

---

Centre for International  
Governance Innovation



Canada-India Track 1.5 Dialogue Paper No. 8

# Sustainable Energy through Green Bonds in India

Olaf Weber and Vasundhara Saravade





Canada-India Track 1.5 Dialogue Paper No. 8

# Sustainable Energy through Green Bonds in India

Olaf Weber and Vasundhara Saravade

---

Centre for International  
Governance Innovation



---

## CIGI Masthead

### Executive

President **Rohinton P. Medhora**  
Chief Financial Officer and Director of Operations **Shelley Boettger**  
Director, Digital Economy Research **Robert Fay**  
Director of Human Resources **Laura Kacur**  
Managing Director and General Counsel **Aaron Shull**  
Director of Communications and Digital Media **Spencer Tripp**

### Publications

Senior Publications Editor **Jennifer Goyder**  
Publications Editor **Lynn Schellenberg**  
Graphic Designer **Sami Choudhary**

---

## Gateway House Masthead

### Executive Board

Director, Gateway House: Indian Council on Global Relations **Neelam Deo**  
President, Human Resources, After-Market & Corporate Services & Member,  
Group Executive Board, Mahindra and Mahindra Ltd. **Rajeev Dubey**  
President & CEO, The Indian Music Industry **Blaise Fernandes**  
Executive Director, Morgan Stanley Investment Management **Amay Hattangadi**  
Non-Executive Director, Tata Sons **Ishaat Hussain**  
Director, Gateway House: Indian Council on Global Relations **Satish Kamat**  
Executive Director, Gateway House: Indian Council on Global  
Relations **Manjeet Kripalani**  
Founding Partner, AZB & Partners **Bahram Vakil**

For publication enquiries, please contact [publications@cigionline.org](mailto:publications@cigionline.org).

Copyright © 2020 by the Centre for International Governance Innovation and Gateway House.

The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Centre for International Governance Innovation or its Board of Directors, or the Gateway House Executive or Advisory Board.



This work is licensed under a Creative Commons Attribution – Non-commercial – No Derivatives License. To view this license, visit ([www.creativecommons.org/licenses/by-nc-nd/3.0/](http://www.creativecommons.org/licenses/by-nc-nd/3.0/)). For re-use or distribution, please include this copyright notice.

Printed in Canada on Forest Stewardship Council® certified paper containing 100% post-consumer fibre.

Centre for International Governance Innovation and CIGI are registered trademarks.

---

## Centre for International Governance Innovation

67 Erb Street West  
Waterloo, ON, Canada N2L 6C2  
[www.cigionline.org](http://www.cigionline.org)



Cecil Court, 3rd floor,  
Colaba, Mumbai – 400 005,  
India

---

# Table of Contents

vi	About the Authors
vi	About the Project
vii	Acronyms and Abbreviations
1	Executive Summary
1	Introduction
2	Background
3	Literature Review
5	Results
10	Policy Conclusions
11	Works Cited
13	About CIGI
13	À propos du CIGI
13	About Gateway House

---

## About the Authors

**Olaf Weber** is a senior fellow at CIGI, where his research focuses on sustainability and the banking sector, including sustainability guidelines and regulations for central banks and regulatory bodies. He is currently professor in the School of Environment, Enterprise and Development at the University of Waterloo and a University of Waterloo Research Chair in Sustainable Finance.

Olaf's background is in the areas of environmental and sustainable finance, with emphasis on sustainable credit risk management, socially responsible investment, social banking and the link between sustainability and financial performance of enterprises. His current research interests include financial risk and opportunities caused by climate change and environmental regulations.

Previously, Olaf was managing partner at GOE in Zurich, Switzerland, developing credit risk management and sustainability rating systems, and was head of the sustainable finance group at the Swiss Federal Institute of Technology, Zurich. He earned his Ph.D. from the Technical Faculty, University of Bielefeld, Germany and his M.A. from the Department of Psychology, University of Mannheim.

**Vasundhara Saravade** completed her master of environmental science in the School of Environment, Enterprise and Development (SEED) at the University of Waterloo and currently is a Ph.D. student at SEED. Her research interest addresses the low-carbon economy transition and the growth of climate finance, with a special focus on green bonds. Her master's research specifically looked at the role of regulators in the growth of the green bond markets in emerging economies, such as India and China. She graduated from Carleton University in 2016 with a B.A. (Hons) in environmental studies and a minor in economics.

Vasundhara has worked on policy issues related to climate change adaptation and governance with organizations spanning India, Indonesia and Canada. In addition to her academic career, she writes about various topics related to climate change and has been published in *The Conversation Canada*, *Huffington Post India*, *Fair Observer* and the *Times of India*.

---

## About the Project

The Canada-India Track 1.5 Dialogue on Innovation, Growth and Prosperity is a three-year initiative between CIGI and Gateway House: Indian Council on Global Relations to explore areas for closer cooperation. Experts, government officials and business leaders will convene annually to promote bilateral economic growth and innovation in today's digital economy.

Canada and India maintain strong bilateral relations built on the foundation of shared values and healthy economic ties. Economic exchanges between Canada and India are on an upward trajectory, but there continue to be unexplored areas for mutually beneficial growth, especially in light of rapid developments in technology that are changing every facet of the economy and society in both countries. To address these challenges, the partnership is helping to develop policy recommendations to promote innovation and navigate shared governance issues that are integral to the continued growth of Canada-India bilateral relations.

The Canada-India Track 1.5 Dialogue on Innovation, Growth and Prosperity strives to build closer ties between Canada and India and nurture the relationship to its full potential. Canada and India can be global leaders in innovation, and the Canada-India Track 1.5 Dialogue seeks opportunities to work jointly on multilateral issues and identify areas where improved cooperation could benefit both countries. In addition to its focus on innovation, the partnership examines topics such as collaboration on research and higher education, promotion of Canada-India trade and investment, energy cooperation and issues pertaining to global governance.

Through this partnership, Canada and India can be intellectual partners and cooperate in the design of their global governance frameworks.

