COAL VS RENEWABLES INVESTMENT REPORT

REPORT BY CLIMATE TRENDS
& CENTRE FOR FINANCIAL
ACCOUNTABILITY

INDIA
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is a Delhi-based think tank that focuses on sustainable and accountable financing of infrastructure projects. CFA aims to strengthen and improve financial accountability within India.

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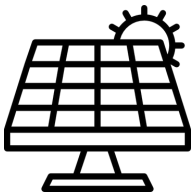

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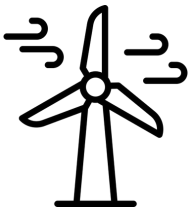
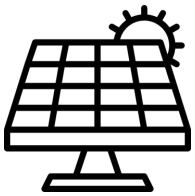
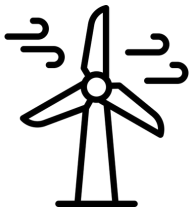




METHODOLOGY

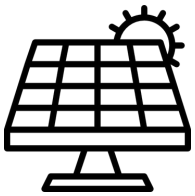


This analysis assessed **68 project finance loans** across 11 coal and renewable energy projects in India that reached financial closure between 1 January 2022 and 31 December 2022. Renewable energy projects are defined as either hydroelectric, geothermal, wave, wind or solar power projects. However, this report will look at wind and solar project finance loans only. Total project finance loans amounted to **INR 18,577 crore (USD 2.36 billion),** of which **100% flowed into renewable energy projects. The total capacity across all projects identified was 2.943 gigawatts (GW).**

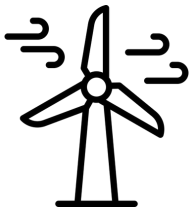
Deals were initially identified using Bloomberg Professional, a subscription-based financial database. Previous reports included the analysis of more sources, which might affect the total sum of deals. However, the Bloomberg Professional database gives the most complete picture of financial deals. Where there was missing information on the deals, they were cross-checked with various resources, including company records, market disclosures and media reports. These sources were then evaluated to determine whether they should be included in our analysis. Four loans were left out of this report due to a lack of information.

Importantly, this analysis only included project finance lending and excluded corporate lending. All dollar amounts are in US dollars (USD) unless otherwise stated. All lending was either in Indian Rupees (INR), Japanese Yen (JPY) or USD. The value of each loan is the amount specified on the date of financial closure. This analysis used Bloomberg Professional to convert and aggregate lending, using the average exchange rate for 2022.

This report is not meant to be an exhaustive list of all power sector loans in India. Rather, it provides a snapshot of the project finance landscape for coal and renewable energy. As the number of project finance loans was significantly lower than in previous years, partly due to a change in our methodology as we used one source instead of three, it will not make comparisons to previous iterations of this report published in 2018, 2019, 2020, 2021 and 2022.



1. INTRODUCTION



This is the sixth version of the annual Coal vs Renewables investment report. Unlike the previous versions, this report is what we term as 'lite version' since it only relies on data gathered from the Bloomberg terminal. While the data represented in this analysis is accurate, we can't compare sector-specific key findings with previous versions since there is a difference in methodology. We can, however, compare total project finance lending to energy projects.

In continuation of the global trend, not a single coal power plant in India received project finance lending in 2022. Data collected through Bloomberg terminal highlighted that all energy projects that reached financial closure for project finance lending in 2022 were renewable energy projects.

Compared to the previous year, we observe a 45% reduction in project finance to renewable energy projects in 2022. This could be a result of several external factors such as project delays due to the pandemic, supply line disruptions, increase in costs of finance due to higher interest rates as well as increased costs due to domestic policies.

This analysis only looked at project finance loans - which are the types of loans that are granted to a particular project of a company. There are other ways to raise money, such as corporate finance - which mainly involves raising capital for a company without it being tied to any project directly. Project finance is the more common choice for investments in energy infrastructure projects since it does not impact corporate balance sheets as much as a corporate finance lending does.

Globally, project finance lending to coal power projects has come to a grinding halt, but funds continue to trickle in through corporate lending. Since it's not always possible to connect corporate finance lending to a particular power project, usually non-ESG linked corporate lending to a predominantly coal power developer, such as Adani Power or NTPC, could be assumed to be for coal power plant expansion.

