

INVESTING IN A GREEN FUTURE

INDIA'S INITIATIVES IN CLEAN ENERGY FINANCE

A Five-Year Review

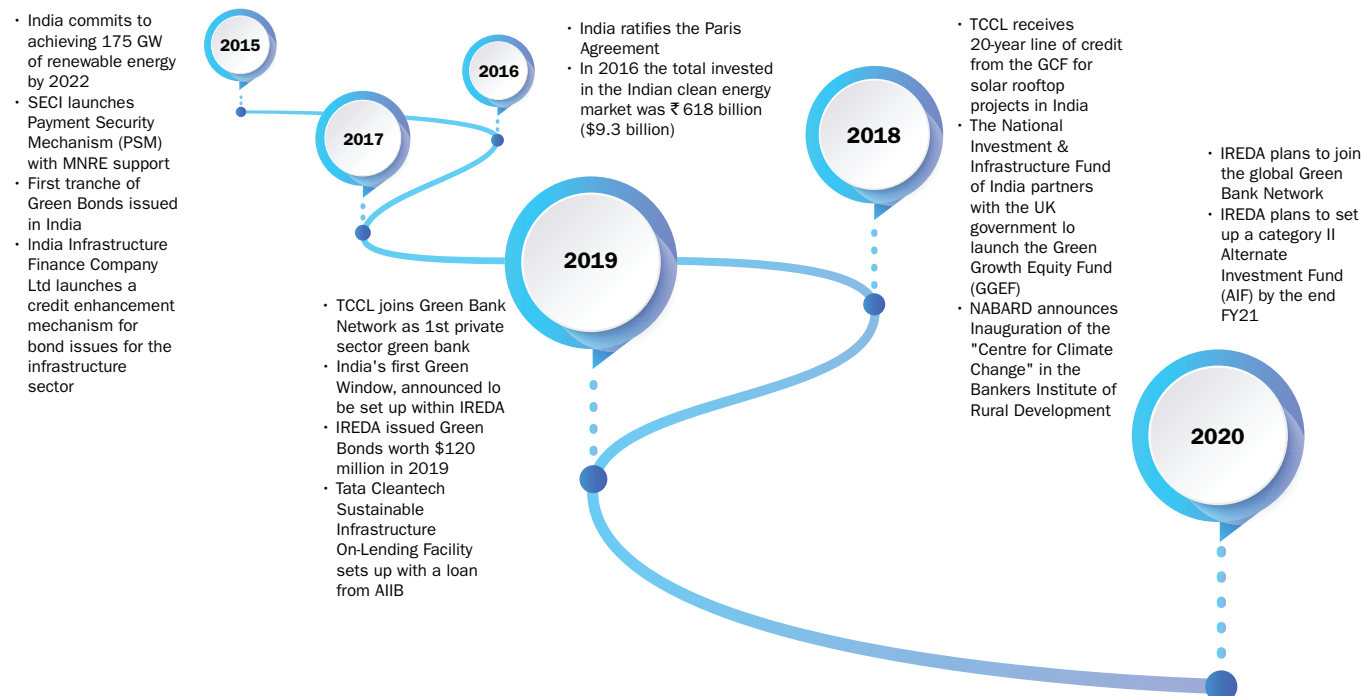
India's installed renewable energy capacity reached 89 gigawatts (GW) in September 2020, which is more than double the installed renewable energy capacity from five years ago.¹ Financial innovation has been essential to this remarkable renewable energy growth. Ratifying the Paris Climate Agreement in 2016, India has set ambitious renewable energy targets of 175 GW by 2022, and later to 450 GW by 2030.² Despite the tremendous progress, with just two more years to 2022, India is only halfway to the 175 GW target. To meet its current climate goals and looking ahead to even stronger action during the next climate talks in 2021, India needs steep growth – and steep investment in clean energy.

Innovative finance has been instrumental to grow investment in India's clean energy markets. Public funding alone is not enough to meet the massive amount of

investment needed to meet India's climate goals; private funding is vital. Financing structures designed to leverage limited public funds to attract greater private investment in clean energy are often termed “catalytic” and the market needs more of them to drive clean energy investment.

To fast-track India's economic recovery, create new jobs, enhance energy security, and fight climate change, increased investment in clean energy is urgently needed. Countries around the world, including major Asian economies, China, Japan, and South Korea, have committed to more ambitious decarbonization goals in advance of the United Nations climate meeting in 2021. Climate finance has been an important issue for India as well. To attract the scale of financing needed, expanding and institutionalizing financing approaches, as summarized in this factsheet, are more important than ever.

