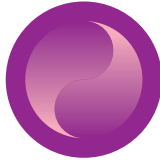


4. Social and Sustainability

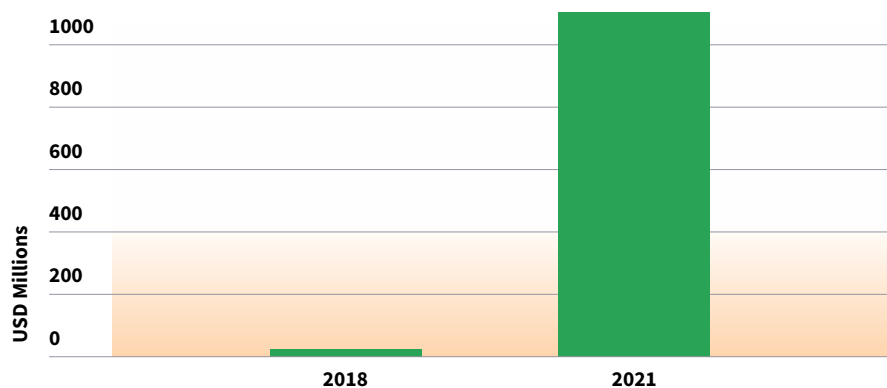
S&S bonds are the more recent entrants into the labelled debt market in India. Indiabulls Housing Finance Ltd kicked off this segment with a USD48mn social bond in 2018, followed by another from Shriram Transport Finance Company (USD500m) and the maiden sustainability bond from Axis Bank Ltd/Gift City (USD600m) in 2021. The Indian S&S market now stands at USD1.1bn comprising of the above 3 bonds. The interest in these themes is quickly increasing, with 2021 also being the most successful year yet for this theme.



The issuance in terms of both volume and number of deals is still low, but steadily growing. All but one deal so far has followed externally reviewed frameworks, which is a welcome sign. Two of the three issues are benchmark-sized, which is another positive indication for further growth among S&S bonds.

Social and Sustainability Scorecard		
S&S	2021	Overall/Cumulative
Amount issued (USD)	USD1.1bn	USD1.1bn
Number of deals	2	3
Largest issuer	Axis Bank Ltd/Gift City (USD600m)	
Average deal size (USD)	USD550mn	USD383mn

Indian S&S debt is nascent



Source: Climate Bonds Initiative

5. Sustainability-linked bonds

SLBs are forward-looking, performance-based debt instruments that are issued with links to Sustainability Performance Targets (SPTs) and associated Key Performance Indicators (KPIs) at the entity level. SLBs can be a useful tool for issuers on a low-carbon transition trajectory as they finance whole entities in transition and help to build experience and credibility on target setting, as long as the SPTs are credible; calibrated ambitiously in line with sector-based pathways; and provide meaningful financial reward/penalty. *To enhance the comparability and integrity of the market*, Climate Bonds is defining sector-based Transition Finance Standards suitable for transition UoP bonds, SLBs, and transitioning entities building on the *Transition Finance for Transforming Companies* whitepaper. A finalised version of the recommendations will be published later in 2022.²



The birth of Indian sustainability-linked bonds

Indian issuers are beginning to explore SLBs as a means of raising capital. Three such bonds had been issued to the end of 2021, totalling USD1.2bn.

The largest of the 2021 bonds was a USD500m deal from Mumbai-based **JSW Steel**. The company set a KPI to reduce its crude steel CO₂ emission intensity (Scopes 1 and 2) by 23% to 1.95tCO₂ per tonne of production by March 2030 compared to a 2020 baseline, which if not met will trigger a 37.5bp step-up for the residual life of the bond.

A similar GHG-linked issuance came from **UltraTech Cement** in February. Its USD400m bond is linked to a KPI of a 22.2% reduction by 2030 vs. a 2017 baseline in the GHG intensity of its production from 716kg to 557kgCO₂ per tonne of cementitious material produced.³ UltraTech's deal has a larger 75bps step-up for the last two coupon payments in case the company misses its target.⁴

KPIs can also be based on other climate-material targets, such as the percentage of renewable energy of total installed generation capacity.

