

**GREEN FINANCING THROUGH GREEN BONDS:
(ISSUES AND INITIATIVES BY CORPORATE AND BANKS IN INDIA
IN RAISING FINANCE FOR ENVIRONMENTALLY SUSTAINABLE
PROJECTS)**

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ABSTRACT

Green Bonds can be defined as securities issued for raising debt finance the proceeds of which are utilized for financing such projects which are hundred percent green in nature or are environmentally sustainable. Under the present scenario Green Bonds have emerged as a very viable way of linking the capital markets to the climate change issues. Currently India is next only to China as far as emerging green bond market is concerned. The study attempts to understand the role of Indian banks and the corporate sector in raising finance through issue of Green Bonds which is an integral part of Green Financing. It also aims to understand the barriers and challenges leading to slow growth of issue green bonds in Indian financial markets.

Key Words: Green Bonds, Emerging Economies, Indian Corporate and Banking sector, sustainability, climatically favorable.

INTRODUCTION

Green Bonds can be defined as securities issued for raising debt finance the proceeds of which are utilized for financing such projects which are hundred percent green in nature. These bonds can be issued by financial, non financial or public entities and are aptly called as green bonds as the funds generated by the issue of such bonds are meant for financing only such projects which are environmentally sustainable. Green Bonds thus represent such debt instruments where the issuing agency of such bonds lends further to such parties who are going to use those funds only for green or climatically

favorable projects. Therefore the surety of the specified use of funds towards green projects has to emerge from the third party who is borrowing funds from the organization which has issued green bonds. For the investor Green Bonds represent fixed income securities backed by the assets or linked to the issuer's balance-sheet.

LITERATURE REVIEW

The Evolution of Green Bonds

Green Bonds were issued for the first time in 2007 by European Investment Bank (EIB) and then in November 2008 by the World Bank. Till date the bonds have had a journey of twelve to thirteen years. The propounders of the revolutionary idea of dedicating loan funds towards the safeguarding of the planet from repercussions of climate changes and promoting environmental sustainability were a group of Swedish Pension Funds. They put across this idea to World Bank and thus the concept of Green Bonds was born. The Green Bonds have given the investors a way to contribute towards the cause of environment sustainability. The loaning agencies at the other end provide the funds collected through issue of Green Bonds only to those projects which have the above objective in mind. Green Bonds thus have stepped in as an intermediate way to financially connect those persons who shared a similar thought process towards saving and safeguarding the environment. Though the World Bank has always been lending for developmental purposes this was a new idea which could be used towards not only making people aware about the threat of environmental degradation but also channelize the funds towards such projects which aimed at containing and mitigating the climate change hazards. Currently the Green Bonds Model is catering to all the seventeen Sustainable Developmental Goals (SDGs). They are now an integral part of climate change financing. Under the present scenario Green Bonds have emerged as a very viable way of linking the capital markets to the climate change issues.

The Renewable Energy Policy of India and role of Green Bonds

The Indian government has set a target of 175 Gigawatt (GW) of renewable energy by the year 2022. The target of 175 GW is divided into 100 GW from Solar energy, 60 GW from Wind Energy, 10 GW from Bio-Power and 5 GW from small hydro-power. This will require a huge funding of \$200 billion. Though the targets seem huge, currently the country has already established

83 GW of clean energy out of 175 GW. Some more projects amounting to 29 GW are already under installation and few more are in the bidding stage. Considering the huge demand for energy in India which is growing at an average rate of 8 percent the government authorities are sure about achieving the targets in due time (economictimes.indiatimes.com.,Oct.16,2019). For this purpose Green Bonds are being seen as an innovative capital market instrument to channelize funds from willing investors into sustainable renewable energy assets (International Renewable Energy Agency (IRENA), 2020) and can serve as effective capital market instruments to provide for reallocation of capital towards sustainable renewable energy solutions. According to Indian Renewable Energy Development Agency (IREDA) availability of funds is being seen as the biggest impediment for clean energy projects. For this, issue of Green Bonds was being seen as a viable source of funding (Bahuguna, 2016).