---

# Acronyms and Abbreviations

<b>BRICS</b>	Brazil, Russia, India, China and South Africa
<b>CBI</b>	Climate Bonds Initiative
<b>ESG</b>	environmental, social and governance
<b>FDI</b>	foreign direct investment
<b>FICCI</b>	Federation of Indian Chambers of Commerce and Industry
<b>GBP</b>	Green Bonds Principles
<b>GW</b>	gigawatts
<b>LCR</b>	low-carbon and climate-resilient
<b>MDBs</b>	multilateral development banks
<b>NDB</b>	New Development Bank
<b>NPAs</b>	non-performing assets
<b>PSL</b>	priority sector limit
<b>RBI</b>	Reserve Bank of India
<b>SEBI</b>	Securities and Exchange Board of India
<b>UNEP FI</b>	United Nations Environment Programme Finance Initiative
<b>USAID</b>	United States Agency for International Development



---

## Executive Summary

Emerging economies, such as India, will need significant international investment in climate action in order to transition toward a future that is low-carbon and climate-resilient (LCR). India needs fossil fuels at an affordable price and needs to protect itself against price fluctuations. It can meet these needs by investing in Canadian oil companies, given the country's political stability and rule of law. As an emerging economy, India could attract greater foreign direct investment (FDI) into its economy through green bonds, a climate finance debt instrument that addresses environmental and climate-related challenges.

Not only are green bond issuances linearly increasing over the years, but they also seem to be driven by institutional pressure, provided in part by the Securities and Exchange Board of India's (SEBI's) regulation, as well as by the informal advocacy efforts of market stakeholders. These findings are consistent with institutional theory and contribute to it by introducing the regulatory perspective of the green bond market.

---

## Introduction

To transition toward an LCR future, it is estimated that India will need US\$2.3 trillion in international investment for climate action by 2030 just for climate action (Kumar, Vaze and Kidney 2019). To fulfill some of its climate targets, India reset its 2022 renewable energy targets from 175 gigawatts (GW) to 223 GW (Hill 2018). However, even this target has large capital costs, with estimates in the range of US\$100 billion each year (United States Agency for International Development [USAID] 2015). Given these significant investment needs that span various sectors, upgrading or even building any such infrastructure creates a funding gap — one that cannot be filled by public financing alone (Agarwal and Singh 2017). The total central government budget is approximately US\$383 billion (Kumar, Vaze and Kidney 2019, 100); this investment gap further poses a challenge for implementing climate targets.

Global investment opportunities for long-term financial returns exist in emerging countries. In 2018, India's economy grew at a rate of 7.4 percent (IMF 2018). This growth rate is sustainable for emerging economies where investment needs pertain to infrastructure creation. It is also through infrastructure creation that India's social and economic priorities are addressed (Lu, Yiu and Soman 2016). However, when it comes to investing in emerging markets, global investors face certain financial and social risks (Henisz and Zelter 2010). That is why governments and regulators in emerging markets play an important role when it comes to attracting FDI into the economy.

One way of attracting greater FDI can be through an innovative financial tool known as a green bond. A green bond is a climate finance debt instrument, which addresses environmental and climate-related challenges through adaptation or mitigation financing (Climate Bonds Initiative [CBI] 2018). Its popularity is proven by its exponential growth every year, which has been surpassing official development aid since 2017 (CBI 2019).

In 2018 alone, the green bonds market crossed US\$167.3 billion (ibid.), and this annual growth is indicative of how investors — both mainstream and green — are looking to finance activities related to the low-carbon transition. Another shift in 2018 was the growth of emerging market issuances by two percent globally<sup>1</sup> — indicating that the opportunities in emerging markets are growing faster than those in developed ones. However, with various investment risks in emerging markets, there is a need to understand what governments should do to increase investor confidence. The research discussed in this paper fills this academic gap by examining the role of institutional pressures in shaping the green bond market of an emerging country such as India. The results show that institutional actors, such as regulators, are seen to be integral to growing the green bond market in emerging economies such as India. However, their existing role and their ability to influence the market depend on prevailing norms of the institutional setting. We find that to support growth, regulators need to coordinate

---

<sup>1</sup> Emerging markets accounted for US\$40 billion of green bond volume in 2018 — including issuances from supranational development banks — and contributed to 31 percent of global issuances in 2018, compared to 29 percent in 2017 (CBI 2019). Although developed market issuances represented 69 percent of 2018 issuances, it was a slight fall from 71 percent in 2017 (ibid).

and set out harmonized and clear definitions of “green,” create the necessary market ecosystem and engage with high-priority social actors to implement the institutional changes effectively.

The remainder of the paper is organized as follows: the next section introduces the background of India’s financial sector and its green bond market. The third section describes the current academic literature on green bonds and their risk perception, institutional aspects in terms of country-level characteristics, the regulatory gaps in this market, as well as our research questions. The fourth section presents the results in terms of descriptive statistics on the Indian market found using the CBI database, as well as qualitative themes from key stakeholder interviews. The final section on policy conclusions discusses the implications of our findings for improving green bond market governance and tapping into future opportunities for both India and Canada.

---

## Background

Most project financing in India is conducted by banks and non-financial companies, which poses an asset-liability mismatch for long-term projects, given that 30 percent of India’s GDP is in short-term bank deposits (Kumar, Vaze and Kidney 2019; United Nations Environment Programme Finance Initiative [UNEP FI] and Federation of Indian Chambers of Commerce and Industry [FICCI] 2016). Consequently, the Reserve Bank of India (RBI) also set targets for financial lenders, known as priority sector limits (PSLs), to encourage financing of nationally important socio-economic sectors,<sup>2</sup> one of which is renewable energy (RBI 2018). According to these PSLs, banks can only lend up to Rs.150 million (approximately US\$2.2 million) to borrowers financing renewable energy projects (ibid.). With the energy sector growing due to increasing demand, this PSL target becomes a handicap for banks as well as for borrowers trying to finance bigger renewable energy projects. Therefore,

---

2 The PSL was introduced to make it easier for sectors and segments of the Indian economy that find it hard to get access to credit. These include agriculture, small-to-medium-scale enterprises, social infrastructures, affordable housing, education, renewable energy and others that fall under the weaker sections of society (such as small-scale industries and minorities) (RBI 2015).

renewable energy sector growth faces significant financial constraints, such as high borrowing costs in India (USAID 2015),<sup>3</sup> internal financial sector limits for investment (ibid.),<sup>4</sup> upfront capital requirements for project financing (Weber and Feltmate 2016) and asset-liability mismatch (USAID 2015; Kumar, Vaze and Kidney 2019).

These constraints highlight the need to introduce new financing instruments, including green bonds, which can leverage a large and diverse investor base, such as institutional investors (USAID 2015) that are interested in various types of green investments (Allen 2017).