Key Clean Energy Initiatives and Milestones in India



While India has made strong progress to expand large scale renewables, at least a doubling of the current clean energy investment is needed to achieve India's renewable energy goals of 450 GW of renewable energy by 2030.³ On average, renewable energy investment over the last five years spanned ₹ 560 to ₹ 700 billion (\$8 to \$10 billion) a year – less than half of ₹ 1.40 to ₹ 2.10 trillion (\$20-\$30 billion) a year investment needed to achieve India's 450 GW goal (Figure 1).

Over the past five years, a nascent clean energy finance ecosystem has emerged in India. Both public and private institutions have developed and tested a series of catalytic financing solutions to address risk perceptions and investment barriers, and to grow India's renewables market. This issue brief highlights financial innovations that have made an initial impact and, when expanded, can accelerate India's green economic recovery and help build a robust clean energy financing ecosystem in the country.

Among financing institutions, the Indian Renewable Energy Development Agency (IREDA) and Tata Cleantech Capital Limited (TCCL) have been at the forefront. Over the past five years, the top financing developments include:

- ➔ IREDA launched several initiatives including, Credit Enhancement Scheme; Credit Guarantee Scheme; Payment Security Mechanism; risk mitigation instruments and bridge loans; and announced an Alternative Investment Fund and the IREDA Green Window, the latter with the cumulative potential to raise over ₹ 210 billion (\$3 billion) in clean energy investment.⁴
- ➔ TCCL expanded the pool of cleantech investors with attractive project structures, such as TCCL subordinate debt structuring; concessional line of credit from the Green Climate Fund (GCF) for solar rooftop

projects; and ₹ 5.3 billion (\$75 million) Tata Cleantech Sustainable Infrastructure On-Lending Facility with the Asian Infrastructure Investment Bank (AIIB), as well as joined the Green Bank Network.

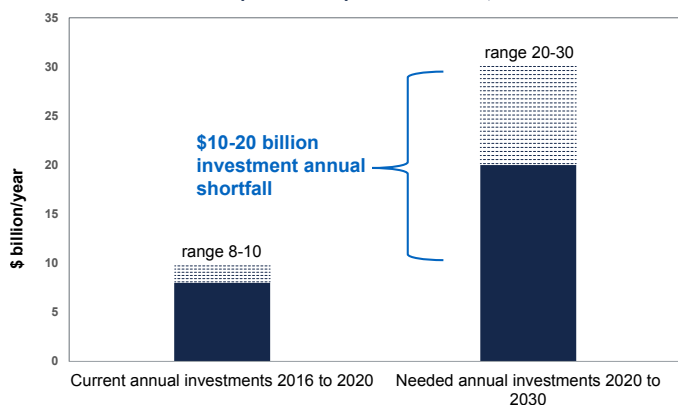
- ➔ Several domestic and international financial institutions deployed a suite of innovative financing mechanisms including: Solar Energy Corporation of India's (SECI) Payment Security Mechanism totaling ₹ 15 billion (\$210 million); India Infrastructure Finance Company Ltd (IIFCL) and Asian Development Bank's Credit Enhancement Mechanism totaling ₹ 8.7 billion (\$128 million); Small Industries Development Bank of India's Partial Risk Sharing Facility for Energy Efficiency totaling ₹ 3 billion (\$43 million); and ₹ 784 billion (\$11.2 billion) in green bonds – making India the second largest market among emerging economies.

The Indian clean energy finance market has evolved over the last five years from limited financial instruments to a range of products that address specific market barriers for clean energy deployment. Many of the innovative solutions focused on large-scale solar and wind projects. Along the way, an ecosystem for clean energy finance is taking shape with public and private leaders and laying the foundation for a greater investment.

To achieve India's 450 GW target by 2030, financing solutions focused on growing the next generation of clean energy and emerging market segments such as energy storage, electric mobility, offshore wind are critical. Underserved markets, such as rooftop solar and energy efficiency, also need investment as part of range of clean energy solutions. While emerging and underserved segments have lagged in accessing viable debt capital and overall investment, overcoming these challenges is essential to India's clean energy and climate goals.⁵



Figure 1: | Annual Renewable Energy Investment 2016-20 versus 2020-2030 (estimated). Source: BNEF, NRDC-CEEW 2018⁶



*Shaded bars represent range.

Based on lessons from the past five years, the Indian market needs tailored financial solutions at scale with a greater focus on emerging and underserved segments to grow clean energy markets. India has a budding financial ecosystem with multiple stakeholders engaged in, and influencing, climate and clean energy finance (Figure 2).

