

5. Conclusion

As India scales up its RE capacity to its 2030 target of installing 450 GW of RE, Indian institutional lenders are nearing their sectoral lending limits for the power sector. Developers must seek out new funding sources to maintain the required pace of capacity addition. Green bonds in international markets present an opportunity to enhance developers' access to capital. Indian developers have issued international green bonds valued at USD 11.2 billion to refinance their RE portfolios. We found that these bonds have been significantly oversubscribed, particularly by Asian buyers.

International markets have been largely agnostic to the nature of the portfolio refinanced through green bonds.

Bond spreads have not shown material trends against the key characteristics of the refinanced portfolios, which are listed below –

- Projects with state utilities as offtakers dominate RE portfolios, while the renewable technologies covered are evenly split between solar and wind with a small share of hydro
- Most bond portfolios have short to moderate operational histories, typically under four years
- Average tariffs for refinanced portfolios have hovered around INR 5/kWh with developers balancing out high-tariff and low-tariff projects

While the poor financial health of state utilities has been highlighted as a risk by rating agencies, it has not dampened interest in Indian green bonds. This is because markets typically secure repayment through financial covenants that strictly monitor debt service coverage and Capex reserves.

The route has only been leveraged by eight Indian RE developers to date. However, growing calls for increased climate finance from developed nations suggest that the pool of funds will expand in the coming years. We believe that green bonds have the

potential to play a significant role in India's energy transition. Therefore, all stakeholders, including developers, consumers, and policymakers, must view the international market green bond route as complementary to domestic institutional debt. We have outlined the potential for various stakeholders below.

- **RE developers:** Several utility-scale RE developers in India are yet to raise funds through international bonds. They can access a large pool of funds with lenient covenants through this route while favourable hedging agreements can deliver pricing advantages. Additionally, of the total 21 green bonds raised by RE developers, 5 refinanced restricted groups of sizes near or below 500 MW. This indicates that international markets are open to smaller developers without GW scale capacities so long as they exhibit a stable credit profile.
- **Industries and manufacturers:** Upstream industries in the RE sector such as module manufacturers can leverage their inherently 'green' businesses to raise green bonds and diversify capital. Further, many players in energy-intensive industries such as oil and gas, metals and mining, and cement have set net-zero or RE targets. These companies may also obtain favourable pricing due to their strong credit profiles. Such industries can accelerate their energy transition plans by accessing dedicated international finance through climate-aligned bonds that are either 'green' or 'sustainability linked'.²⁰
- **Policymakers:** While developer activity in international bond markets has ramped up, the domestic bond market has seen little participation from RE developers since 2016. Vector Green Energy's 2021 green bond²¹ in the domestic market is a welcome development; however, it remains to be seen whether this indicates a change in the trend. Policymakers must focus on revitalising the domestic bond market by learning from international green bonds, not just those issued by Indian RE developers but also by sovereign institutions such as those in Europe. To achieve India's RE targets, we must fully tap into the potential of all sources of debt funding.

20. UltraTech Cement issued India's first sustainability-linked bond in 2021, raising USD 400 million at a 2.8 per cent coupon rate.

21. Vector Green Energy announced India's first AAA-rated domestic green bond by an RE developer, raising INR 1,237 crore (USD 166 million at conversion rate of INR 74.33 per USD 1.00) at 6.49 per cent interest in July 2021.

- **South and South-East Asian developers:** RE developers in nations with similar sovereign credit profiles and ambitious RE targets as India, such as Malaysia, Indonesia, and the Philippines, can also ramp up their activity in international bond markets to fund their energy transitions. State and private entities from these nations have issued green bonds in international markets in the past and are well placed to benefit from the market's advantages.

International bond markets have been strong supporters of the Indian energy transition. The path forward must continue this year's trend with not just developers, but industries and policymakers also seriously evaluating the market to unlock a much-needed alternate source of debt.