## India’s Green Bond Market

India was the eighth-highest global issuer of green bonds in 2017 (CBI 2017) but fell to twelfth position in 2018 (Kumar, Vaze and Kidney 2019). With a total of US\$7.15 billion issued as of the end of 2018, Indian issuers also had the most certified green bonds in the global market (CBI 2017; Kumar, Vaze and Kidney 2019). For Indian issuers, having certified green bonds highlights the trend to tap into deeper pools of capital, like those held by foreign institutional investors (CBI 2016).

It is the role of the public sector that ultimately decides the fate of the green bond market. For instance, private Indian issuers of climate-aligned bonds in the energy sector have benefited in terms of attracting greater investment, due to guarantees provided by the state-owned India Infrastructure Finance Company Limited (Kumar, Vaze and Kidney 2019, 103). This shows that credit support from public institutions can increase the attractiveness of small and medium-sized issuers for risk-averse international investors (Kumar, Vaze and Kidney 2019).

---

3 In India, long-term interest rates are high (7.21 percent) compared to European (0.93 percent), US (1.84 percent) or Canadian markets (1.25 percent) (Organisation for Economic Co-operation and Development 2016), and this makes debt an unattractive venture. This is further exacerbated by the lack of fixed interest rates (due to short-term lending and asset-liability mismatch) and the near absence of bond markets in India. These factors raise costs of new and unestablished sectors such as renewable energy by 24–32 percent, compared to the rates offered by North American or European institutions (USAID 2015, 1).

4 Standard Chartered has an internal sectoral limit that helps with reducing risk by limiting exposure to any one market, sector or technology (USAID 2015, 6).

---

## Literature Review

As John Joshi, Stephen Liberatore and Christopher Flensburg (2013) highlight, some of the key drivers for the development of sustainable investment products, such as green bonds, are:

- higher energy prices;
- the push at a significant pace for greater resource security among emerging markets such as India and China;
- increasing global climate change impacts;
- rapidly developing countries;
- technological improvements, such as the low cost of renewable energy;
- tighter laws and regulations; and
- environmental, social and governance (ESG) investor mandates becoming more prevalent.

To manage climate change risks and opportunities, the financial sector now recognizes the need to address the green transition through such innovative markets. To grow such markets, Joshi, Liberatore and Flensburg (ibid.) recommend using market-based strategies that not only ensure greater transparency among stakeholders, but also tap into robust sources of capital, including those found through institutional investors. Consequently, green bonds are now becoming core strategic investments for some key investors because they diversify their investment portfolios (Febi et al. 2018). For instance, “all green bond issuances to date have been oversubscribed and have attracted a wider pool of investors than the vanilla equivalents by the same issuer” (Kumar, Vaze and Kidney 2019, 102). For emerging countries looking to address some risks and concerns related to green bonds, M. Chiesa and S. Barua (2019) find that green bond issuances having a euro denomination command greater global investor confidence. The euro denomination also allows them to issue bigger size bonds, which further deliver good, risk-adjusted returns for international investors (ibid.). Such supply and demand dynamics of the green bond market are likely to be different across emerging and non-emerging economies, as certain countries, such as India and China, are also considered to

be “drivers of global economic development” (ibid., 142). Emerging market bonds are also larger relative to those sold in non-emerging markets, suggesting higher liquidity and demand for green bonds in emerging markets (Chiesa and Barua 2019; Febi et al. 2018). The literature recommends that due to the heterogeneity of emerging economies, green bond policies and regulation efforts should be tailored specifically to a country, rather than approached as “one-size-fits-all.”

## Institutional Aspects and Country-level Characteristics

When it comes to financing the LCR transition of infrastructure assets, geopolitical and institutional factors continue to play an important role through the green bond market. Andrew F. Cooper (2017) outlines the shifting role that multilateral development banks (MDBs), such as the BRICS (Brazil, Russia, India, China and South Africa) New Development Bank (NDB), can play in increasing the focus toward greater LCR infrastructure financing. The NDB’s model of financing is relatively new, compared to the more traditional development banks, as it follows product innovation by using green bonds in funding niche renewable energy projects (ibid.). The NDB is indicative of a new form of MDB, one that is navigating changing international trade relations and institutional characteristics through improvisation of collective policy making, at both the global and the national level (ibid.). One example is the pursuit of sustainable development financing by India, which did not accentuate any existing geopolitical tensions with China and, on the contrary, taps into China’s own desire to pursue a green economy agenda (ibid.). This move signals that green finance, in particular through green bonds, is increasingly becoming an important topic of international collaboration to address macroeconomic conditions (Broadstock and Cheng 2019).

Another key driver of green bonds is national priorities concerning green finance. In the case of China, a key factor has been the “coupling of financialization of its economy and the centrally orchestrated pursuit of the ‘ecological civilization’ from 2012 (accentuated in 2015), rather than external factors” (Zhang 2019, 211). However, the success of China, based on such unconventional institutional arrangements, has limited applicability in other emerging countries and needs further examination as to what kind of

institutional pressures work in different contexts in favour of the green bond market (ibid.).

This paper addresses the knowledge gap by examining the case of India's emerging economy and its green bond market using an institutional theory lens. Other similar studies find that green bond markets face several institutional barriers when it comes to scaling up in developing markets. Josué Banga (2019) highlights barriers such as misalignment of priorities among various government ministries, lack of policy support for the market, lack of cohesive green taxonomy and lack of capacity in terms of management or issuance experience in the bond market. Despite the global demand in the market, the supply side is also limited, due to a lack of either fiscal incentives for green bonds or an official system of green bond classification that is in accordance with market-based frameworks (Febi et al. 2018).

With greater growth in the market, Linh Pham (2016) suggests that it is important to introduce stronger differentiation strategies between green and conventional bonds to attract a broader pool of investors. To support this point, Irene Monasterolo and Marco Raberto (2018) showcase that green public policies can promote green growth by influencing firms' expectations of the credit market to create a win-win situation for the low-carbon transition. Furthermore, public sector intervention by institutional actors, such as governments or central banks, is important if any green fiscal measures are to have a positive effect on the economy and reduce risks for the country's financial sector (ibid.).

## Risk and Green Bonds

A major institutional driver that shapes the metanarrative of institutional and social behaviour in various settings is risk perception (Tripathy 2017). As a result of the impacts of climate change, risk perception in finance and investment behaviour is slowly changing (Carney 2015; Financial Stability Board 2015; Hunt and Weber 2019). However, there is ambiguity in terms of climate risk management in financial markets, and this uncertainty is legitimizing niche green finance tools such as the green bond (Tripathy 2017). Risk comes into play when future climate uncertainty gets commodified as an exchangeable financial product in the form of a green bond (Christophers 2018). Hence, climate risk is increasingly being commodified in the form of green bonds by public

and private actors that are looking to mitigate or adapt to future uncertainties (ibid.). As Michael Flaherty et al. (2017) point out, green bonds issued by governmental agencies or supranational institutions with long-term maturities can help the market and its investors realize the long-term viability of climate investment as well as offer stability during periods of high volatility (ibid.).