Greater government direction and capacity building efforts signaled by leading entities, such as the Ministry of Environment, Forest and Climate Change (MOEFCC), the Ministry of Power (MOP), the Ministry of New and Renewable Energy (MNRE), the Ministry of Finance (MOF), the Reserve Bank of India (RBI), the State Bank of India (SBI), and the National Bank for Agriculture and Rural Development (NABARD) are needed to build confidence in financing institutions as well as to attract international climate finance.

Dedicated and proven institutional mechanisms such as green banks and green windows and further investment in the emerging market for green bonds, can attract private and international investment while scaling financing solutions. Developing financial structures and institutional mechanisms at scale that alleviate risk and boost investor confidence can also attract greater investment for India's clean energy transition in the next decade.

Figure 2: | India's Current Climate Finance Ecosystem



Clean Energy Investment to Accelerate Recovery from the COVID-19 Recession

To recover from the COVID-19-related economic downturn, green stimulus with policy support to reduce investment barriers and dedicating public funds to clean energy projects is vital to creating jobs, improving air quality for respiratory health, and expanding clean energy growth. With the decline in power demand, financiers need clear policy direction for new investments in power infrastructure.⁷ A downturn in the commercial and industrial sectors, which include the highest rate paying customers, could exacerbate the financial duress of power distribution companies. Emerging clean energy markets, such as electric mobility and energy storage, perceived as higher risk because of untested business models and uncertain growth prospects, need customized financial structures to address specific risk barriers. Strengthening public finance institutions such as IREDA, the National Bank for Agriculture and Rural Development (NABARD) and the Small industrial Development Bank of India (SIDBI) with increased capitalization would be a good first step. Developing financial structures and institutional mechanisms that alleviate risk can help regain investor confidence and attract private investment.

What is Catalytic Finance?

While public funds deployed by the government are important in the short run, for a self-sustaining clean energy ecosystem, private investors have to step up. Catalytic finance is an approach to attract private capital and scale up investments, especially in underserved and emerging clean energy market segments, by leveraging limited public, donor (e.g., multilateral) and impact investment capital. Catalytic finance uses strategies, such as risk mitigation, aggregation of small projects, strategic public-private co-investments, and market development activities, which are effective in demonstrating the business case to private investors and transforming underserved markets.⁸ Examples of catalytic solutions that can be used to grow clean energy finance markets include: credit enhancement, co-investment, warehousing and securitization, and capacity development.

The Green window is an opportunity to spur a sustainable recovery and create a positive multiplier effect on the economy. IREDA, along with partners, are playing a key role to finance critical climate projects, most notably in transforming India's energy mix. The more we de-risk the sector, the more people are willing to invest. Financing tools such as the Green Windows, will play a transformational role in greening the country."

Joint Secretary Sh. Bhanu Prasad Yadav, MNRE

Leading Indian Institutions in Innovative Finance – IREDA and TCCL

The Indian Renewable Energy Development Agency (IREDA) and Tata Cleantech Capital Limited (TCCL) are leading institutions driving India's renewable energy success. IREDA is an example of a public institution and TCCL that of the private sector that are testing innovative financing solutions. Both IREDA and Tata Clean Tech are evolving to play a more catalytic role to grow the emerging and underserved segments of the clean energy market ranging from rooftop solar to electric vehicles.

INDIAN RENEWABLE ENERGY DEVELOPMENT AGENCY (IREDA)

IREDA is a pioneering Indian public financial institution set up to finance energy generation from renewable sources, energy efficiency, and environmental technologies for sustainable development. It has a long-established track record for attracting international public and private investors.

IREDA has financed more than 2,700 renewable energy projects in India with cumulative loan disbursements totaling ₹ 570 billion (\$8 billion) and has supported green power capacity addition of 17,259 MW.⁹ During the Financial Year (FY) 2019-20, IREDA's loan book was ₹ 88 billion (\$1.2 billion). Projects sanctioned by IREDA by way of sole, co-financing and consortium financing in financial year 2020 are expected to result in an additional 950 MW in renewable energy capacity.¹⁰

Over the last five years, IREDA has developed several innovative financial products to grow many segments of the clean energy market, expanding its traditional approach focused on large-scale solar and wind projects.

IREDA's strategy has been evolving to include innovative and catalytic instruments in its product offerings and testing new clean energy markets. While emerging and underserved markets, such as off-grid, energy efficiency and distributed renewables are still a very small proportion of their lending at less than 5%, these segments offer a tremendous opportunity.