Funds are flowing into the coal industry at a lower value than before the Paris Agreement was signed in 2015. A report released in October 2022 by Global Energy Monitor reported that between 2019 – 2022, the top 12 global coal lenders and/or underwriters in the net-zero banking alliance provided USD 11 billion worth of loans and underwriting services to Indian companies currently engaged in coal power expansion. A new initiative, proposed to be announced at COP28 in Dubai, aims to plug in loopholes which continue to allow discrete funding to coal project developers around the world.

Private and commercial banks in India have continued to reduce their overall exposure to coal projects and increasingly funded renewable energy projects. This is in line with the Reserve Bank of India's note advising Indian financial institutions to account for climate change and energy transition related risks.

Federal Bank, one of the largest private sector banks in India with over 16 million customers, announced a coal exclusion policy in 2021. The bank had recently refinanced JSW's existing project finance loan for its Barmer coal plant maturing in 2028. The Federal Bank aims to end its coal power exposure by 2034.

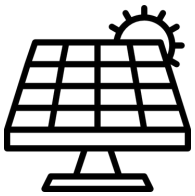
Several developers have also begun to shift away from coal. JSW Energy, a private coal power developer, proposed two additional coal power units in 2019 at its Barmer facility. However, since there was no development on the project since December 2019, it was presumed to be shelved or cancelled. Tata power, one of India's largest private power developers, announced an end to coal power construction. In addition, Tata power has also announced a phase out of its existing coal power assets by 2040. Adani is the only private power developer still building new coal power plants.

Besides Adani, most coal power plants in India are being built by the Indian central government and state government owned companies. According to its National Electricity Plan, India plans to increase its installed coal power capacity by over 20%, from 213.5 GW as of October 2023 to about 259.6 GW by 2032. The same electricity plan aims to increase installed renewable energy capacity to 486.5 GW by 2032. At the end of 2022, India had 105 GW of total installed solar and wind power capacity - that's an increase of 360%.

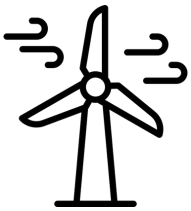
India's ambitious renewable energy targets would need significant finance from domestic and international financial institutions. According to Bloomberg New Energy Finance, India needs over USD 223 billion to meet its 2030 renewable energy targets.

A recently published policy paper by India's central bank, Reserve Bank of India, concluded that to ensure a smooth transition, a calibrated approach towards reducing lending to coal and other fossil fuels is required. While the banking sector's lending to coal projects has significantly declined since 2017, lending to renewable energy projects has not increased to the levels that are required for India to meet its renewable targets.

The Government of India ought to exercise meticulous care and thorough consideration in the formulation of policies intended to bolster the domestic solar and wind industries. It is imperative that such policies, while designed to safeguard the interests of the domestic sector, do not inadvertently impede its growth and development. Furthermore, it is essential for the administration to reassess its strategy pertaining to coal power. Mandating the private sector to construct new coal plants could potentially jeopardize the financial stability of private power operators, leading them into a state of fiscal distress. This could also precipitate a surge in bad loans and non-performing assets, which would be detrimental to the broader economic landscape.



2. SUMMARY OF FINDINGS



- For the second year in a row, **100% of the value of the project finance loans identified in 2022 in India went to renewable energy projects.**[1] However, the total amount of INR 18,577 crore (USD 2.36 billion) is a **45% decrease from 2021 levels.**

- Primary financing - funding allocated to construct new projects - continued to dominate the project financing landscape in India. Over **85% of all deals were categorised as primary financing** deals, with refinancing constituting the remaining 15%.

- Like last year, **solar power was the dominant renewable energy,** accounting for **six out of eleven deals, or 40% of financing**. However, **solar lending in 2022 dropped by over 64%** to INR 7,361 crore (USD 935 million), financing 1,849 megawatts (MW) of solar projects.

- Wind power comprised only 4% of total renewable energy lending in 2022, financing two projects equalling 144 MW of wind energy. This represents a more than 80% decrease compared to 2021.

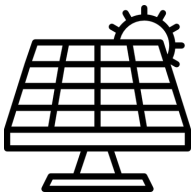
[1] A coal loan which was signed in 2021 was already accounted for in the report published in 2022 and is therefore not included in this analysis. Including it would mean that 20% of the total value went to coal power plants and 80% to renewable projects.