Creating a conducive climate for issue of Green Bonds in India

Any new policy, framework or innovation requires an environment of acceptability for further development. The responsibility of creating such an environment depends on the various regulatory bodies of the country. Flammer (2020) is of view that existence of a regulatory body to govern and regulate the green bonds market was an important factor for the growth of this market. Similar views shared by Jha and Bakshi (2019) also advocate the design of a transparent guideline for issue of financing instruments under Green Finance. A proper standardized regulatory mechanism can give a boost to the green finance sector and help it to raise the adequate finance required for green projects. The green market is still at a nascent stage in India. Financing, which is considered a passive activity, can contribute a lot towards reducing the cost of doing business in a greener way. A major step taken by RBI in August 2016 was to increase the credit enhancement limit of such bonds from 20 percent to 50 percent of issue size. Secondly it also gave permission to banks in India to issue rupee denominated bonds in international markets. Besides allowing brokers to participate in corporate bond repo market RBI in consultation with SEBI also authorized direct transaction of Foreign Portfolio Investors (FPIs) in corporate bonds without involving brokers. The Bonds meant for greening the economy received a formal definition from Securities Exchange Board of India (SEBI) in 2016. The Green Bonds or Green Debt Securities were meant to include many types of green projects such as Renewable and sustainable energy including wind, solar, bioenergy, other sources of energy which use clean technology etc.,

clean transportation including mass/public transportation etc., sustainable water management including clean and/or drinking water, water recycling etc., climate change adaptation energy efficiency including efficient and green buildings etc., sustainable waste management including recycling, waste-to-energy, efficient disposal of wastage etc., sustainable land use including sustainable forestry and agriculture, afforestation etc. and biodiversity conservation As a part of disclosure norms it was made compulsory to annually report as to which projects the allocations of proceeds of green bonds were made. It means that SEBI was particular that the details of fund allocations be made periodically as far as Green Bond issues were concerned. The issuers have to make periodic filings and disclosures to the stock exchange also. All these actions and rulings helped to provide a fillip to the green bonds market.

OBJECTIVES AND RESEARCH METHODOLOGY

The study followed qualitative research methodology and data collection was made with content analysis. Majority data were obtained from secondary sources of information. Extraction of contents and analysis of the data were with manual coding. The main purposes of this research is getting an insight into the Green Bonds and growth of issue green bonds. A lot of reports are available on green financing and sustainability issues facing the world and also the steps being taken for climate change repercussions. The reports of various agencies combating the above mentioned issues at global and domestic level indicate how funds are being raised in the international markets to tackle the environmental degradation matters.

The main objectives of this study are;

1. To understand the role of Indian banks and the corporate sector in raising finance through issue of Green Bonds which is an integral part of Green Financing.
2. To understand the factors leading to slow growth of issue green bonds in Indian financial markets.

The study is exploratory in nature. It is based on secondary data which has been collected from reports of various agencies operating at government level. Websites and annual reports of the banks and companies have also been used as a source of quantitative data. Since the first green bonds issue in

India was made in the year 2015, the study traces the journey of green bond mode of financing since 2015 and the issues related to it.

CONTENT ANALYSIS

The Global Green Bond market

The green bond market is a sub-part of the overall corporate bond market. The only difference is that the green bonds are a special category of bonds which are issued to those investors who are desirous of having their funds invested in green projects. At a global level the market is being led by USA, France and China. According to a report by global green bonds 2019, the total issuance of green bonds till the end of 2019 has been USD 754 billion.

India's contribution in the Emerging Green Bond Market

Table 1. Green Bonds Issues in Emerging Markets (2012-2019)

Country	Amount of Issue (\$ Million)	Country	Amount of Issue (\$ Million)
China	142900	Colombia	357
India	10897	Ukraine	355
Brazil	5425	Panama	200
Poland	4655	Ecuador	150
Chile	3870	Latvia	137
Indonesia	2701	Nigeria	136
South Africa	2162	Uruguay	108
Phillipines	2023	Turkey	100
UAE	1857	Slovenia	99
Malaysia	1453	Lebanon	60
Mexico	1155	Estonia	55
Thailand	947	Fiji	48
Peru	886	Kenya	41
Czech Republic	832	Vietnam	27
Lithuania	718	Seychelles	15
Argentina	637	Namibia	4
Costa Rica	503	Barbados	1
Morocco	459		
TOTAL	185973		