To deploy clean energy, key IREDA innovative financing initiatives include the IREDA Green Window, Credit Enhancement Scheme, Credit Guarantee Scheme, Payment Security Mechanism, bridge loans, Alternate Investment Fund, and Green Bonds. Each is discussed below.

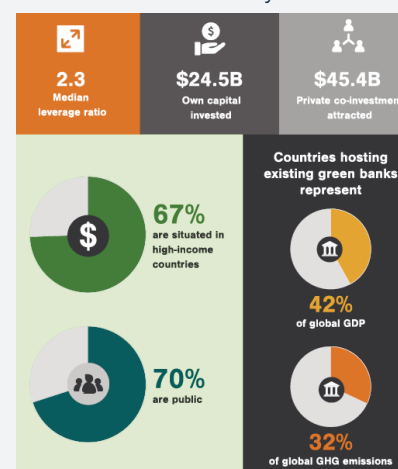
IREDA Green Window: Announced during the 2019 climate talks in Madrid, the IREDA Green Window is designed as a new dedicated facility within IREDA with the mandate and risk capital to use limited government funds to mobilize private capital and achieve climate and clean energy goals, much like a green bank.¹¹ Through its Green Window, IREDA is working to expand the renewable market, diversify its business portfolio, and focus on underserved markets. The IREDA Green Window will help increase focus on underserved markets by tailoring products and solutions for specific barriers and increasing financing to grow these market segments. It has the potential to raise ₹ 224 billion (\$3.2 billion) in investment over a ten-year period.¹² Working with NRDC and CEEW, IREDA drafted an operational plan for the Green Window. As a next step, IREDA is working on raising capital for the Green Window and shortlisting market segments in partnership with NRDC and CEEW. In particular, climate funds, such as the Green Climate Fund, are interested in providing concessional capital through the IREDA Green Window to reach underserved clean energy markets in India. For more details on the Green Window framework, see *Growing Clean Energy Markets in India with Green Windows* (2020).¹³

What Are Green Banks?

The green window concept, developed by MNRE and IREDA, is based on the global green bank model. A green window is a specialized unit within an existing institution. A green bank is a specialized financing institution, or a separately managed facility, that acts as the focal point for scaling up domestic investment in climate solutions.¹⁴ A green bank attracts investment to projects that help climate and sustainability goals by creating financial products to address market barriers. Importantly, green banks work alongside policymakers to create the market conditions that will scale up climate solutions and enable multiple co-benefits including job creation, pollution reduction, energy access, and others. These institutions have a public-purpose mandate to use their limited capital efficiently to mobilize multiples of additional investment.

There are successful green banks in South Africa, Malaysia, United Kingdom, Australia, Japan, and other countries, as well as several states - including Connecticut and New York - in the United States¹⁵. IREDA is planning to join the global Green Bank Network, a membership organization formed to foster collaboration and knowledge exchange among green banks. TCCL joined the network in 2019. Green Banks around the world have raised ₹ 3.2 trillion (\$45.4 billion) for low-carbon investment cumulatively by 2020 (Figure 3).¹⁶ The Green Climate Fund's interest in investing in green banks and green windows appears to be growing. In addition to the South Africa green bank, the Green Climate Fund approved funding for the Mongolian Green Finance Corporation in November 2020.¹⁷

Figure 3: | Green Banks Global Impact,
Source: Whitney et al 2020¹⁸





Credit Enhancement Scheme: To enhance the capital flow to the clean energy sector, IREDA developed the “Credit Enhancement Guarantee Scheme” to support bond issuance for renewable energy projects. This scheme enhances the credit rating of bonds, which helps project developers to attract lower cost and longer tenure of funding that helps improve project economics. Credit enhancement helps raise credit rating of bonds to AA and above and open up the market for institutional investors like insurance and pensions funds. The scheme was launched in 2016 and has supported bonds issued by ReNew Wind Energy ₹ 4.5 billion (\$63.6 million) and Hindustan Power ₹ 3.8 billion (\$53.6 million).

Credit Guarantee Scheme: With COVID-19 induced recession, renewable energy developers are finding it difficult to provide bank guarantees while bidding for government tenders to set up new capacity. To address this issue, MNRE issued a notification in September 2020 that allowed IREDA and the Power Finance Corporation and Rural Electrification Corporation to provide Letters of Undertaking (LoUs) for developers. Project developers can now submit these LoUs instead of bank guarantees to bid for the Solar Energy Corporation of India (SECI) and National Thermal Power Corporation renewable energy tenders.¹⁹

Payment Security Mechanism: In June 2019, IREDA provided a payment guarantee against a Payment Security Mechanism for ₹ 1.4 billion (\$20 million) to the Rewa Ultra Mega Solar Limited, which is a joint venture of SECI and Madhya Pradesh Urja Vikas Nigam Limited (MPUVNL). The Rewa project is one of the world’s largest with 750 MW of capacity and started operations in June 2018.²⁰ The Delhi metro buys a part of the power generated from this project and the rest is procured by MPUVNL, the state distribution company.

