

COAL **vs**
RENEWABLES

FINANCIAL ANALYSIS

INDIA
2019

Published in November 2020




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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METHODOLOGY

This analysis assessed 50 project finance loans across 43 coal-fired and renewable energy projects in India that reached financial close between 1st January 2019 and 31st December 2019. Renewable energy projects were defined as hydroelectric, geothermal, wave, wind and solar power projects.

Deals were initially identified on three subscription-based financial databases: Bloomberg Professional, IJ Global and Thomson Reuters. Following identification, each deal was cross-referenced across these databases. Thereafter, deals were corroborated with company records, market disclosures and media reports. Where information of the deal was inconsistent, a decision was made to most accurately reflect the status of the deal.

This analysis only included project finance lending and excluded corporate lending. If the source of funds or the project to which funds were allocated was unclear, the deal was also excluded.

All dollar amounts are in US Dollars (USD) unless otherwise stated. All lending was either in Indian Rupees (INR) or USD. The value of each loan is the amount specified on the date of financial close. This analysis used the US Federal Reserve exchange rate to convert and aggregate lending, using the exchange rate specified on the date of financial close. When there was no exchange rate available for the day of transaction, the rate of the closest available date was taken.

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1 INTRODUCTION

India has set itself the ambitious target of installing 450 GW of renewable energy capacity by the end of the decade, which will likely require at least US\$ 500 billion in investment. The momentum towards this target has been building over the past few years and continued in 2019.

India installed more than 10 GW of renewable capacity last year, of which 7 GW was solar, bringing the country's total capacity to 85.8 GW. But 2019 also saw the renewable energy sector post its slowest growth rate yet - generation only increased by 5.2% compared to the 27% increase seen in 2018. Analysts point to tariff renegotiations in numerous states, the curtailment of renewables, and a prolonged monsoon as factors contributing to this slowdown.

The construction of new coal-fired capacity more than doubled compared to 2018, with 8.8 GW beginning construction last year. This increase has worried financial analysts as it coincides with a time when major lenders are turning away from coal financing, putting existing and future capacity in financial distress. The government of India has since halted construction of 19.3 GW of coal-fired capacity due to difficulties in financing these projects, and is shrinking its pre-construction pipeline.

COVID-19 led to a collapse of India's electricity demand by 10.7% between April and July 2020, compared to 2019. Coal generation dropped by 17.8%, bearing most of the electricity demand decline, while renewable generation declined by 1.7%. The pandemic will have a long-lasting impact on India's electricity demand, which is predicted to fall between 7-17% by 2025, according to the The Energy Resource Institute (TERI). However, despite the pandemic, renewable energy is poised for growth, supported by long-term policy and auctions. India's first round-the-clock renewable auction saw record- low tariffs, further threatening coal power.

This analysis identified and examined project finance lending to 43 coal-fired and renewable energy projects totalling 8.2 GW in planned capacity, all of which reached financial close in the calendar year of 2019. The identified projects attracted Rs 24,071 crore (US\$ 3.41 billion) in loans of which 95% went to renewable energy projects and 5% to coal power projects.

This analysis is not meant to be an exhaustive list of all power loans in India. Instead it provides a snapshot of the financial institutions lending to coal and renewable energy projects. This analysis builds on and refers to the CFA 2017 and 2018 Coal vs Renewable Financial Analysis.



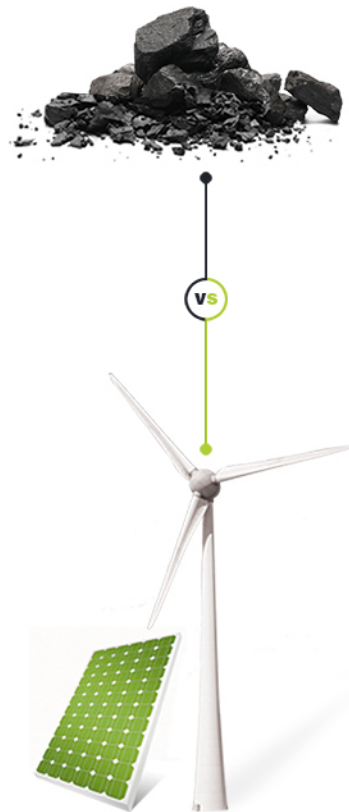
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SUMMARY