- Hybrid projects for both solar and wind accounted for 56% of financing and a capacity of 950 MW. The proportion going to each technology is unclear.

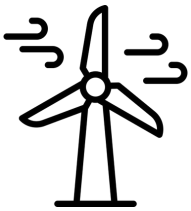
- The majority of loans came from commercial banks, totalling five deals and 68% of overall funding. Commercial lending for renewable projects **decreased by 51%** from 2021 levels.

- Like in 2021, **Rajasthan was the biggest beneficiary of renewable energy lending** compared to other Indian states, with over INR 7,579 crore (USD 963 million).

- The Coöperatieve Rabobank UA was the largest lender, with a loan totalling INR 7,749 crore (USD 985 million). This loan outperforms the largest renewables loan of 2021, provided by the L&T Finance, which was INR 4,214 crore (USD 565 million).

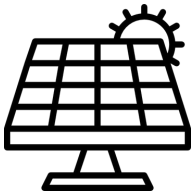


3. WHO IS LENDING TO COAL?

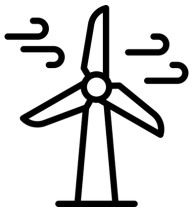


I**n 2022, no new coal power projects received any project finance.** This is the sixth edition of this report and the second year in a row that no new project finance for coal power projects has been recorded. One coal power project, identified last year, was granted a standby credit facility. At the same time, renewable energy lending has also decreased significantly.

This does not mean no additional coal power projects were funded in 2022 - since the scope of this analysis only looks at project finance, and not equity or corporate finance.



4. WHO IS LENDING TO RENEWABLES?



In 2022, there were eleven renewable energy project financing deals, which provided a total of INR 18,577 crore (USD 2.36 billion) in loans. This represents a decrease of over 45% from 2021 levels.

Solar energy was once again the renewable energy project of choice, accounting for six deals.[2] These loans financed 1.85 GW of solar PV, a 68% decrease from 5.81 GW in 2021. With INR 7,361 crore (USD 935 million), the value of solar lending decreased by over 64% compared to 2021 (in 2021 it was INR 20,193 crore, USD 2,736). Solar lending accounted for 40% of renewable energy financing in 2022.

The **majority of the funding (56%) went into loans for hybrid (solar and wind) projects.** In total, the three hybrid loans supported a capacity of 950 MW. Funding for hybrid projects has experienced a 5% increase from 2021 levels, rising from INR 10,002 crore to INR 10,484 crore.

The two remaining loans financed **wind energy projects with a total capacity of 144 MW,** representing an over 80% decrease compared to 2021. Overall, wind comprised only 4% of total renewable energy lending in 2022.[3]

SJVN Green Energy secured funding for the single largest deal in this analysis, a 1 GW solar energy project in Bikaner, Rajasthan. The project was funded by the Indian Renewable Energy Development Agency.

[2] This excludes projects that are a hybrid of wind and solar and were accounted for separately.
[3] This excludes projects that are a hybrid of wind and solar and were accounted for separately.

Looking beyond project finance, the total installed renewable energy capacity in India reached 177 GW in 2022. This means that India is not on track to reach its goal of 500 GW of cumulative installed capacity from non-fossil fuel sources by 2030. However, the government is taking measures to accelerate the development of renewables, including reorganising renewable auctions. India's government is also increasingly announcing tenders that involve round the clock supply of electricity from hybrid renewable systems with energy storage.

Technology	Number of projects	Loan (₹ crore)	Loan (US$ million)
Solar	6	7,361	935
Wind	2	732	93
Hybrid	3	10,484	1,333

4.1 THE MAJORITY OF RENEWABLE ENERGY LOANS WENT TO THE CONSTRUCTION OF NEW PROJECTS

Among renewable energy loans, 85%, or INR 15,698 crore (USD 1.995 billion), was designated as primary financing. Total funding for those new renewable energy projects in 2022 was around 42% lower compared to 2021 levels.

Refinancing of existing projects accounted for INR 2,880 crore (USD 366 million), representing 15% of total renewable energy funding. This is a 59% decrease in comparison to 2021, when refinancing renewable projects accounted for INR 6,996 crore (USD 943 million).