Adani Electricity Mumbai's USD300m bond provides an example: its deal aims to achieve a 60% share of renewable energy sources by 2027. The frameworks of the three bonds mentioned above all obtained SPOs.

The large deal sizes point to the perceived flexible nature of the SLB format. The bonds are not bound by UoP, hence can suit companies without specific green projects, assets, or expenditures wishing to finance their sustainability journey, including those operating in traditional hard- and expensive-to-abate industries. The ambition and impact of SLBs require further study, but an extensive, externally reviewed issuance system is encouraging to see in the Indian market.

6. Market commentary: avenues for growth

Renewable energy

Utility-scale renewable energy assets in India are mature and attract competitively priced finance



The utility-scale renewable energy sector is the main reason for the success of green finance in India, as evidenced in the rapid scale-up of grid-connected renewable energy assets.⁵ The market has a solid domestic project financing ecosystem, initially supported by international financing from Development Finance Institutions (DFIs) like **The World Bank**, **International Finance Corporation (IFC)**, **Asian Development Bank** and Germany's **KfW**. Currently, the domestic banking system funds most of the projects.

Accessible finance leads to a constant lowering of the costs of winning bids at utility-scale renewable energy auctions in India. Refinancing loans for these projects has resulted in green bond issuance from developers and financial institutions. The Reserve Bank of India (RBI) has categorised the renewable energy sector under priority sector lending for loans up to a limit of INR30 crore. While this is certainly a step in the right direction, there seems to be a widespread view that the limit of INR30 crore (USD4.1m) is too low and needs to be revised.⁶

New investors are emerging to compete with established corporates

Many early-stage projects are seeing bids from relatively new Independent Power Producers (IPPs) like **Renew Power** or **Azure Power**. Well established corporate houses like **Reliance Industries**, and **JSW**, alongside other large public sector entities like **Coal India Limited** and **Gas Authority of India Ltd.**, are also implementing large scale plans to invest in renewables, adding to the issuer pipeline.

Increases in capacity create scale and competition

In 2021, estimates for total added renewable capacity were 11.2GW, split between utility-scale solar (7.8GW), rooftop solar (1.8 GW), and utility-scale wind (1.6GW).⁷ Refinancing of these projects combined with new upcoming renewable installations underpins the near-term GSS bond pipeline. The success of utility-scale renewable energy also creates new financing instruments like Infrastructure Investment Trust (INVIT). Despite not initially being labelled green, one INVIT dedicated to renewable energy has come into the market, sponsored by Private Equity fund KKR, which has also issued bonds locally.⁸ There have been press reports about other generation companies coming up with INVITs backed by renewable energy assets.⁹

However, refinancing will likely be affected by rising interest rates, widely expected following post-COVID-19 global inflation, and hawkish communication from the US Fed. According to the banking community, this risk of market contraction appeared in 2018 when the rising rate dramatically impacted offshore issuance volumes.¹⁰

Rooftop solar developers

Beyond the installations from the national and state grids, rooftop solar segment installations contribute close to 7GW of generation capacity. This segment has seen substantial growth after the introduction of favourable policies such as net metering, allowing users who generate their solar electricity from panels or photovoltaic systems to export their surplus energy back to the grid.¹¹ Customers are only billed for their net energy use.

However, roll outs suffered when distribution companies (DISCOMS) realised that these policies were likely to impact them adversely. These benefits were subsequently restricted and, in some cases, withdrawn.¹² The growth rate dropped substantially after that and falls well short of the 40GW target of 2022.

Nevertheless, falling battery prices are expected to give power backup installations a push, and particularly benefit the rooftop solar and even ground-mounted distributed energy. Power backup with standalone batteries is currently costly, and consumers in some states are willing to pay a premium for a reliable power supply. A study published in mid-2021 asserted that standalone battery energy storage is expected to become cost-competitive compared to diesel generators by around 2025.¹³ Some of the shift is already happening, as oil prices, while generally low, are volatile, and peaks influenced by global political developments rendering diesel generators a power source with high-cost volatility. Affordable batteries enable power backup based on solar energy and create new commercial, industrial, and residential applications.