- Of the loans this analysis identified, **95% went to renewables and 5% went to coal.**
- Coal financing **further decreased by 82%** in 2019. This marks the second consecutive year-on-year decline in coal funding, following a 90% decrease in 2018. In 2019, only two coal-fired power projects with a total capacity of 3.06 GW received **Rs 1,100 cr (US\$ 190 mn)**. In 2018, five coal-fired projects with a combined capacity of 3.8 GW received **Rs 6,081 cr (US\$ 850 mn)**. By contrast, **Rs 60,767 cr (US\$ 9.35 bn)** was lent to 17 GW of coal power plants in 2017.
- Primary finance (a form of lending to new projects, as opposed to refinancing) to coal power projects decreased by **67% to Rs 400 cr (US\$ 92 mn) from Rs 1,207 cr (US\$ 190 mn)**.
- A cumulative **Rs 22,917 crore (US\$ 3,220 million)** was loaned to 41 renewable energy projects in 2019, a 6% year-on-year decline. **Solar PV accounted for 69% of this finance, while the remaining 31% went to wind projects.**
- Around **81% of loans to renewable energy projects were to construct new generation facilities.** Primary finance for renewables decreased 3% from 2018 to 2019.
- Commercial banks provided **Rs 950 cr (US\$ 156 mn) in loans to coal, commercial banks' financing decreased 126% from 2018 to 2019.** There was no government financing for coal in 2019 except for **Rs 150 cr (US\$ 34 mn)** from India's EXIM bank.

- Commercial banks provided the majority of loans to renewable energy projects, disbursing **Rs 12,887 cr (US\$ 1,786 mn) in funds. Majority state-owned financial institutions accounted for 24% or Rs 5,439 crore (US\$ 778 mn)** of these loans. This marked a significant increase from 2018 contributions, where state-owned institutions only provided 9% of loans to renewable energy projects.
- Rajasthan, Andhra Pradesh, Karnataka, Gujarat and Madhya Pradesh continue to be the most attractive states for renewable energy projects, accounting for **79% of total lending to renewables in 2019**. Meanwhile, Bihar was the only state in this analysis to only attract financing for coal-fired power plants.



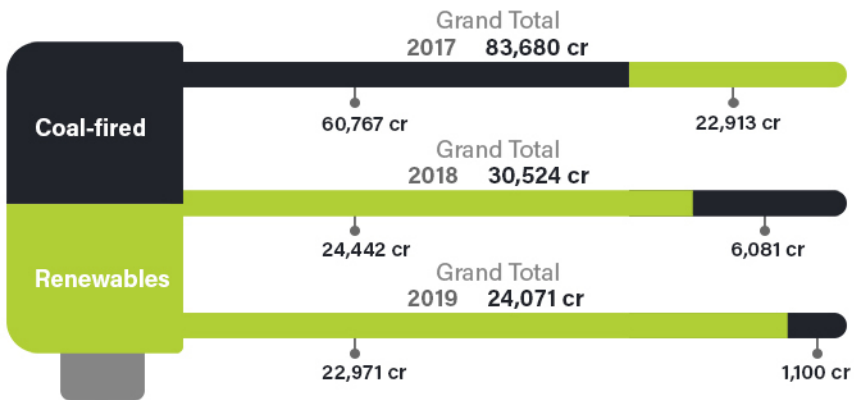
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PROJECT FINANCING TO DIFFERENT TYPES OF ENERGY PROJECTS, 2017-19