Source: Emerging Markets Green Bonds Report 2020, International Finance Corporation

According to a new study by BloombergNEF more than \$200 billion of green bonds have been issued in the 2020. Though the COVID 19 pandemic acted as a big setback to the green bond issues during the initial part of the 2020, however the latter part of the year saw a huge recovery and there has been an increase of 12% over the previous year in the issue of green bonds (smart-energy.com). As per the same study the green bonds have grown in popularity ever since their evolution and account for around 47 percent among all the sustainable debt financing modes such as green loans, sustainability bonds and climate bonds etc. The total issue of such sustainable debt financing modes has surpassed \$ 2 trillion in current times. The Green Bonds market has been able to develop and has attracted a lot of attention in the past few years. Though the pace is slow the various countries across the globe are slowly realizing the importance of building a climatically favorable world and contributing towards such projects. Many countries in the various continents of Asia, America, South America, Africa and Europe have also joined the green bonds market. From Table 1 it can be observed that amongst all the countries, China is leading in the green bond market with a total issue of \$142900 million during the period 2012 to 2019. It is followed by India who has raised \$10897 million through green bonds issue.

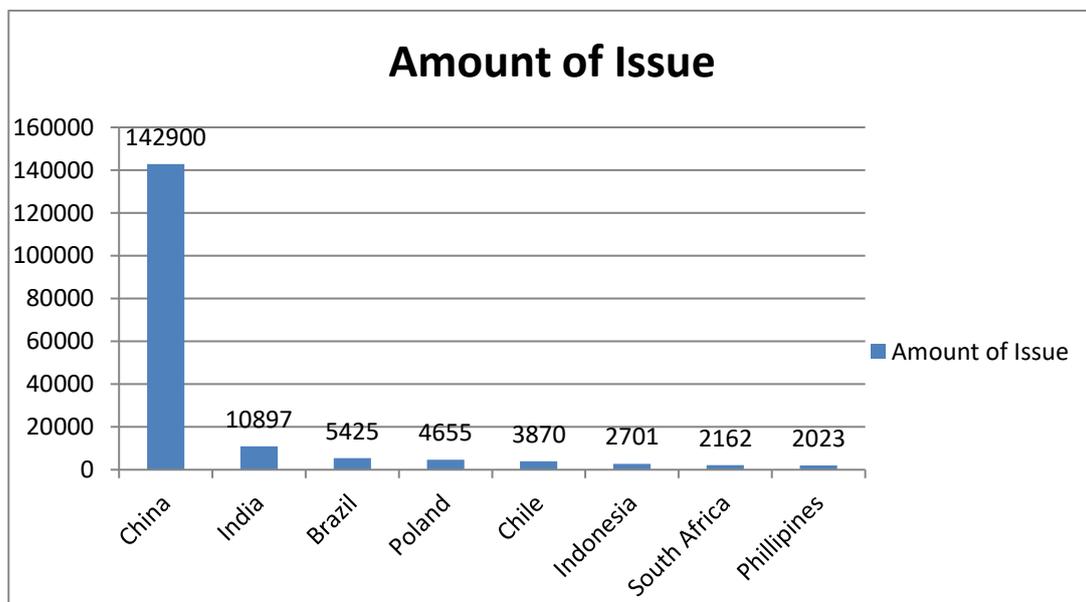


Figure 1: Green Bond Issues of top seven countries among emerging markets

The gradual expansion of Green Bonds in India and participation of Banks and Corporate Sector in Green Bond issue

An in- depth study conducted by Ram Prasad Bandi (2016) makes an observation about the growing concern about sustainable development among all the countries. And therefore a concerted effort towards Green Finance through Green Banks, issue of Green Bonds and Green Exchanges had become imperative. Drawing perspectives on Indian Green Bonds market he opines that though India entered the Green Bonds canvas only in 2015 it had huge potential and a growing market. The same could prove highly relevant to the corporate and small and medium enterprises of the country. It has also been concluded by him that though India has an enormous potential to further capture the Green Bonds market it also required streamlining of processes and setting up certain standards, rules and regulations for better performance and growth.