Renewable energy players active in the open-access space

Various developers have drawn down debt from investors with a specialised understanding of renewable energy assets generated by open access power purchase agreements (PPAs). The concept allows customers to choose between competitive power companies, rather than being forced to buy power from the local utility monopoly. Bond issuance from developers in this segment is likely in the coming years as mainstream investors' awareness of the importance of renewables and ability to invest in them increases.

Continuum Energy has issued a green bond primarily backed by open access contracts, i.e., installations that serve corporates and use the grid as a transmission mechanism. Some developers in the rooftop solar space (and some in the utility-scale renewables space) are also involved in open access with about 18GW of cumulative installations serving corporates at the end of 2021.¹⁴

Corporates with on-site installations and investments in open access installations

The green bond market offers a ready source of capital for refinancing. Corporates that have invested in on-site solar and open access projects via SPVs can refinance via green bonds and this market is expected to start growing. The number of installations is rising due to cost savings, and there are talks about possibilities of virtual PPAs, which, if endorsed by policymakers, could increase investment which could later be refinanced via green bonds. Numerous large corporates, including reputable names like Hindalco and ACC Ltd. with an existing footprint in the bond markets, have invested making the possible universe of issuers relatively large.^{15,16}

Electric vehicle ecosystem

EVs are increasingly gaining popularity. In 2021, 329,190 EVs were sold in India, representing a 168% increase over 2020 sales.¹⁷ In December alone, 50,866 units were sold, representing a month-on-month increase of 21%, a YOY jump of 240%, and the first month ever in which EV sales crossed the monthly 50,000-mark.¹⁸ With a combined EV market share greater than 90% (by number of units sold), the electric two- and three-wheeler segments dominate.¹⁹

Supportive government policies have primarily driven the growth in adoption of EVs.²⁰ The Union Government's Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME) scheme offers various subsidies in support of national electric mobility policies, several states have rolled out their respective EV policies to drive sustainable mobility.²¹ More than 50% of Indian states have EV state policies, with more in the pipeline.

Supportive policies include monetary subsidies on EV purchases, exemption from road tax & vehicle registration fees, and lower borrowing costs for EV loans.^{22,23} They also include initiatives for public transportation and encouraging last-mile delivery providers to purchase EVs in larger quantities. In addition to subsidies and tax rebates, the government has launched multiple Production-Linked Incentive (PLI) schemes to facilitate the creation of a local manufacturing ecosystem to enable greater adoption of electric mobility in the transport sector.²⁴ The Union Budget of 2022 also announced incentives for charging infrastructure.

While there is a lot of activity from start-ups in many market segments, traditional auto original equipment manufacturers (OEMs) such as Tata Motors, Hyundai, Mahindra and Hero Motors dominate the passenger car market.²⁵ Traditional OEMs are now launching products in the two-wheeler markets, an area that began as the preserve of start-ups.²⁶

EV production and charging infrastructure development are becoming lucrative investment options, and the annual investment is expected to increase sharply from 2021 levels, which recorded INR25,045 Crores (USD3.75bn) of investments in e2W, e4W, EV component makers, electric commercial vehicles, and last-mile delivery companies.²⁷ Key investment announcements in this segment in India totalled INR48,000 crores (USD6.5bn) between January–December 2021.²⁸ Investor types vary from DFIs to venture capitalists and high-net worth individuals with limited interest from mainstream banking institutions, according to conversations with industry analysts.

Circular economy and waste management

The Indian waste management sector is experiencing healthy growth. While high population density and increased industrial activity generate more waste, other factors contribute to the development of this industry.