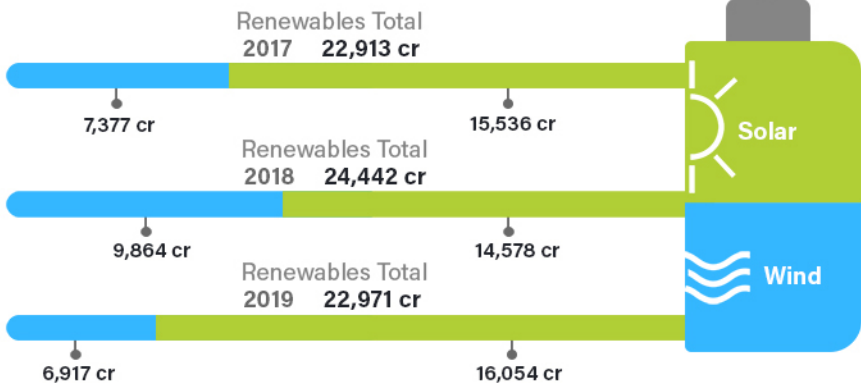
Renewables vs Coal Finance

Values in ₹



Solar vs Wind Financing

Values in ₹



4

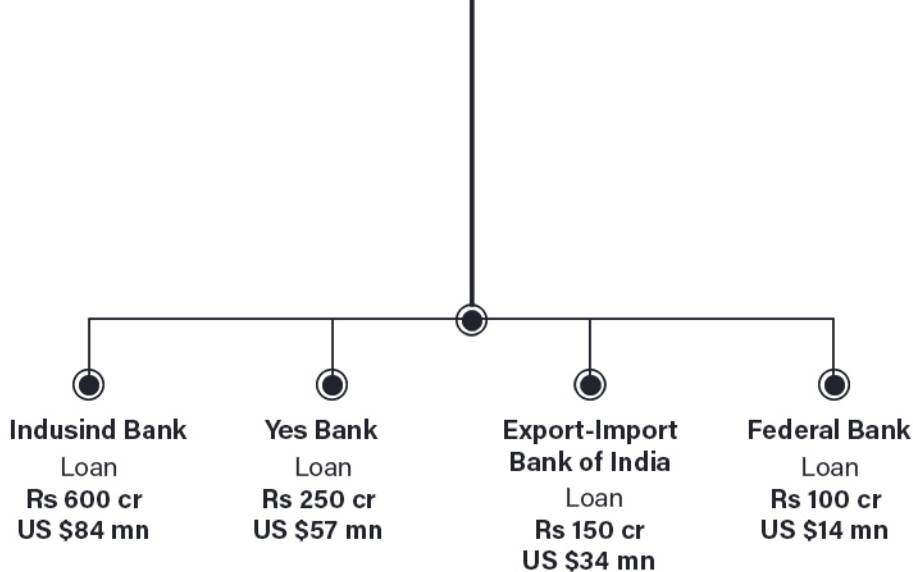
WHO IS LENDING TO COAL?

In 2019, four state-owned and commercial banks provided **Rs 1,100 cr (US\$ 190 mn)** in loans to **two coal power plants** with a combined capacity of **3.06 GW**. 2019 saw a continued slump in coal financing. The number of projects compared to last year decreased from five to two and the amount of coal financing decreased by 82%. This is **98% lower** than in 2017. Unlike 2017 and 2018, 2019 saw a significant drop in state financing for coal projects. The drop was also seen in commercial bank's coal financing. Apart from Rs 150 cr (US\$ 34 mn) from India's EXIM bank, **there was no other financing for coal from state-owned financial institutes in 2019. Commercial bank's financing to coal projects decreased by 126% from 2018 to 2019. In 2018, state-owned banks and financial institutes provided 65% of coal loans. In 2019, this dropped to 14%.**

This analysis identified and examined project finance lending to 43 coal-fired and renewable energy projects totalling 8.2 GW in planned capacity, all of which reached financial close in the calendar year of 2019. The identified projects attracted Rs 24,071 cr (US\$ 3.41 bn) in loans of which 95% went to renewable energy projects and 5% to coal power projects.

This analysis is not meant to be an exhaustive list of all power loans in India. Instead it provides a snapshot of the financial institutions lending to coal and renewable energy projects. This analysis builds on and refers to the two previous Coal vs Renewable Financial Analysis report for 2017 and 2018.