Innovative Funding: Other than project loans, which account for the bulk of IREDA’s portfolio, there are some catalytic products such as “take out financing” (sanctions have grown forty five times since 2017), “securitization of receivables” and “bridge loans against pending energy bills”

(sanctions increased four times since 2017). Recently in September 2020, IREDA developed a “factoring scheme,” approved by the Reserve Bank of India to provide working capital and liquidity for renewable energy developers, manufacturers, and suppliers. This scheme aims to ease the impact of delayed payments from government agencies, with IREDA purchasing the account receivables and providing immediate liquidity to renewable energy players.²¹ The structure of this product is based on IREDA’s experience of payment delays but no significant defaults by certain Government agencies such as DISCOMS.

Alternate Investment Fund: IREDA plans to set up an Alternate Investment Fund (Category II AIF) by the end of FY 2021.²² The fund will invest in debt securities (issued by developers) backed by cashflows of operational projects. This will help developers who may not be able to issue bonds themselves. The capital raised can be used to pre-pay IREDA loans. Other than freeing up capital for IREDA to lend afresh, thus promoting capital recycling, the AIF effectively helps IREDA diversify from loan financing to capital markets.

Green Bonds: In 2017, IREDA became the first Indian financial institution to raise certified Green Masala Bonds for ₹ 18.9 billion (\$270 million) from the international market with listings on international exchanges in Singapore and London.²³ This has helped grow the market with several other issuers such as YES Bank and Axis Bank also tapping overseas markets for borrowing capital denominated in Indian currency. By FY 2019-20 issuance of green masala bonds accounted for 9% of IREDA’s total borrowing. IREDA also issued foreign currency green bonds worth ₹ 8.4 billion (\$120 million) in January 2019.

Looking ahead, IREDA can build on its experience in last five years in developing the IREDA Green Window and six other mechanisms. With MNRE support, IREDA can scale up its efforts on catalytic finance. For example, the Green Window, once operational, can be the financial innovation hub to design targeted market solutions and pilot new structures such as the Alternative Investment Fund. A key next step would be to capitalize the Green

“As India rebuilds the economy recovering from the COVID-19 pandemic, IREDA’s mission is fully aligned with the goal of Government of India through MNRE to promote investment in renewable energy for sustainable development. We are working on various fronts & partnering with all stakeholders for its effective implementation.”

Mr. P. K. Das, Chairman and Managing Director, IREDA

“The role of public finance institutions such as IREDA is to catalyze the development of new and promising sectors of the economy. IREDA will keep inventing spaces so that the market can grow in a way that can be scalable and replicable. IREDA’s entire role is of “Green Windows” and we will continue evolving in this space in unserved markets.”

Mr. Chintan Shah, Director Technical, IREDA

“The IREDA Green Window is conceptually a good fit (for GCF) based on factors like country ownership and potential climate benefits and has a number of other attractions in terms of our mandate.”

Mr. Tony Clamp, Director Private Sector Facility, Green Climate Fund.

Window with seed funding from the government of India and other providers of low-cost climate finance such as the Green Climate Fund. Preliminary analysis indicates that a ₹ 3.5 billion (\$50 million) commitment for seed funding in the IREDA Green Window, in the form of government or public financial institutional equity, could mobilize up to ₹ 224 billion (\$3.2 billion) in total investments over a 10-year period, with redeployment of capital, and help grow the clean energy finance ecosystem in India.²⁴ Growing internal capacity within IREDA could make it more impactful and draw in international investment.

Aligned with its role as a pioneer, and its Green Window mission, IREDA could focus on supporting emerging clean energy segments such as energy storage, off-shore wind, electric mobility, and distributed renewables. In addition to lending for large-scale renewable energy projects, IREDA could make a truly transformative impact by leveraging the Green Window mechanism to expand private investment for low-carbon, climate resilient infrastructure in India.