## Regulatory Gaps in the Market

Private sector voluntary regimes, such as investment standards, certification schemes, ratings and third-party assessments, are currently governing the global green bond market. Stephen Park (2018) points out that by having private regulation, there is scope for collaboration as well as competition among various market stakeholders. However, private governance schemes come with their own set of challenges. Firstly, there can be regulatory capture, where governance regimes are vulnerable to interest group pressures and lack public accountability mechanisms to identify, mitigate and disclose these conflicts (ibid.). Secondly, regulatory arbitrage might appear because of the evasion of schemes given the transnational nature of international financial markets (ibid.). Such governance gaps create the need for intervention by public sector actors, such as regulators, to ensure that legitimacy is maintained and market participants follow compliance. However, a purely public sector intervention can create other challenges, such as making the market too prescriptive, especially if the country dynamics are not supportive of a top-down approach. The current regulatory regime of the global green bond market ranks relatively low on prescriptiveness and reflects participants' changing market preferences for permissive rules and norms (ibid.).

In an examination of public regulatory frameworks, Park (ibid.) finds important differences in how the green bond markets of India and China are regulated. The first is that China allows green bonds to finance fossil-fuel-based energy and transportation projects, such as clean coal, nuclear power plants and gasoline-powered buses, which are currently prohibited and restricted under the Green Bonds Principles (GBP) and the CBI's taxonomy (ibid.). Park further suggests that the lack of transparency in any regulatory regime might exacerbate risks of regulatory capture and arbitrage rather than mitigate it (ibid.). This begs the question: what, or who, is shaping

the regulatory space in India's emerging green bond market? Based on this literature gap, the objective of the paper is to pinpoint the various drivers of the green bond market in India and whether or not key institutional actors play an important role in influencing them. The following research questions are addressed:

- What is the current role of institutional pressure on the green bond market in India?
- How do institutional factors further strengthen the growth of the green bond market in emerging economies such as India?

## Results

### Quantitative Results

At the time of this study, complete annual data for the Indian green bond market was available for 2015–2017. Table 1 summarizes the important aspects of the Indian green bond market.

### Issuer Type Trends

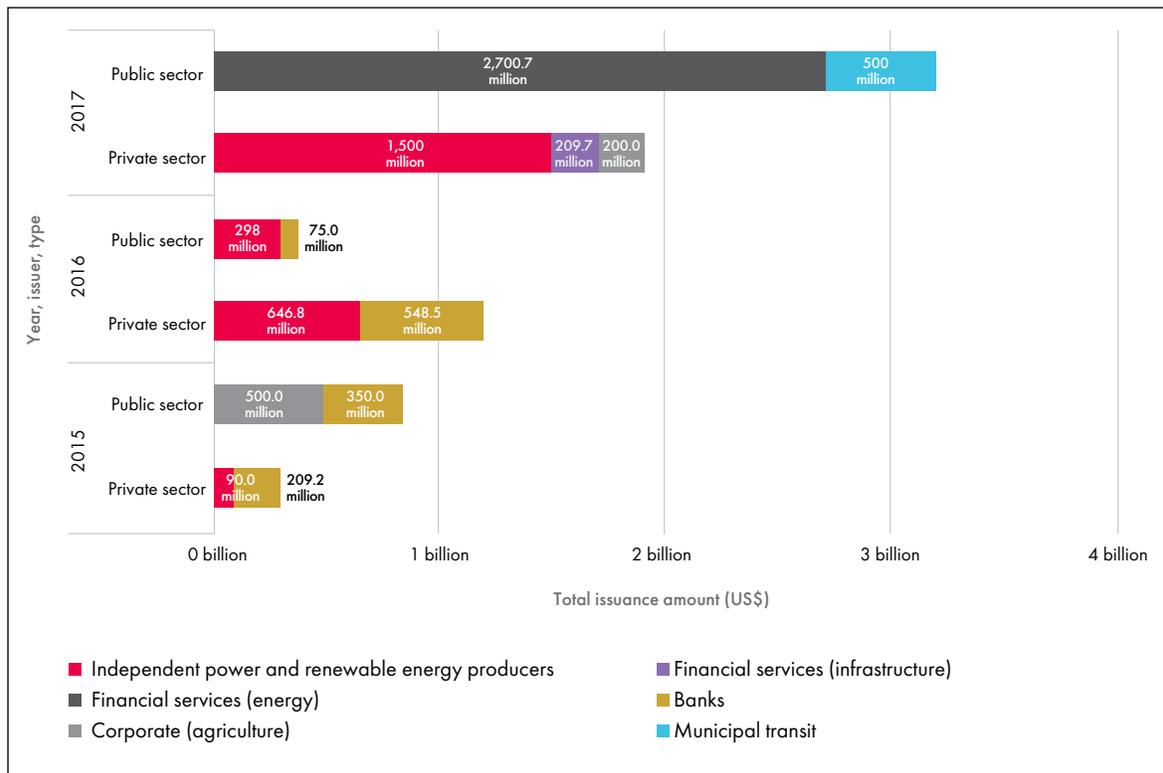
Issuers were categorized as distinct issuers, having more than one green bond issuance in the same sector and based on their characteristics (shareholder and sub-sector type). Although the Indian market issuance started with a private sector bank (Yes Bank) in 2015, most issuances in 2017 were from public issuers (see Figure 1).

**Table 1: Snapshot of the Indian Green Bond Market (2015–2017)**

Variable	Indian Green Bond Market (2015–2017)
Start of the market	2015
Number of regulators	2
Type of regulators	Securities market regulator: SEBI (formal participation) Central bank regulator: RBI (informal participation)
Issuance amounts in different currencies	US\$4.9 billion (10 bonds) US\$2.9 billion (issued in Indian rupees equivalent) (18 bonds)
Total issuance amount	US\$7.8 billion
Total number of issuances	28 green bonds
Total number of sectors	5
Total number of issuers	18 different issuers
Total types of issuers	2 (public or private majority stakeholder)

Source: Authors.

**Figure 1: Issuer Trends in India Based on Total Green Bond Issuances per Quarter, 2015–2017**



Source: Author’s construction using CBI database.