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Annexures

Annexure I

Table 1 List of green bonds issued by Indian developers in international bond markets

S No.	Developer	Bond details (issue month)	Listing source
1	Greenko	USD 550 million at 8.00% due 2019 (Aug-14)	SGX
2	NTPC	INR 20,000 million at 7.38% due 2021 (Aug-16)	LSEG, SGX
3	Greenko	USD 500 million at 4.88% due 2023 (Aug-16)	SGX
4	ReNew Power	USD 475 million at 6.00% due 2022 (Feb-17)	SGX
5	Greenko	USD 1,000 million USD 350 million at 4.88% due 2022 (Jul-17) USD 650 million at 5.25% due 2024 (Jul-17)	SGX
6	Azure Power	USD 500 million at 5.50% due 2022 (Jul-17)	SGX
7	ReNew Power	USD 525 million USD 375 million at 6.67% due 2024 (Mar-19) USD 60 million at 6.67% due 2024 (Mar-19) USD 90 million at 6.67% due 2024 (Sep-19)	SGX
8	Adani Green Energy	USD 500 million at 6.25% due 2024 (May-19)	INX, SGX
9	Greenko	USD 1,035 million USD 500 million at 5.55% due 2025 (Jul-19) USD 450 million at 5.95% due 2026 (Jul-19) USD 85 million at 5.95% due 2026 (Sep-19)	SGX
10	Greenko	USD 435 million USD 350 million at 6.25% due 2023 (Aug-19) USD 85 million at 6.25% due 2023 (Aug-19)	SGX
11	ReNew Power	USD 300 million at 6.45% due 2022 (Sep-19)	SGX
12	Azure Power	USD 350.101 million at 5.65% due 2024 (Sep-19)	SGX
13	Adani Green Energy	USD 362.5 million at 4.63% due 2039 (Oct-19)	SGX
14	ReNew Power	USD 450 million at 5.88% due 2027 (Jan-20)	SGX
15	ReNew Power	USD 325 million at 5.38% due 2024 (Oct-20)	SGX
16	Continuum Green Energy	USD 561 million at 4.50% due 2027 (Feb-21)	SGX
17	ReNew Power	USD 460 million at 4.00% due 2027 (Feb-21)	SGX
18	Hero Future Energies	USD 363 million at 4.25% due 2027 (Mar-21)	SGX
19	Greenko	USD 940 million at 3.85% due 2026 (Mar-21)	SGX
20	ReNew Power	USD 585 million at 4.50% due 2028 (Apr-21)	INX
21	JSW Hydro	USD 707 million at 4.50% due 2031 (May-21)	SGX

Source: CEEW-CEF compilation

Table 2 List of green bonds issued by Indian lenders and non-financial, non-power corporates in international bond markets

S No.	Developer	Bond details (issue month)	Listing source
1	Exim Bank	USD 500 million at 2.75% due 2020	Bank website
2	IDBI Bank	USD 350 million at 4.25% due 2020	Bank website
3	Axis Bank	USD 500 million at 2.88% due 2021	SGX
4	Jain Irrigation	USD 200 million at 7.125% due 2022	SGX
5	REC	USD 450 million at 3.97% due 2027	LSEG
6	Indian Renewable Energy Development Agency	INR 19,500 million at 7.13% due 2022	SGX
7	Power Finance Corporation	USD 400 million at 3.75% due 2027	LSEG
8	Indian Railway Finance Corporation	USD 500 million at 3.84% due 2027	INX
9	State Bank of India	USD 650 million at 4.50% due 2023	INX
10	Axis Bank	USD 40 million at 3.82% due 2024	SGX
11	State Bank of India	USD 100 million due 2022	SGX
12	Delhi International Airport	USD 450 million at 6.25% due 2025	SGX

Source: CEEW-CEF compilation

Annexure II

We obtained the geographic allocation of Indian RE developer-issued green bonds through a compilation of – (i) media reports from Business Standard, Bloomberg Quint, The Hindu Business Line, The

Economic Times, The Times of India, and The Asset; (ii) an official press release by NTPC; and (iii) direct inputs from ReNew Power and Azure Power.



International bond markets have been a critical source of debt capital; developers and other stakeholders must ramp up bond activity to unlock new sources of funds.





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