These include regulation updated in 2016; initiatives of the Swatch Bharat Mission (as ranking of cities for cleanliness); the economics of recycling; and increased contribution to the growth from the focus on sustainability and the environment. The push for a circular economy will ultimately help to change the current direction from recycling waste to adopting broad circular economy principles across industries and sectors. Examples could include changes in product design to enable reuse and recycling alongside other systemic changes in the repair and post-use infrastructure. While some innovations are new, some industries, like recycling PET bottles to polyester fibre and paper and metal recycling, are well established with multiple players and continuous operations stretching back more than two decades.²⁹



The Indian waste management industry has strong growth potential, as only 30% of the 75% recyclable waste is currently recycled.³⁰ The lack of efficient infrastructure for segregation, collection, disposal, and recycling is one of the many reasons for poor waste management in the country. Sound policies for collecting, disposal, and recycling are needed, and some policies on extended producer responsibilities are being introduced.

The industry is characterised by players that have been active for more than a decade, have undergone multiple rounds of CAPEX, and have a multinational presence.³¹ Increasingly, many start-ups are generating innovative ideas to manage waste and convert it into resources. Start-ups tend to have unique business models, evolving as the industry grows. Besides municipal waste, there are players in e-waste management and battery recycling.³² Major fast-moving consumer goods players cooperate with start-ups, sometimes through extended producer responsibility (EPR) policies.³³

These trends are encouraging. However, there is a need for greater innovation and access to technology. The Union Budget of 2021-22 announced allocations of INR1,41,678 crore (USD19.4bn) for Urban Swachh Bharat Mission 2.0, which is likely to boost many such players in the waste management space.³⁴ A few are actively working towards their first green bond issuance, and DFIs will likely play a role initially, as they have in other segments.

Agriculture

Agriculture is the primary source of income for approximately 60% of India's population.³⁵ Climate-smart agriculture (CSA) is a dynamic approach to farming to enable a sustainable increase in production and farm incomes, build resilience and adapt to climate change, and reduce and remove greenhouse gas (GHG) emissions. CSA can ensure a source of income for the masses and contribute to the achievement of SDG3 and SDG13 (Zero Hunger and Climate Action) by ensuring food security for all and by providing steps towards climate mitigation and adaptation, respectively.



Samunnati Financial Intermediation & Services Private Limited (Samunnati) was the first to issue a green bond with agriculture as a UoP category when it priced a USD4.6m deal in 2021.³⁶ The deal was arranged by Symbiotics, the market access platform for impact investing. As per the press release, Samunnati's definition of green loans have been guided by the standards of Climate Bonds Initiative and The Green Bond Principles.³⁷ Other transactions include a bond by **Grameen Impact Capital** wherein the beneficiaries are agricultural technology (agtech) companies, but whose details are not in the public domain.

While issuance is small, Climate Bonds has reached out to several issuers, some of whom have confirmed intentions to issue green bonds, as described in a recent blog by the World Resources Institute.³⁸ Besides financial institutions, several large off-takers of sustainably produced agricultural and forestry produce

are considering issuance. While there are players in the segment who have been working on sustainability as a business planning and continuity issue, quite a few, especially in the textile value chain, have incorporated sustainable sourcing as a matter of customer satisfaction. This is especially relevant among those with customer bases in the West with strong preferences for products made from sustainably sourced raw materials. Green bonds from suppliers of materials like organic stimulants, as well as firms manufacturing and supplying climate-smart tools and technology, present significant potential.

Agtech is a large segment that has arisen, and as the name implies, most of the industry comprises firms that apply technology to agriculture. A key enabler within this industry would be stronger communication with farmers. This could be supported by economically priced data and affordable handphones, where the mobile phone ecosystem facilitates communication. Media tools like WhatsApp could communicate instructions or recorded messages/webinars on scientific ways of cultivation, storage availability, market linkages, soil quality checks, farm inputs, etc.

One of the earliest such platforms is ITC's **e-Choupal**, which has been rural India's most extensive internet-based intervention. It claims to have increased farmers' income by 50% through its direct sourcing model.³⁹ Further, agri-based artificial intelligence tools collect on-farm data, connect it to larger databases and platforms to accelerate local and practice-specific knowledge, and link funders, farmers, and rewards with climate-smart indicators. While the industry has a few players that have existed for a decade and demonstrated ongoing profitability, companies with less than five years in operation constitute most of the industry.