In 2016, private sector issuers took over the market with twice as many issuances, whereas in 2017, issuance reached an all-time high due to state-owned issuers, such as the Indian Renewable Energy Development Agency, which issued Green Masala Bonds worth US\$1.5 billion. These were listed on the London Stock Exchange and were the first green-certified bond issued by a public issuer. Overall, there were six different issuer types in the Indian market. Certain issuers, such as Municipal Transit, were kept in a separate category to ascertain the amount they issued for specific sectors. The diversity of issuers increased when new types of issuers, such as financial services for energy and infrastructure, entered the market in 2017. The market moved in a linear progression of issuances and signalled steady growth due to new types of issuers entering the market every year. Although the Indian market was initially led by a private issuer, there was a shift in 2017. Public issuances rose almost eight-fold (US\$373 million in 2016, versus more than US\$3 billion in 2017) as compared to private issuances (almost

US\$1.2 billion in 2016 to almost US\$2 billion in 2017). This indicated a publicly driven green bond market.

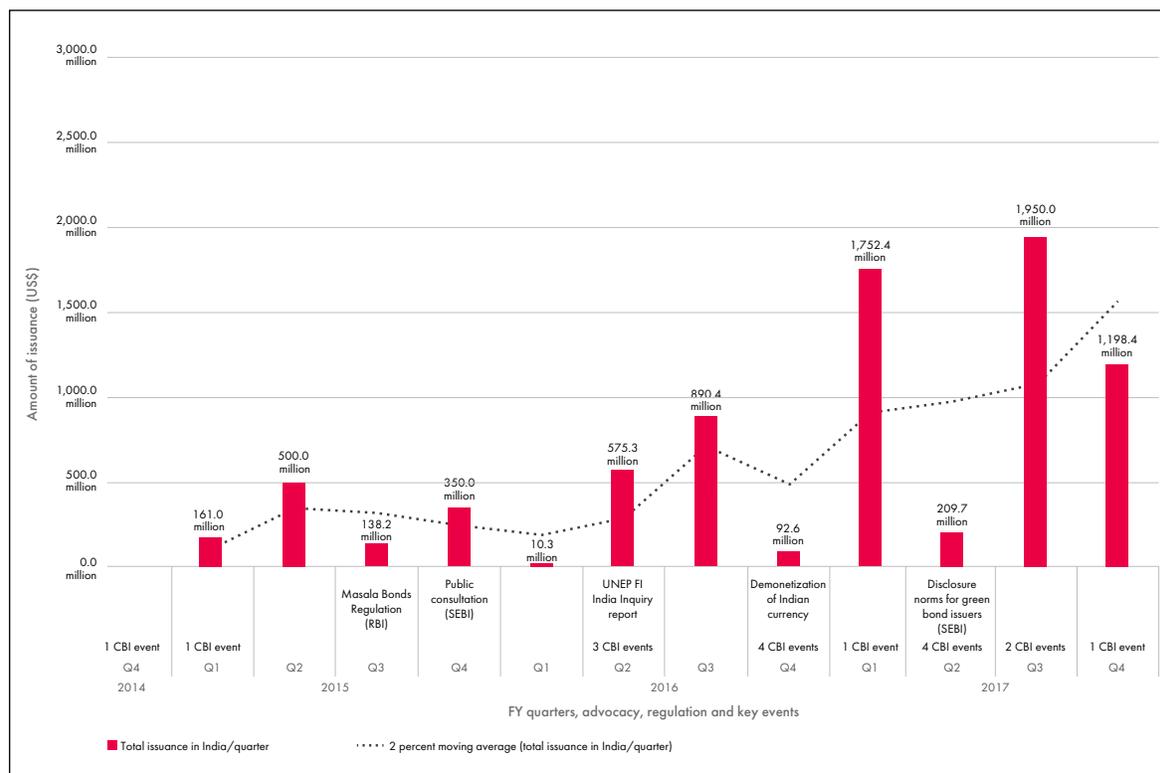
### Sector-based Trends

In terms of the sector-based trends for 2015–2017, the proceeds of the bonds went to five different sectors: water, transport, buildings, adaptation and energy. The most important was energy (25 out of 28 green bonds mentioning it in their use-of-proceeds), whereas other sectors were not as important. Transport (four bonds) and water (two bonds), however, were prioritized more consistently (issuances in two years or more) compared to the others.

### Advocacy, Regulation and Relevant Events

In terms of advocacy events, there was a total of 17 CBI events; however, the number was consistently higher between 2016 Q1 and 2017 Q2 (see Figure 2). In terms of the impact of regulation and other events, Figure 2 shows that the market started after two CBI events for India held in

**Figure 2: Green Bond Issuances per Quarter, Mapped with Advocacy Events from CBI, Regulation Issuances and Other Key Events**



Source: Author’s construction using CBI database.

2014-2015. Issuance picked up after the RBI allowed banks to issue Masala Bonds in foreign markets in Q3 of 2015 as well as with the release of the UNEP FI India Inquiry report in Q2 of 2016.

However, in Q4 of 2016, the unexpected demonetization of certain Indian currencies impacted India’s overall financial sector. Although from Q4 of 2016 CBI events took place consistently each quarter, India’s green bond issuance reached its highest point in Q3 of 2017 after the release of relevant guidelines and disclosure norms by SEBI, the market regulator. Overall, the market seemed to be moving upward in a linear fashion, and issuance increased following CBI events, the release of regulations or when indirect policy support (such as the ability to issue Green Masala Bonds internationally or the UNEP FI report on India) was provided to the market.

## Qualitative Results

This section summarizes the sub-themes from the interviews (with quotes connected to participant number) regarding investors’ confidence, market

regulations, current market challenges and the business case of the green bond market. As mentioned by an investor organization for domestic investors in India, “Factors like coupon rate and currency of issuance played a big role in what is viable” (participant 8). However, as an industry association representative said, “Cost of financing and credit risk is a real challenge when it comes to projects in India, and that is why the green bond market is still in its niche stages” (participant 7). For this market to grow in India, “an investor pull needs to be created” (participant 3) and “systemic financial risks” have to be addressed. However, in terms of actually understanding the appetite for retail and domestic investors, more domestic or rupee issuances are needed in the market (participant 3).

Awareness about ESG integration and climate change is currently very low in India, and this hampers market potential (participant 3). In India, “there is an added cost to issuers if awareness is not present in investors, and that is why a disclosure route was chosen by the regulator”

(participant 4). However, responsible investment has started to grow, with ESG integration and reputational risks being important investment decision factors (participant 10). For example, even if “clean coal is included in a green bond, it will not be bought by investors that have specific mandates to avoid such investments” (participant 10). Demand for such green bonds will vary and pose a risk for investors that represent socially responsible investment interests.