TATA CLEANTECH CAPITAL LIMITED (TCCL)

Tata Cleantech Capital Limited (TCCL) is India’s first private sector financial institution focused solely on green finance. Since its foundation in 2011, TCCL has helped finance new developers and brought new financial investors into India’s quickly evolving cleantech



landscape. Since inception, TCCL has financed renewable capacity of more than 7.5 GW with over 200 renewable energy projects. TCCL has created capacity for technical, commercial, legal, and climate assessment in their investment decisions and, as a result, are often able to underwrite projects that other lenders find challenging.

TCCL has been instrumental in expanding the pool of cleantech investors in India, in part by co-financing with other lenders. It structures the transaction and then invites other lenders to participate in the senior debt, generally taking 100% senior debt only for small projects.²⁵ In 2018, TCCL received a ₹ 7 billion (\$100 million) 20-year line of credit from the Green Climate Fund (GCF) for solar rooftop projects in India. Rooftop solar market in India is still comparatively small and disaggregated. The TCCL line has been slow to deploy although they offer low-cost long tenure loans for the rooftop solar sector. In the commercial rooftop solar space credit worthiness of small and medium enterprises has been challenging and in residential segment there are few proven business models. In 2019, TCCL joined the Green Bank Network with the mission to identify the right clean energy projects, build a financing ecosystem around them, and bring projects to the mainstream so that other investors can come in.²⁶

In 2019, the Tata Cleantech Sustainable Infrastructure On-Lending Facility was set up with a loan of ₹ 5.3 billion (\$75 million) from Asian Infrastructure Investment Bank (AIIB) to increase private capital investment in renewable energy, power transmission, and water infrastructure.²⁷ In the same year, TCCL raised ₹ 11.9 billion (\$170 million) through a green bond with the Netherlands-based development bank, FMO (*Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V.*)²⁸ Like IREDA, TCCL also plans to set up an alternative investment fund to finance renewable energy projects in the country.

In the spirit of collaboration and to grow the clean energy markets in India, IREDA and TCCL have entered into a strategic partnership agreement to co-finance clean energy

projects.²⁹ Such institutional co-operation can help the market grow quicker. IREDA and TCCL have used their market expertise to co-finance projects that would otherwise not have achieved financial closure. This has created confidence in the market and drawn in other commercial banks in India that are not traditional lenders to the sector, in loan syndication transactions or loan buy-outs. Sharing of market information, co-financing, and jointly underwriting larger transactions to incentivize private investments and other market development activities are some of the ways in which collaboration by pioneering clean energy financiers can help grow the market.

Catalytic Finance Instruments and Solutions

In addition to IREDA and TCCL, several other prominent financial institutions in India have piloted innovative financial instruments to support clean energy market in its early years. Most often, a specific instrument such as a credit guarantee or payment security mechanism is designed to mitigate risk to lenders. With funding from Indian and global development banks, these instruments have had mixed initial success, which demonstrates a need for more coordinated, specific market focused interventions.

Solar Energy Payment Security Mechanism: In 2015, with MNRE support, SECI established a payment security mechanism (PSM) with a ₹ 15 billion (\$210 million) fund to ensure payment to utility-scale developers under power purchase agreements (PPAs) with distribution companies to cover off-taker payment delays.³⁰ The PSM increased the creditworthiness of the developers to their lenders by providing security of repayment covering three months of revenue. SECI's PSM demonstrated that payment security mechanisms can be effective to reduce risk premiums and lowering lending rates for renewable energy projects.³¹ SECI also entered into a tripartite agreement with the government of India, state governments, and the Reserve Bank of India (RBI), which further bolstered its credibility as a renewable energy off-taker by providing a greater surety or repayment for lenders. As a part of the tripartite agreement, any state defaulting on dues owed to power distribution companies risks a deduction from its central fund transfers.³² The PSM has been successfully utilized with an outstanding in the second quarter of FY 2020-21 of ₹ 10.75 billion (\$154 million).³³

“The demand for green finance is enormous, expected to be over \$1.5 trillion (₹ 105 trillion) for building sustainable assets including clean energy and clean transportation. We will further explore how to synergize with the IREDA Green Window.”

Mr. Manish Chourasia, Managing Director Tata Cleantech Capital Ltd

Credit Enhancement for Infrastructure Bond Issuances:

To increase the investor base for green projects in 2015, the India Infrastructure Finance Company Ltd (IIFCL) launched a credit enhancement mechanism for bonds issued for the infrastructure sector. The Asian Development Bank and IIFCL financed the credit guarantee via an ₹ 8.7 billion (\$128 million) facility. Based on the partial credit guarantee by IIFCL, Renew Wind Energy was able to enhance its credit to AA level and get preferential terms for its ₹ 4.8 billion (\$70 million) issuance in 2015.³⁴ Since then, ReNew power has built a good track record with creditors and has grown to become one of the largest renewable energy companies in the world.