Real estate

According to the Indian Green Building Council, the green building space in the country stands at 7.97bn square feet and ranks second only to

the USA in terms of area covered.⁴⁰ However, green bonds backed by green buildings have been limited. Most of the deals have emanated from corporates/FIs with UoP earmarked for loans to green buildings which the respective FI has financed, or sometimes green buildings which the issuer owns and is using as commercial or office space.

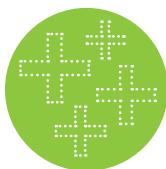


However, there is strong interest in green debt from a limited number of players among housing finance companies, top-end developers, and real estate investment trusts (REITs).

The disbursement of funds is generally linked to achieving specific green objectives or certifications (green building ratings linked to LEED, GRIHA, IGBC, EDGE or similar grading systems) and is incentivised by preferential rates. Borrowers are typically routed through an Indian intermediary bank which lends at a concessional rate for construction financing, mortgage financing, etc. The market may take time to reach the necessary volumes, but anecdotally, more deals emerging from new market segments are in the pipeline.

Impact investors identify potential green issuers

Impact investing covers investments in companies, organisations, or funds to generate a beneficial and measurable social or environmental impact alongside a financial return. Impact investing falls on a continuum, extending from strategic philanthropy at one end (impact first) to socially responsible investing (SRI) or environmental, social, and governance (ESG) roles in commercial investing (returns first) at the other end.



A recent report by the India Impact Investing Council stated that core impact investing, including blended finance, ESG, SRI and

corporate social responsibility (CSR) investing, etc., but excluding philanthropy, has mobilised about USD11bn from more than 550 for-profit social enterprises.⁴¹ These investments have benefited over 490m individuals primarily based in low-income communities who are underserved by traditional businesses and delivery of public sector social services.⁴²

Many climate-related impact investors support distributed renewable energy, waste management, precision agriculture, and the EV ecosystem. Some have scaled up to the extent that green bonds are being discussed. The ecosystem of impact investors, intermediaries, etc., is now clearly defined and is likely to support future asset classification and other players entering the markets, which could eventually lead to large green bonds.

The creation of the Social Stock Exchange in late 2021 may prove a suitable platform for future impact investing, including not-for-profits as well as for-profits that qualify as social businesses. The official launch of the Social Stock Exchange may also see some GSS instruments issued through the exchange.⁴³

Growth of ESG funds

The majority of ESG funds in India were launched after 2019, with assets under management (AUM) of ESG-based funds rising 4.7x in the two years since.⁴⁴ The size of ESG investments in India in the context of global AUM is insignificant but has been growing aggressively. These funds do not seem to have a definitive link to decarbonisation, with varying exposure to carbon-intensive sectors like oil and gas. Decarbonisation is likely to emerge as a theme for some funds, with progressive announcements/policies toward net-zero creating greater decarbonisation opportunities.



Other countries in South Asia

While 2021 was a breakout year for India, the ecosystem for labelled debt is also rapidly

developing in the South Asian Association for Regional Cooperation (SAARC) region. Notable transactions include the **Pakistan Water & Power Development Authority (WAPDA)** notably pricing a ten-year USD500m Eurobond with proceeds earmarked for renewable energy and adaptation.⁴⁵ WAPDA is responsible for the operation, maintenance, upgrade, and expansion of hydropower plants, large water reservoirs, and the construction of new power generation and water storage projects in the Indus Basin in Pakistan. It represents 96% of Pakistan's hydroelectric power generation capacity as of 30 June 2020.



Symbiotics arranged the first green bond from Sri Lanka. The UoP from **Seylan Bank Plc's** USD15.1m green bond is mainly aimed at sustainable agriculture.⁴⁶ Bangladesh based NGO the SAJIDA Foundation recently announced a green bond backed by solar assets.⁴⁷ A notable development in Bangladesh was the publication of a Sustainable Finance Policy by the Bank of Bangladesh in 2020, which included a sustainable taxonomy.⁴⁸

7. Policy Overview

Policy supporting sustainable finance

Policy development will create the necessary framework for the growth of the sustainable finance market in India. There is an acknowledgement of the need to align with international and domestic best practices, the need for transparency, and a greater degree of standardisation.