4.2 COMMERCIAL BANKS PROVIDED MAJORITY OF FUNDING

Commercial banks and government agencies provided funding for five projects each. However, commercial banks provided 68% of the value of the funding. Coöperatieve Rabobank UA was the largest lender, allocating INR 7,749 crore (USD 985 million) in loans. This loan outperforms the largest renewables loan of 2021, provided by the L&T Finance, which came to INR 4,214 crore (USD 565 million). Notably, the Indian Renewable Energy Development Agency was the second largest lender to renewable energy projects, providing INR 5,646 crore (USD 717 million) in loans.

Bank	Loan (₹crore)	Loan (US$ million)
Coöperatieve Rabobank UA	7,749	985
Indian Renewable Energy Development Agency	5,646	717
BNP Paribas/Mumbai	2,266	288
MUFG Bank Ltd	1,678	213
Indusind Bank Ltd	653	83
Aseem infrastructure Finance Ltd	216	27
ICICI Bank	212	27
United States International Development Finance	157	20

4.3 TOP FIVE RENEWABLE PROJECTS

The capacity of renewable energy projects being built has decreased. In 2021, the average size of the top five solar or wind farms was 560 MW. In 2022, average capacity fell to 500 MW.

Project	Technology	Sponsor	Funded capacity (MW)	Loan (₹ crore)	Loan (US$ million)
SJVN Green Energy	Solar	SJVN Green Energy Ltd	1,000	4,445	564
Adani Solar Energy Jaisalmer One	Hybrid	Adani Solar Energy Jaisalmer One Pvt Ltd	450	2,266	288
Renew Round The Clock Project	Hybrid	Renew Surya Roshni Pvt Ltd	400	7,749	985
Adani Green Energy	Solar	Adani Solar Energy AP Six Pvt Ltd	350	1,678	213
Renew Sun Bright Solar	Solar	Renew Sun Bright Pvt Ltd	300	216	27

4.4 TOP FIVE RENEWABLE SPONSORS

ReNew Power topped the list with **INR 8,707 crore (USD 1.107 billion)** in loans, increasing its loan value by 154% from 2021. This growth was driven by its 'Renew Round The Clock Project', which was awarded the 'Asia Pacific Green Deal of the year - 2022' by PFI. The project incorporates battery storage to overcome intermittency issues from solar and wind power. The deal was backed by a consortium of 12 banks, with the largest share of funding from DBS Bank, Intesa Sanpaolo, Mizuho bank and Sumitomo Mitsui Banking.

SJVN Green Energy and Adani Green Energy were also among the top renewable energy sponsors in 2022. State-owned hydro-power major SJVN Green Energy received an INR 4,445 crore (USD 564 million) loan for a 1 GW solar power project in Rajasthan.

Sponsor	Funded capacity (MW)	Loan (US$ million)	Loan (₹ crore)
ReNew Power	846	1,107	8,707
SJVN Green Energy	1,000	564	4,445
Adani Green Energy	800	501	3,944
Abrel Spv ADANI2	120	82	653
Narmada Wind Energy Pvt Ltd	98	58	459

4.5 RENEWABLE ENERGY LENDING REMAINS HIGHLY CONCENTRATED IN RAJASTHAN

Rajasthan is by far the top beneficiary of renewable energy lending compared to other Indian states. There were three loans that financed multiple projects across different locations, and we could not calculate what share of each loan was divided across the locations involved. Despite not being able to calculate the exact value, it is clear that Rajasthan once again received the most funding. Rajasthan has the highest solar PV potential in the country and the highest number of clear, sunny days (>325 a year). The state achieved a 43% share of solar and wind electricity generation in July 2023.

State	Solar (₹ crore)	Wind (₹ crore)	Solar and Wind (₹ crore)	Renewables (₹ crore)	Renewables (US$ million)
Rajasthan, Maharashtra And Karnataka			7,749	7,749	985
Rajasthan	5,314		2,266	7,579	963
Andhra Pradesh	1,678	272		1,951	248
Madhya Pradesh and Rajasthan			470	470	60
Madhya Pradesh and Gujarat		459		459	58
Tamil Nadu	212			212	26
Karnataka	157			157	20

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