Thermal power generation in India has been in financial distress for the last few years. The Indian government has stated that 40% of its coal-fired capacity is financially stressed. Majority state-owned financial institutions are highly exposed to these risks. Over 50% of the combined asset books of the Power Finance Corporation and the Rural Electrification Corporation are exposed to coal-fired generation. Both institutions also have inadequate loan provisions to deal with an increasing quantity of stressed assets. The Institute for Energy Economics and Financial Analysis (IEEFA) estimates the stranded asset range in India to be between US\$ 40 billion to US\$ 60 billion. Recently, the State Bank of India raised concerns that likely delays in coal mining projects and decreasing demand for coal will continue to discourage banks from providing loans to coal power projects. Despite this, the Indian government is trying to encourage domestic lending to shore up the coal sector¹.

4.1 The majority of coal loans went to refinance existing projects

Refinancing continued to account for the majority of coal power lending in 2019. The **Rs 700 cr that refinanced JSW Energy's Barmer Power Plant in Rajasthan represented 64% of all identified coal loans**. Primary financing declined 67% from 2018. These funds were designated for the expansion of **Doosan Heavy Industries' Barh Super Thermal Power Station in Bihar**.

¹ BNEF: India's Biggest Lender Flags Concerns Over Funding Coal Mines. August 26, 2020. Accessed via the Bloomberg Network.

4.2

Sponsors of coal-fired power plants

Barmer Power Plant

Sponsor:
JSW Energy

Funded Capacity
1080 MW

Loan
Rs 700 cr
US \$99 mn

Barh Super Thermal Power Station

Sponsor:
Doosan Heavy Industries

Funded Capacity
1,980 MW

Loan
Rs 400 cr
US \$92 mn



5

WHO IS LENDING TO RENEWABLES?





This analysis identified 41 renewable energy projects that received a cumulative **Rs 22,971 cr (US\$ 3,220 mn)** in project finance loans in 2019. There were 28 solar projects and 13 wind projects with a total capacity of 3,839 MW and 1,315 MW, respectively. As was the case in 2018, renewable lending exceeded that of coal, with 95% of identified loans going to renewable energy.

Though lending to wind dropped 30%, solar loans increased by 10% from 2018 levels, also surpassing lending in 2017. Solar dominated project finance loans to renewables in Coal vs Renewables Financial Analysis 2017 and 2018 analysis. This trend continued in 2019, with **Rs 16,054 cr (US\$ 2,235 mn)**, or **69%** of loans, being set aside for PV projects.

However, 2019 saw a **6% drop in renewable energy lending from 2018**. The troubled state of India's electricity distribution companies (discoms) has impacted investment in renewable energy. Discoms owe generation companies **Rs 116,340 cr (US\$ 16 bn)**, of which **US\$ 1.1 bn** is owed to renewable generators². Given their difficulties in meeting these liabilities, discoms have begun to curtail renewable generation, despite being contractually obligated to take their power. Subsequently, many developers have had trouble securing financing for new projects. Interestingly, a recent internal Tata Power report recommended closing 60 GW of coal-fired capacity to ease the financial burden on India's discoms.

²

BNEF: Late Payments Stretch Over One Year for India's Renewables. August 18, 2020. Accessed via the Bloomberg Network.

	No. of Projects	Loans (₹ crore)	Loans (US\$ mn)
Solar 	28	16,054	2,235
Wind 	13	6,917	985