Another interesting trend for international investors in emerging markets is the type of projects rather than the type of issuer. As one participant mentioned, “They are more interested in encouraging the greening of existing assets, and this means not hindering any issuer type from entering the market. However, the market needs to be kept credible, and for big anchor investors to place their orders, rigorous analysis and reporting need to be conducted to show the integrity of the project” (participant 10). These investors are not just interested in “business-as-usual cases and would like to see more ambitious projects” (participant 9), especially among conventional issuers that come from carbon-intensive sectors such as oil and gas. Overall, the responses signalled that investor confidence in India is mainly driven by the financial and reputational benefits from green investments and global trends toward ESG integration. These directly impact disclosure levels followed by issuers in this market.

Next, the interviews addressed market regulations such as the Disclosure Requirements for Issuance and Listing on Green Debt Securities, issued in 2017 by SEBI. This has been India’s first and, so far, only formal regulation in the green bond market. The push for this regulation was due to investors and issuers being more interested in seeing a “regulatory stamp on the market” (participant 3; participant 5). This regulation has been modelled for listed Indian issuers and is based on global best practices such as the CBI taxonomy and the GBP. It was released after public consultation, as well as in conjunction with several relevant government ministries, including the Ministry of New and Renewable Energy and the Ministry of Finance. The impetus for keeping the regulation as disclosure norms was to allow investors to decide where they want to invest (participant 3). However, most regulators highlighted that green finance was not an area of focus in India, given that climate change sensitivity is not high. As a senior policy

maker highlighted, “climate-related disclosures are fairly poor for India Inc.” (participant 4). Other countries have been going further in terms of green finance — creating green indices or mandating disclosures (participant 2; participant 3).

Although other South Asian regulators have issued regulations related to green finance, Indian regulators are still waiting for the market to be ready before they do so. According to some regulators, regulation in India does not get picked up until the market calls for it (participant 1; participant 2; participant 3). Therefore, interdepartmental and interagency green finance committees have been set up to look into green finance tools that might fit within India’s financial system (participant 1; participant 2; participant 3). Their purpose is to discuss whether the market is ready for regulation on green finance. However, if green bond regulations are introduced, new challenges and questions will come up in formulating them. For example, as most of the interviewees stated: Should new regulation be linked to international best practices or be more India-specific? What sectors should get priority? Should there be caps on the amount of investment in these sectors? How would it change the PSLs for existing sectors?

Moreover, all these factors are also affected by the quality of data that exists in the market, and currently “there is a gap in what is available and reported by market participants in the green sectors” (participant 2). There is also a “capacity building and awareness challenge that exists at all levels” (participant 2), and this can further hamper data collection and reporting. Some regulators mentioned that any changes to the existing regulation also take time to be implemented (participant 2). For instance, “Guidelines on India’s regular bond market came out in 2008 but were only picked up by the market in 2012, therefore, suggesting a time lag in how regulation gets picked up by the green bond market as well” (participant 3).

The overall market outlook suggests that regulators need to consider the nuances of new policies on a relatively new Indian debt market. Apart from a small group of market participants, the majority still considers this market very niche, and having transaction costs such as additional disclosures is unlikely to encourage further participation. With regard to challenges in the market, the risk of “greenwashing” needs to be reduced

(participant 8; participant 9; participant 10). This requires market standards, clear definitions and a cohesive market ecosystem. In having “clearer definitions of green and a standardized market, it will encourage the creation of a project pipeline and other policies that are needed to support these projects” (participant 7). Issuers emphasized, in particular, the need for this market ecosystem to reduce transaction costs during issuances through regulatory and financial incentives that help reduce the extra costs (such as reporting) that come with issuing a green bond (participant 5; participant 6).

Incentives can include “tax-free infrastructure bonds, which were once offered by the Indian government to encourage investment into infrastructure” (participant 5). However, as a policy maker mentioned, “infrastructure bonds are no longer tax-free since the government was losing income on this scheme” (participant 3). Given that most green bonds fund infrastructure, the lack of tax incentives makes it harder to attract domestic investors. A verification ecosystem is also missing in the Indian context and might take a while to materialize. As mentioned by a policy maker, “non-compliance is a big challenge in India and needs to be monitored constantly” (participant 2; participant 3). Since most monitoring challenges in India have been with public sector institutions, such as banks or non-banking financial corporates, it becomes an ongoing issue in the financial sector. This further results in the financial sector becoming stressed due to such non-performing assets (NPAs) and influences other financial markets as well.

Given the “firefighting mode” (participant 1) that the regulator has to be in, it also becomes unlikely to take on the additional work required to encourage the green economy. One of the primary goals of the Indian regulator is to increase basic financial literacy and inclusion across India’s 1.35 billion citizens. Therefore, policies related to climate change or the green economy do not get the same level of precedence as those that “modernize and monitor the economy” (participant 2). Lastly, most participants mentioned that 2018-2019 was an election year and policy creation for the green bond market would take a back seat to more urgent issues, such as NPAs or improving financial governance (participant 2; participant 5; participant 6).

To summarize, greenwashing is a constant challenge across this market, and it does not help that the Indian financial system is burdened

with its governance and monitoring problems. However, creating a market ecosystem via policy or fiscal incentives is a starting point for addressing some of these hurdles. In terms of the business case for supporting green bonds, it fits with the government’s initiatives. As one issuer mentioned, “[the] business case already exists for us to invest in renewable energy projects, but issuing a green bond allows reputational benefits as well” (participant 5), which also proves the benefits for the private sector in supporting this market.

Regulation for the Indian market only came after the market was “already established” (participant 6). However, government participation in the market is not only a “good signal for other potential issuers, but also attracts investor demand,” according to one private sector issuer (participant 5). Furthermore, having a CBI certification also attracted greater “international investor mix,” especially when it came to India’s green bond market (participant 6). However, there is a “lot of work that goes in from the issuer side like operationalizing the reports, which they would like to see a pricing benefit being reflected” (participant 9). The “demand for green bonds is higher than vanilla bonds, as additional types of investors are joining the books” (participant 10). Although there is no pricing benefit for the issuer yet, their green bond can attract a more diverse investor mix, and this further contributes to the business case for the market.

In summary, the business case for this market stands on its stakeholder growth, which is further dependent on the government’s engagement with the market. However, it seems that issuers are already strengthening their issuances through certifications.