Partial Risk Sharing Facility for Energy Efficiency:

Small Industries Development Bank of India (SIDBI) has set up a risk sharing facility to trigger a sustainable market transformation by demonstrating successful implementation of energy efficiency projects.³⁵ This will also help attract more investments into such projects. The facility has a total funding of ₹ 3 billion (\$43 million) of which “Partial Risk Sharing Facility” (PRSF) component is ₹ 2.6 billion (\$37 million). PRSF is used to provide partial credit guarantees to cover a share of default risk that a financial institution may face while extending loans to eligible projects implemented through energy service companies (ESCOs). The balance ₹ 42 million (\$6 million) is extended by way of technical assistance. The facility aims to raise over \$127 million of commercial capital and demonstrate successful implementation of ESCO projects. It is managed by SIDBI and Energy Efficiency Services Limited (EESL), funded from a Global Environment Facility (GEF) contribution, and backstopped by a Clean Technology Fund (CTF) Guarantee. The facility has supported more than 1,100 walk-through energy audits and over 600 detailed energy audits. Energy efficiency measures have been implemented by more than 510 industrial units.

The Lab

Launched in November 2015, the Lab in India is an extension of the Global Lab hosted by Climate Policy Initiative, operating as a public-private initiative that identifies, develops, and accelerates innovative solutions to finance infrastructure for renewable energy and green growth. By addressing investors' needs, it seeks to unlock private investment for clean growth in India. It has supported a dozen ideas and projects in areas such as rooftop solar, electric mobility and forestry conservation by helping them get investment ready and facilitating investor pitch.

The Global Lab brings together over 60 members that include development sector institutions, impact funds and philanthropic foundations. These members have invested ₹ 25.9 billion (\$370 million) which has helped leverage ₹ 1.19 billion (\$ 1.7 billion) in private investments in 41 projects.³⁶ In India, the Lab has developed solutions for market barriers including a residential rooftop solar accelerator, financing for electric three wheelers, and a facility for hedging foreign exchange risk for international investors.

Green Bonds

Green bonds are financial instruments designed to raise finance through capital markets in India or overseas for clean energy and low carbon projects. Green bonds provide a viable fund-raising alternative in India with a growing issuer and investor base. The public sector led the way for green bonds in India with state-owned financial institutions starting in 2015. Key public green bond issuers included EXIM Bank, IDBI, National Thermal Power Corporation (NTPC), PNB Housing Finance, and the Indian Railways Financial Corporation (IRFC). Private sector issuance started soon after with Yes Bank and CLP Wind Farms India.³⁷

Indian green bond issuances are predominantly in U.S. Dollars (USD). As foreign exchange hedging adds to costs and complexity for domestic issuers, Rupee denominated bonds termed “Masala Bonds” are sometimes preferred. While subscribing to Masala Bonds, the investor takes the risk on exchange rate. In case of USD denominated bonds, the exchange risk is borne by the issuers. IFC initiated the use of Masala Bonds in November 2014, raising ₹ 10.8 billion (\$154 million) and issued the first Green Masala Bonds for ₹ 3.4 billion (\$49 million) in August 2015.

In 2017, the Securities and Exchange Board of India (SEBI) issued definitions and disclosure requirements for “Green Debt Securities” in India. The disclosure requirements are largely based on the internationally accepted “Green Bond Principles 2015” that were co-developed by SEBI and the Climate Bonds Initiative.³⁸ The SEBI definition helped clarify qualification requirements for Indian issuers, intermediaries, and investors

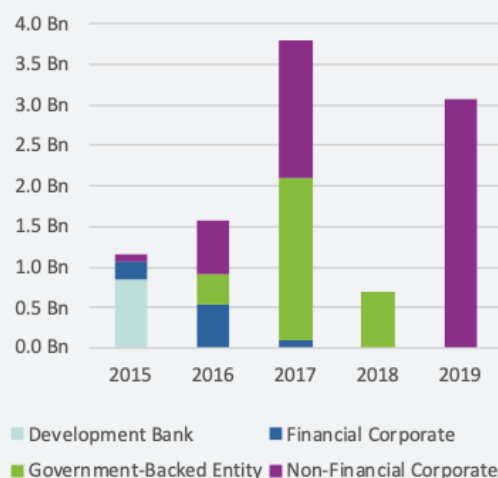
and thus helped further grow the market. In 2017, IREDA became the first Indian financial institution to raise certified Green Masala Bonds ₹ 18.9 billion (\$270 million) from the international market with listings on international exchanges in Singapore and London.³⁹

Between 2015 and 2020, India’s cumulative green bond issuances have grown to ₹ 784 billion (\$11.2 billion) (Figure 4).⁴⁰ While there has been a slowdown of issuance from India in 2020 due to the economic recession, there have also been key issuances, such as the State Bank of India’s issuance in March 2020 for ₹ 7 billion (\$100 million), which took its total issuance to date to over ₹ 49 billion (\$700 million).