Since late 2020, policy and regulatory initiatives have been formalised. The Ministry of Finance (MoF) set up a Sustainable Finance Task Force to develop four pillars of action outlined in its Sustainable Finance Roadmap:

- Pillar I:**
Indian Taxonomy of sustainable activities
- Pillar II:**
Reporting and disclosure
- Pillar III:**
Financial policy and regulation
- Pillar IV:**
Ecosystem development

A set of recommendations and an action plan have been proposed under each pillar, with a report for public consultation expected in 2022. Actions under each pillar may be further prioritised in keeping with the announcements made by the government of India with respects to 2030 targets set for the country at the COP26.

The RBI has also joined the Network for Greening the Financial System (NGFS) and the MoF represents India as a founding member at the International Platform for Sustainable Finance (IPSF).

The Sustainable Finance Task Force		
Financial Regulators	Ministries	Working Groups
Reserve Bank of India (RBI)	Ministry of Finance (MOF) (Anchor)	Taxonomy Development
Securities & Exchange Board of India (SEBI)	Ministry of Environment, Forest, and Climate Change (MoEFCC)	Regulation, Resilience and Disclosures
Pension Fund Regulatory and Development Authority (PFRDA)	Ministry of Corporate Affairs (MoCA)	Sustainable Finance Roadmap
Insurance Regulatory and Development of India (IRDAI)		Ecosystem Development
International Financial Services Centre Authority (IFSCA)		

Policy development will create the necessary frameworks for market development. There is an acknowledgement of the need to align with international best practice, and Indian financial actors are also exploring the assessment, disclosure, and mitigation of risks related to ESG factors. Currently, climate-driven physical and transition risks are not adequately disclosed in active mandates, and voluntary climate risk disclosures by financial and non-financial entities are not widespread. Both aspects are set to gain increasing traction in the near future through emerging policy and market discourse.

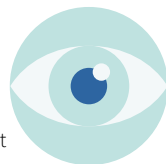
While the Government has not announced a distinct green stimulus or green recovery programme, multiple other announcements and policy decisions stack up toward a green transition. Examples include the National Hydrogen Policy, which includes a roadmap for using hydrogen as an energy source, central and state-level policy announcements for

EVs, and the sporadic but definite emphasis on sustainable agriculture to enhance farmer incomes.

The MoF has announced its intention to join the Sovereign Green Bond Club in 2022. The green bond will be INR-denominated and finance investments that reduce the economy's carbon intensity. An Indian sovereign green bond is intended to raise the profile of India as a green finance hub, encourage the development of policy and local infrastructure (e.g., SPO providers), and attract both public and private capital to the market. Climate Bonds' *Sovereign Green, Social, and Sustainability Bond Survey* describes some of the challenges and benefits faced by sovereign issuers entering the market.⁴⁹

8. Outlook

The Indian GSS debt market is gathering momentum. The developments described in this report allude to five key themes influencing the market development in 2022:



- **The Union Budget of 2022** included the announcement of a domestically issued sovereign green bond using conventional mechanisms. The sovereign green bond will likely encourage more issuance from public and private sector entities in the domestic green bond markets with an almost immediate impact.
- **Most GSS deals originating from India have been in the offshore market.** The actions of the MoF's Sustainable Finance Task Force will likely strengthen the domestic market further; however, the effects may only materialise in the medium- to long-term.
- **Utility-scale renewable energy is expected to continue its dominance among UoP categories** based on robust auction mechanisms for assets and support from the banking community. While there is action from other segments described above, the large-scale renewable energy segment is expected to dominate for at least the next three to five years.
- **Solar rooftop and EVs will remain the next best development prospects** in the Indian market and are expected to benefit from future green bonds. Over the medium-term, these segments are likely to capitalise on declining power storage costs with applications across commercial, industrial and residential segments.
- **In the past, interest rate movements have affected GSS issuance volumes** – for example, in 2018, rising rates from the Fed led to a lower number of offshore deals. The expectation of higher rates could lead to lower volumes in the near term across not only thematic but overall debt issuance.

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