---

## Policy Conclusions

The main results suggest that green bond issuances are not only linearly increasing over the years, but also seem to be driven by institutional pressure provided partly by SEBI's regulation as well as the informal advocacy efforts of market stakeholders. These findings are consistent with institutional theory and also contribute to it by introducing the regulatory perspective of the green bond market.

### Institutional Transition Is Driven by High-priority Social Actors

Social actors play a key role in whether or not institutional pressure impacts the growth in the market. For institutional regime shifts, it is important to have them on board with the transition. Social actors that hold a high degree of legitimacy and financial power and span various institutional settings can be described as high-priority social actors. In India, the impact of high-priority social actors on institutional change is contingent on investor confidence and public perception (election issues such as NPAs). Similarly, a high-priority actor in the global market can be the institutional investor, given their mainstream reputation, and shareholder and financial power.

Institutional legitimacy for regulators lies in ensuring widespread participation in decision making as well as tapping into the technical expertise (Dubash 2017). Participation from high-priority social actors, such as important regulators (central banks) or mainstream investors (institutional investors), can create a necessary dialogue that increases the information basis for regulatory decision making (ibid., 244) and ensures greater accountability for legitimizing democratic institutional change (DiMaggio and Powell 1983; Dubash 2017).

### Collaboration among Institutional Actors Leads to Better Outcomes for Field Logics

Given that the green bond market involves a degree of “deinstitutionalization of existing logic elements” (Fuenfschilling and Truffer 2014, 776) in the financial markets, it is important that regulators try to minimize the growing pains for stakeholders in this transition. The contribution of this paper is that collaboration among various regulators can

lead to improved harmonization across policies, which has a positive impact on this market.

A lack of collaboration can adversely impact the effectiveness of a policy or regulation in the market. Although currently there are interdepartmental committees set up by regulators on green finance, new regulators, such as the Pensions Fund Regulatory and Development Authority and the Insurance Regulatory and Development Authority of India, may issue regulations relating to this market at some point. Given that these regulators also have public mandates, the government should take up a policy coordinator role.

### Reduction of Social Actors' Perceived Risk Can Contribute to Institutional Strength

To reduce regulatory risk, it is important that social actors are kept informed about changes to the regulation. Therefore, having a public forum or platform can be an important tool for better communication among various social actors. Although there are some communication initiatives, such as the Indian Green Bond Council, it is important that regulators be accessible to the primary market players. The contribution of this paper is that communicating regulatory changes to social actors can reduce the perceived regulatory risk and thereby strengthen the institutional formation of the market.

### Green Bond Issuances in India Provide Opportunities for Canada

The increase in green bonds in India offers opportunities for foreign investors because Indian bonds are often issued in foreign currencies. This approach is used to attract foreign investors. In contrast, China strives to attract domestic investors. Hence, Canadian investors also might take the opportunity to invest in Indian green bonds to diversify their portfolio. The increase in green bonds also drives green projects. These projects might provide opportunities for Canadian companies that offer green technologies, services or expertise to engage in India. In particular, the green energy sector is financed by green bonds and might provide opportunities for companies that are active in this sector.

---

## Works Cited

- Agarwal, Swati and Tamiksha Singh. 2017. *Unlocking the Green Bond Potential in India*. Mumbai, India: The Energy and Resources Institute.
- Allen, Kate. 2017. "Green bond issuers are poised to charge a premium." *Financial Times*, November 22. [www.ft.com/content/9396fb28-ca2b-11e7-ab18-7a9fb7d6163e](http://www.ft.com/content/9396fb28-ca2b-11e7-ab18-7a9fb7d6163e).
- Banga, Josué. 2019. "The green bond market: A potential source of climate finance for developing countries." *Journal of Sustainable Finance & Investment* 9 (1): 17–32. <https://doi.org/10.1080/20430795.2018.1498617>.
- Broadstock, David C. and Louis T. W. Cheng. 2019. "Time-varying relation between black and green bond price benchmarks: Macroeconomic determinants for the first decade." *Finance Research Letters* 29: 17–22. <https://doi.org/10.1016/j.frl.2019.02.006>.
- Carney, Mark. 2015. "Breaking the Tragedy of the Horizon — climate change and financial stability." Speech given at Lloyd's of London, September 29.
- CBI. 2016. *Bonds and Climate Change: The State of the Market in 2016*. London, UK: CBI.
- . 2017. "Bonds and Climate Change — State of the Market 2017 India Update." London UK: CBI.
- . 2018. "Explaining Green Bonds." [www.climatebonds.net/market/explaining-green-bonds](http://www.climatebonds.net/market/explaining-green-bonds).
- . 2019. "2018 Green Bond Market Summary." January. [www.climatebonds.net/files/files/2018%20green%20bond%20market%20highlights.pdf](http://www.climatebonds.net/files/files/2018%20green%20bond%20market%20highlights.pdf).
- Chiesa, M. and S. Barua. 2019. "The surge of impact borrowing: The magnitude and determinants of green bond supply and its heterogeneity across markets." *Journal of Sustainable Finance & Investment* 9 (2): 138–61. <https://doi.org/10.1080/20430795.2018.1550993>.
- Christophers, Brett. 2018. "Risking value theory in the political economy of finance and nature." *Progress in Human Geography* 42 (3): 330–49. <https://doi.org/10.1177/0309132516679268>.
- Cooper, Andrew F. 2017. "The BRICS' New Development Bank: Shifting from Material Leverage to Innovative Capacity." *Global Policy* 8 (3): 275–84. <https://doi.org/10.1111/1758-5899.12458>.
- DiMaggio, Paul J. and Walter W. Powell. 1983. "The Iron Cage revisited: Institutional isomorphism and collective rationality in organizational fields." *American Sociological Review* 48 (2): 147–60.
- Dubash, Navroz K. 2017. "New Regulatory Institutions in Infrastructure: From Depoliticization to Creative Politics." In *Rethinking Public Institutions in India*, edited by Devesh Kapur, Pratap Bhanu Mehta and Milan Vaishnav. New Delhi, India: Oxford University Press.
- Febi, Wulandari, Dorothea Schäfer, Andreas Stephan and Chen Sun. 2018. "The impact of liquidity risk on the yield spread of green bonds." *Finance Research Letters* 27: 53–59. <https://doi.org/10.1016/j.frl.2018.02.025>.
- Flaherty, Michael, Arkady Gevorkyan, Siavash Radpour and Willi Semmler. 2017. "Financing climate policies through climate bonds – A three stage model and empirics." *Research in International Business and Finance* 42: 468–79. <https://doi.org/10.1016/j.ribaf.2016.06.001>.
- Financial Stability Board. 2015. "Proposal for a disclosure task force on climate-related risks." Press release, November 9. [www.fsb.org/2015/11/disclosure-task-force-on-climate-related-risks-2/](http://www.fsb.org/2015/11/disclosure-task-force-on-climate-related-risks-2/).
- Fuenfschilling, Lea and Bernhard Truffer. 2014. "The structuration of socio-technical regimes— Conceptual foundations from institutional theory." *Research Policy* 43 (4): 772–91. <https://doi.org/10.1016/j.respol.2013.10.010>.
- Henisz, Witold J. and Bennet A. Zelner. 2010. "The Hidden Risks in Emerging Markets." *Harvard Business Review*, April. <https://hbr.org/2010/04/the-hidden-risks-in-emerging-markets>.