Initiatives by the Banking Sector in India

Table 2: Green Bond Issues by the Indian Banking Sector

Year	Bank	Amount
February 2015	YES Bank	USD 160 Million
March 2015	Export Import Bank of India	USD 500 Million
August 2015	YES Bank	USD 50 Million
November 2015	Industrial Development Bank of India	USD 350 Million
June 2016	Axis Bank	USD 500 Million
December 2016	YES Bank	USD 50 Million
September 2018	State Bank of India (SBI)	USD 50 Million
		USD 650 Million
March 2020	State Bank of India (SBI)	USD 100 Million
	Total	USD2410 Million

Source: Data compiled from websites and Annual Reports of above banks)

From the above table we can see that In India there are 3 banks in the public sector namely Industrial Development Bank of India (IDBI), Export Import Bank of India (EXIM Bank) and State Bank of India (SBI) and 2 banks in the

private sector i.e. Yes Bank and Axis Bank who have taken the initiative for issue of green bonds in India. The State Bank of India which is the biggest public sector bank in India has till now issued green bonds worth USD 800 million followed by EXIM bank and Axis bank with green bonds issued to the extent of 500 million. The YES bank has been the first bank in India to issue green bonds. The total amount of green bonds issued by all the banks together from 2015 is USD 2410 million.

Table 3. Initiatives by the Corporate Sector in India

Date	Company	Amount
September 2015	CLP Wind Farms	USD 90 Million
September 2015	Renew Power Ventures	USD 375 Million/ Rs.45 Crores
February 2016	Hero Future Group	USD 44 Million /Rs.300 crores
August 2016	National Thermal Power Corporation (NTPC)	USD 300 Million/ Rs.2000 Crores
July 2017	Rural Electrification Corporation (REC)	USD 450 Million
July 2017	L & T Infrastructure Finance	USD 103 Million
September 2017	Indian Renewable Energy Development Agency (IREDA)	USD 300 Million
December 2017	Indian Railways Finance Corporation (IRFC)	USD 500 Million
2017	Energy Efficiency Services Limited (EESL)	USD 100 Million
2017	Power Finance Corporation Limited (PFCL)	USD 400 Million
July 2019	Greenko Group	USD 950 Million
July 2019	Adani Green	USD 500 Million
2019	Adani Green	USD 362 Million
September 2019	Azure Power	\$350 Million
2019	Renew Power	USD 90 Million
	Total	USD 4914 Million

Source: Data compiled from websites and Annual Reports of companies

The above table reflects the contribution of corporate sector both public and private in the issue of green bonds. The total contribution from the corporate sector during the period from 2015 to 2019 amounts to USD 4914 million. Among the public sector organizations which include NTPC,

REC, IREDA and IRFC the total amount of green bonds issued amounts to USD 1550 million. Similarly the share of private sector companies like CLP Wind Farms, Renew Power Ventures, Hero Future Group, L & T Infrastructure Finance, Greenko Group, Adani Green and Azure Power in green bond issue has been USD 2412 million. This shows that the share of private sector is more than 1.5 times the share of public sector.

In case of banks as well as the corporate in the public and private domain the funds have been majorly deployed in the field of solar energy. Also most of these projects are concentrated in the southern states of Karnataka, Tamil Nadu and Andhra Pradesh. Though there are green projects being undertaken in other states like Maharashtra, Gujarat, Rajasthan and Uttar Pradesh, there are still many states which do not have sustainable investments of such kind. In a study by Caroline Flammer (2020) on corporate sector in the world, it has been assessed that the issue of green bonds by the companies has sent positive and encouraging signals to the markets. Based on study of 217 public companies in the world during 2007 to 2018 it was found that in the long run these companies have been able to generate better returns on their assets and equity funds in the long run. In addition to it the companies have also been able to reduce their carbon footprint in the environment. Similar views shared by Babita Jha and Priti Bakshi (2019) also advocate the design of a transparent guideline for issue of financing instruments under Green Finance. A proper standardized regulatory mechanism can give a boost to the green finance sector and help it to raise the adequate finance required for green projects. The green market was still at a nascent stage in India. Financing, which is considered a passive activity, can contribute a lot towards reducing the cost of doing business in a greener way. The cost of raising finance is a major concern of the corporate sector. Green bonds have emerged as a way to fund green projects that can reduce the cost of capital and improve returns (Anil Kumar G, 2019, www.financialexpress.com).