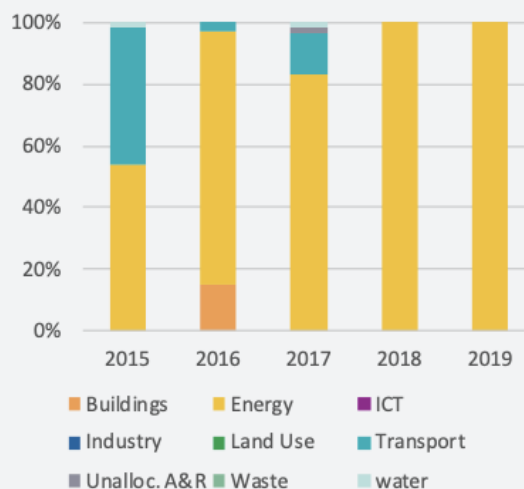
India is now the second largest green bond issuer among emerging economies. At the same time, there is still huge potential for green bonds in India. For instance, issuance in China is over five times the size of the Indian market.⁴¹ One of the reasons for India’s comparatively slower growth has been the issuers’ expectations that the cost of capital would decrease. This has not been met largely because of the lack of a significant “green premium” and the high cost of hedging foreign exchange risks. Stakeholders, including the financial regulators, are working to bring down the cost of funds for issuers as well as to broaden the issuer base further to include more sub-national issuers such as state governments and municipalities. Regulatory action to mainstream climate risk in investment decisions can further increase the demand for green bonds.

Figure 4: | Green bond issuance in India 2015-19 (in \$ billion).⁴²

Green bond issuance by issuer type



Green bond issuance by use of proceeds



Source: Climate Bonds Initiative 2019

Endnotes

- 1 MNRE, "Physical Progress (Achievements)," 2020, <http://164.100.94.214/physical-progress-achievements> (accessed November 15, 2020).
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- 5 For instance, NRDC-CEEW-SCJG analysis shows that grid-connected rooftop solar with just a fraction of the capacity created more jobs cumulatively than utility-scale solar. Kuldeep, Neeraj, Madhura Joshi, Akanksha Tyagi, Tanmay Bishnoi, Sameer Kwatra, Anjali Jaiswal, and Praveen Saxena. 2019. *Powering Jobs Growth with Green Energy*. New Delhi: CEEW; New York: NRDC; and New Delhi: Skill Council for Green Jobs.
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Authors & Researchers: Poonam Sandhu and Sameer Kwatra, NRDC Team; Kanika Chawla and Arjun Dutt, CEEW-CEF Team

Project Advisors: Anjali Jaiswal and Doug Sims, NRDC; Arunabha Ghosh, CEEW

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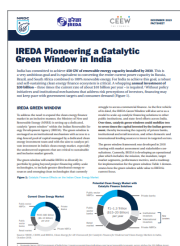
Since 2011, NRDC and CEEW have collaborated as knowledge partners with key actors in the clean energy ecosystem, including SECI, MNRE, IREDA and TCCL, with the aim to grow the market for clean energy financing in India. We leverage international expertise and networks to introduce new clean energy concepts and develop locally relevant effective solutions for clean energy finance.

Highlighted Resources



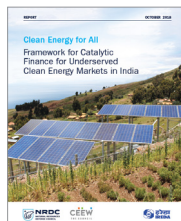
Growing Clean Energy Markets in India With Green Windows

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IREDA Pioneering a Catalytic Green Window in India

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Clean Energy for All: Framework for Catalytic Finance for Underserved Clean Energy markets in India

<https://www.nrdc.org/sites/default/files/catalytic-finance-underserved-clean-energy-markets-india-report-201810.pdf>



Accelerating Clean Energy in India: More Financing And More Jobs

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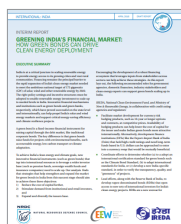
Setting Up A Green Bank A Solution to India's Clean Energy Finance Barriers

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Greening India's Financial Market: Opportunities for a Green Bank in India

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