy, trends in sustainable investment in important industries and technology, and investors' growing interest in sustainable trading methods.

#### ***2022 Green Economy Mark Cohort:***

This year, 108 businesses with a combined market value of £156 billion were granted the Green Economy Mark. Although they only make up 5% of all London-listed businesses, this group, which is categorized as a sector in and of itself, would be the fourth largest in capital raising since 2020.

#### ***Policies in other countries:***

Studies on a survey from European asset managers towards green bond investment activities. Research proved that poor and unclear reporting is the main obstacle to green bond growth. 108 companies totalling £156 billion in market value were awarded the Green Economy Mark this year. In terms of capital raising since 2020, this group—which is considered a sector in and of itself—would rank fourth while accounting for only 5% of all London-listed companies.

### **3. CONCLUSION:**

Green bond issuance is a complicated process that should ideally be broken down into three stages. The pre-issuance, issuance, and post-issuance phases are the first three. The revenues of a green bond must be utilized to fund or refinance green projects that meet the predetermined green criteria, according to the preliminary internal decision to issue one. The best way to raise money for the green project has been determined to be through bonds. An issuer can fulfil the financial, legal, and regulatory requirements to issue bonds.

The issuer will now approach one or more investment banks to act as advisors in the green bond issuing process, provided this preparatory action has been completed. To successfully prepare and execute the issuance deal, the bank should ideally possess knowledge of the green bond market. The standardized criteria and the principles the company should align to in order to issue green bonds are several. For instance, there are green bonds endorsed projects to catalogue and green bond principles that are tailored to Chinese companies. For Indian corporations, the Brazilian Federation of Banks publishes



guidance on issuing green bonds in Brazil (Camila Yamahaki, 2020).

Meanwhile, the Security Exchange Board of India specifies disclosure requirements for the issuance of green bonds. This is a lengthy list since numerous nations and supranational organizations are developing guidelines to identify green bonds. Investors usually have the necessary abilities to assess financial risk and return metrics for bonds, but they frequently lack the necessary capabilities to assess the green qualities of green bonds. Green Bonds are mostly fixed-income debt security, especially for the projects involved in environmental and sustainable activities; they may also be products and assets like forest recovery, renewable energy and conservation of water resources (Vanessa Parreira Perin, 2025).

They cannot determine whether those characteristics truly adhere to the selected standardized criteria. To give investors this information and enable them to make well-informed judgments regarding the purchase of the bonds, second views and certifications are issued. To guarantee the tracking of the proceeds, the issuer will get when the bond is put on the market; the green bond issuer must either set up additional procedures or form a separate allocated account. Investors do not anticipate any particular information regarding using the bond issuance proceeds for regular bonds.

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