Oversubscription of issues

Despite the inconsistency in the amount subscribed over the 6 year period the various issues of Green Bonds by the banks and companies in India have been oversubscribed many times. According to Ayan Sharma (2018), during the past few years there has been a huge interest in the green bonds both from issuer's side as well as investors' side. This is so because all the issues of

green bonds have been oversubscribed manifold. This is an indicator of the popularity of the Green Bonds amongst the stakeholders concerned. The EXIM bank issue was oversubscribed to the extent of 3.2 times where as that of IREDA 2017 was oversubscribed 5.1 times. The demand for the bond issue was very high which shows the social responsibility of the investors. The EXIM Bank also helped to open new markets for tapping funds out of Asia markets. All other issues have also been oversubscribed.

Inconsistent chronology in amount of issue of Green Bonds in India

From the following table it can be seen that though India entered the Green Bond market in 2015 with USD 1525 Million.

Table 4. Year wise issue of Green Bonds in India

Year	Amount (USD Million)
2015	1525
2016	894
2017	1853
2018	700
2019	2252
2020	100

Source: Graph showing year-wise Green Bond Issues in India

However it has not been able to maintain the quantum of issue of green bonds in a consistent way. The Green Bond issues in India have been through a series of ups and downs. The amount declined in 2016 to USD 894, increased in 2017 again to USD 1853 followed by a decline again in 2018 to USD 700 and increase again in 2019 to USD 2252. The amount of issue of green bonds is the highest in 2019. This also reflects to the slight indifference of our banks and corporate sector towards adopting green bonds as an effective way of financing green projects. As per the Economic Survey 2018-19 the investment in green infrastructure needs to be doubled. The target of achieving 175 GW of renewable energy by 2022 is not too far away. Also the same objective cannot be achieved by public sector alone. The private sector

too will have to share the mantle in a big way and come forward to meet the targets.

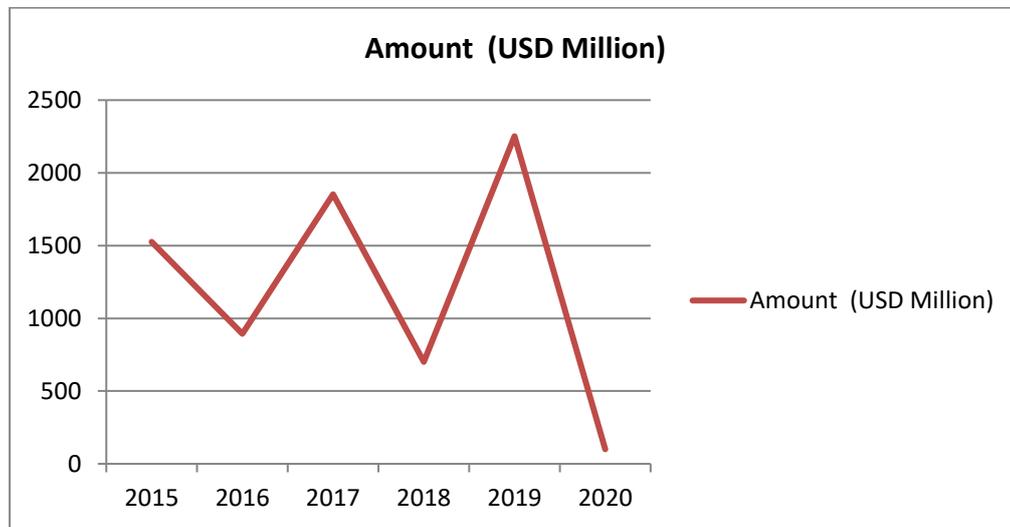


Figure 2. Source: Indifference of Banking and Corporate Sector towards Issue of Green Bonds

In an article published in Business Line (www.thehindubusinessline.com 2019), Ramesh, is of the view that there are several factors responsible for the apathy shown towards issue of Green Bonds by the Indian corporate sector. Besides the price disadvantage the main reasons cited are related to lack of awareness and structural aspects.