5.1

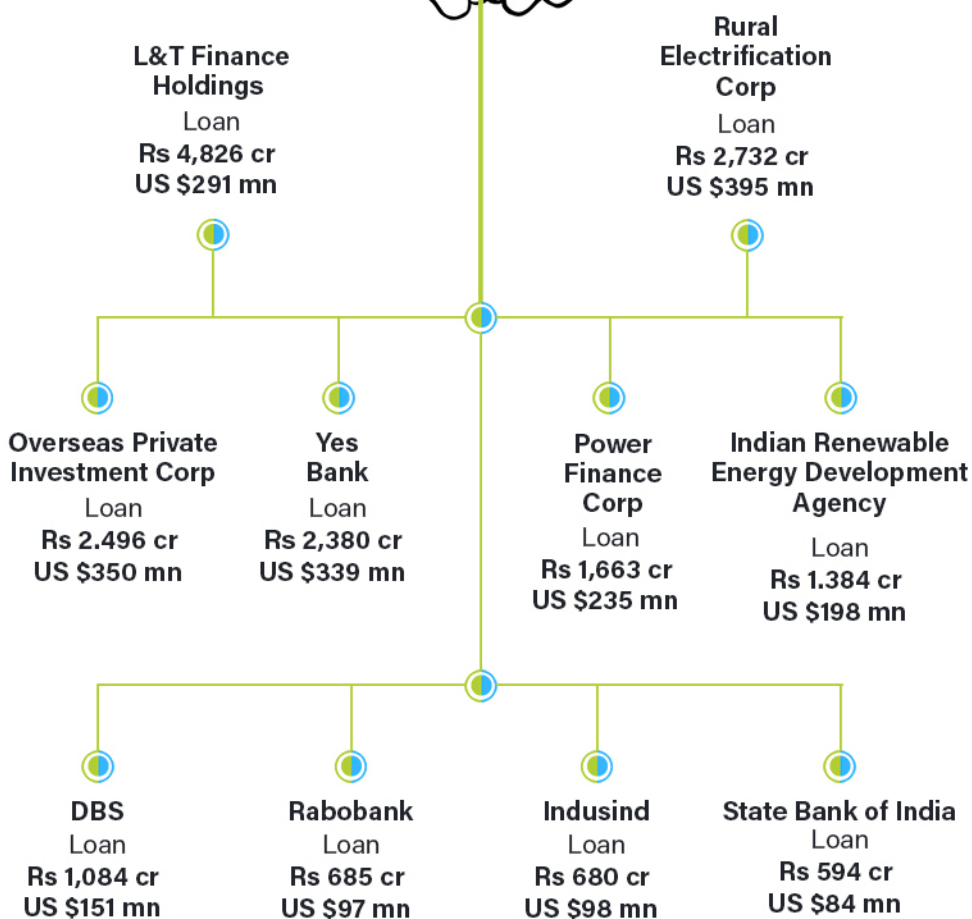
The majority of renewable energy loans are to build new projects

Of the Rs 22,971 crore that went into renewable energy, **Rs 18,569 cr (US\$ 2,589 mn)**, or 81%, was designated as primary financing. This was particularly prevalent for solar PV, where **91%** of all loans were for primary financing purposes. **primary financing accounted for 58%, or Rs 4,008 cr (US\$ 566 mn)**, of all wind loans.

5.2

State-owned financial institutions increase renewable lending footprint

Private commercial banks continued to dominate renewable energy lending, but in 2019 majority state-owned financial institutions significantly increased their lending compared to previous years. Similar to 2018, **L&T Finance Holdings** was the main lender to renewable energy projects. This year, however, **majority state-owned banks provided 24% of renewable financing**, up from 9% in 2018. A large newcomer was the Overseas Private Investment Corporation, which with **one US\$ 350 million loan contributed to 11% of all renewable lending**.