- Hill, Joshua. 2018. "India's New 227-Gigawatt Renewable Energy Target Is Ambitious, Challenging, But Possible, Says IEEFA." *CleanTechnica*, June 12. <https://cleantechnica.com/2018/06/12/indias-new-227-gigawatt-renewable-energy-target-is-ambitious-challenging-but-possible-says-ieefa/>.
- Hunt, Chelsie and Olaf Weber. 2019. "Fossil fuel divestment strategies: Financial and carbon related consequences." *Organization & Environment* 32 (1): 41-61. doi:10.1177/1086026618773985.
- IMF. 2018. *World Economic Outlook: Challenges to Steady Growth*. Washington, DC: IMF.
- Joshi, John, Stephen Liberatore and Christopher Flensburg. 2013. "Social Investing and Structured Products: Trends, Challenges, and Opportunities." *The Journal of Structured Finance* 18 (4): 222-26. <https://doi.org/10.3905/jssf.2013.18.4.222>.
- Kumar, Neha, Prashant Vaze and Sean Kidney. 2019. *Moving from Growth to Development: Financing Green Investment in India*. ORF Special Report No. 85. April. Observer Research Foundation. [www.orfonline.org/wp-content/uploads/2019/04/ORF\\_Special\\_Report\\_85\\_Financing\\_Green.pdf](http://www.orfonline.org/wp-content/uploads/2019/04/ORF_Special_Report_85_Financing_Green.pdf).
- Lu, Joshua, Anita Yiu and Aditya Soman. 2016. "India Consumer Close-Up." June 1. Goldman Sachs. [www.goldmansachs.com/insights/pages/macroeconomic-insights-folder/rise-of-the-india-consumer/report.pdf](http://www.goldmansachs.com/insights/pages/macroeconomic-insights-folder/rise-of-the-india-consumer/report.pdf).
- Monasterolo, Irene and Marco Raberto. 2018. "The EIRIN Flow-of-funds Behavioural Model of Green Fiscal Policies and Green Sovereign Bonds." *Ecological Economics* 144: 228-43. <https://doi.org/10.1016/j.ecolecon.2017.07.029>.
- Organisation for Economic Co-operation and Development. 2016. "OECD Long-Term Interest Rates Data for 2016." OECD Data. <https://data.oecd.org/interest/long-term-interest-rates.htm#indicator-chart>.
- Park, Stephen. 2018. "Investors as Regulators: Green Bonds and the Governance Challenges of the Sustainable Finance Revolution." *Stanford Journal of International Law* 54 (1).
- Pham, Linh. 2016. "Is it risky to go green? A volatility analysis of the green bond market." *Journal of Sustainable Finance & Investment* 6 (4): 263-91. <https://doi.org/10.1080/20430795.2016.1237244>.
- RBI. 2015. "Priority Sector Lending-Targets and Classification." RBI Notification, April 23. <https://rbi.org.in/scripts/NotificationUser.aspx?Id=9688>.
- . 2018. "Priority Sector Lending - Targets and Classification." Frequently Asked Questions. December 28. <https://m.rbi.org.in/Scripts/FAQView.aspx?Id=87>.
- Tripathy, Aneil. 2017. "Translating to risk: The legibility of climate change and nature in the green bond market." *Economic Anthropology* 4 (2): 239-50. <https://doi.org/10.1002/sea2.12091>.
- UNEP FI and FICCI. 2016. *Delivering a Sustainable Financial System in India: Final Report*. Mumbai, India: UNEP.
- USAID. 2015. "Issue Paper: Green Bonds in India." Partnership to Advance Clean Energy-Deployment (PACE-D) Technical Assistance Program. February. USAID.
- Weber, Olaf and Blair Feltmate. 2016. *Sustainable Banking and Finance: Managing the Social and Environmental Impact of Financial Institutions*. Toronto, ON: University of Toronto Press.
- Zhang, Le-Yin. 2019. "Green bonds in China and the Sino-British collaboration: More a partnership of learning than commerce." *The British Journal of Politics and International Relations* 21 (1): 207-25. <https://doi.org/10.1177/1369148118807854>.

---

## About CIGI

The Centre for International Governance Innovation (CIGI) is an independent, non-partisan think tank whose peer-reviewed research and trusted analysis influence policy makers to innovate. Our global network of multidisciplinary researchers and strategic partnerships provide policy solutions for the digital era with one goal: to improve people's lives everywhere. Headquartered in Waterloo, Canada, CIGI has received support from the Government of Canada, the Government of Ontario and founder Jim Balsillie.

---

## À propos du CIGI

Le Centre pour l'innovation dans la gouvernance internationale (CIGI) est un groupe de réflexion indépendant et non partisan dont les recherches évaluées par des pairs et les analyses fiables incitent les décideurs à innover. Grâce à son réseau mondial de chercheurs pluridisciplinaires et de partenariats stratégiques, le CIGI offre des solutions politiques adaptées à l'ère numérique dans le seul but d'améliorer la vie des gens du monde entier. Le CIGI, dont le siège se trouve à Waterloo, au Canada, bénéficie du soutien du gouvernement du Canada, du gouvernement de l'Ontario et de son fondateur, Jim Balsillie.

---

## About Gateway House

Gateway House: Indian Council on Global Relations is a foreign policy think tank in Mumbai, India, established to engage India's leading corporations and individuals in debate and scholarship on India's foreign policy and the nation's role in global affairs. Gateway House is independent, non-partisan and membership-based.





---

**Centre for International  
Governance Innovation**

67 Erb Street West  
Waterloo, ON, Canada N2L 6C2  
[www.cigionline.org](http://www.cigionline.org)

 @cigionline