According to Malhotra (downtoearth.org.in, 2020), the investors are wary of the fact that the money invested by them with an intention towards protection of environment may be 'greenwashed'. The term has been coined to mean that the funds generated through issue of green bonds may be diverted towards other non-green projects. In other words the funds may be used for projects which may not be environment friendly. Literature also cites certain controversial incidents where the proceeds have been used in such projects which have had damaging effects on ecology like floods and water pollution.

IMPLICATIONS AND CHALLENGES AHEAD

The effort made by India to garner sustainable capital through issue of Green Bonds has been laudable. In a short span of time of five to six years it has

tried to achieve the objective of 175 GW of renewable energy out of which almost 50 percent (83 GW) has been achieved. With only 1 to 2 years left to complete the target and the pace at which things are moving in the specific capital markets it is evident that there are many challenges yet which have to be met.

According to Verma (www.saurenergy.com 2020), India was losing its steam and therefore it was difficult for India to meet its target of 175 GW in 2022. There had been a drastic fall in the annual additions in 2018-19 as compared to 2017-18 in both the solar as well as wind energy sector. In 2017-18 the annual addition to solar capacity was 9.4 GW which fell to 6.5 GW in 2018-19. Similarly the annual addition to wind energy capacity fell from 5.4 GW to less than 2 GW during the same period. Though the renewable energy sector showed a cumulative aggregate growth rate of 18 percent, the rate was quite dwindling and the capacity additions have never been able to maintain consistency. The green bonds auctions faced several risks and unaddressed structural issues. Many times the bids have been cancelled or postponed. Rising costs, payment delays and discrepancies in power purchase agreements also add to the problems affecting the viability of the projects. Thus while it was important to work on new mechanisms to deal with risks it was also being felt that the country should start focusing on its long term vision of energy decarbonisation.

RECOMMENDATIONS AND SUGGESTIONS FOR ADVANCING THE GREEN BOND MARKET IN INDIA

According to TERI Report 'Unlocking the Green Bond Potential in India' (2018), it is necessary for the government to intervene directly to boost the green bond segment of raising finance. Also it has been suggested that government should offer certain tax concessions and exemptions to those who invest in green bonds. The tax incentives can act as a big booster to the green bonds market. It has been recommended by various studies that there is a need of credit enhancement measures to promote the cause of green bonds in the country. In Indian context the green bonds are as yet perceived as instruments with high risk which can make the investors wary of investing in them. At the same time there is no guarantee given for the period when the green projects for which the green issue has been made will start generating returns. Therefore new kind of models and measures are required to be developed with government support to boost the green bonds market further. As far as use of funds is concerned a major part of the

proceeds of green bonds has been employed towards renewable energy projects. There was also a need therefore to tap the use of green bond proceeds towards other sustainable projects such as forestry, low carbon transport, low carbon buildings, water and waste management etc.

CONCLUSION

To safeguard the environment against industrial repercussions it is imperative to undertake such projects which are ecologically conducive. With a large number of countries rising up to fact of keeping the environment green they have already made a foray to divert some of the funds raised towards green projects. A movement for raising finance which is exclusively to be used for financing such green projects has already started and even the emerging countries are making their contribution to it even though in a small way. However the drive needs to be taken forward in a big way by all the countries in the world rather than a few. As far as India is concerned it did make a good start in the year 2015. However it could not maintain an even pace throughout the period from 2015 to 2020. The banking and the corporate sector in India need to take the green bond initiative further in a bigger way as they have the goal of fulfilling the IREDA targets of installing 92 GW more of renewable energy sources. Among the emerging markets India has a small share of 5.86 percent in the total amount raised by emerging countries of \$185973 million. However the redeeming feature is that it is the second highest contribution among the emerging countries. At the same time the green bond issues in India have been oversubscribed multiple times which is a strong indication of the investors' interest in the bonds. Despite a headway made by both the banking and the corporate sector in the issue of green bonds by India in 2015 the contribution made by both the sectors has assumed a little lethargy. This is because it has neither been able to maintain the consistency in the issues nor has been able to keep the pace of issue. At the same time green bonds can be considered as innovative debt securities which can effectively divert funds for climate change issues and save the environment from further degradation

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