5.3

TOP 5 Renewable Projects

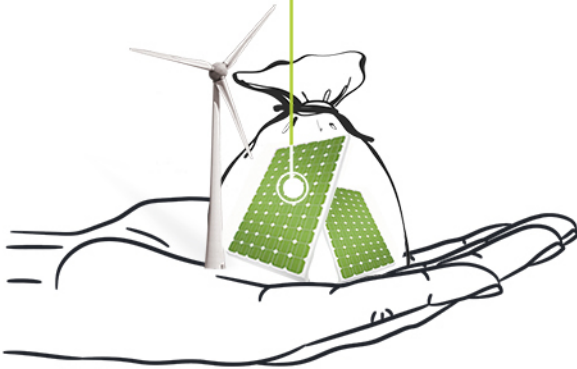
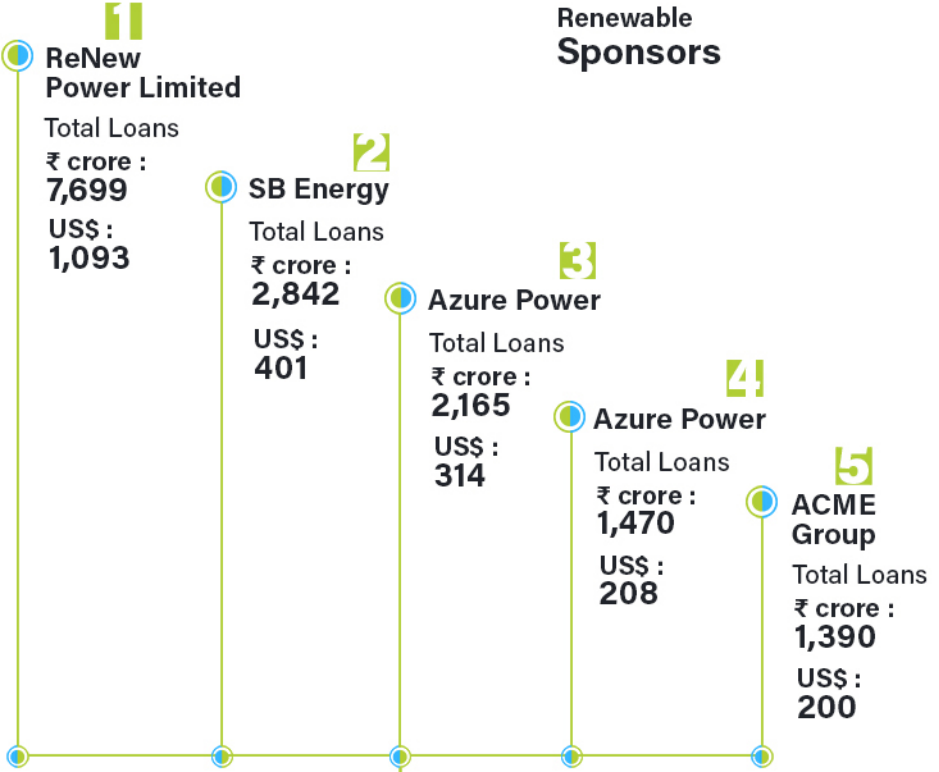
Project	Sponsor	Capacity (MW)	Loan (₹ cr)	Loan (US\$ mn)
1 SECI Solar PV Rajasthan	Azure Power	600	2,165	314
2 SECI Wind Gujarat	ReNew Power	400	1,931	272
3 Ananthapura-mu Solar PV	SBG Cleantech	250	1,107	158
4 Bhadla Solar PV	SB Energy	300	1,105	156
5 Anantapur Solar PV	Sprng Energy (Actis Fund)	250	1,036	146

5.4

TOP 5 Renewable Sponsors

ReNew Power, ACME Group and Azure Power all remained in the top five renewable energy sponsors in 2019. ReNew Power more than doubled the loans it secured for new projects compared to 2018 and remained the top sponsor. SB Energy and Actis Fund were new entrants into the **top five list**

TOP 5
Renewable
Sponsors



6 MOST RENEWABLE PROJECTS CONCENTRATED IN FIVE STATES

Of the 29 states in India, this analysis identified renewable energy loans in ten, similar to 2018. The same five states - Rajasthan, Andhra Pradesh, Karnataka, Gujarat and Madhya Pradesh - received the majority of loans (79%).

Although renewable energy financing was down in Karnataka and Madhya Pradesh compared to last year, Rajasthan and Andhra Pradesh saw significant increases in funding. The amount of loans that Rajasthan received increased from **Rs 3,536 cr** in 2018 to **Rs 5,921 cr** in 2019. Likewise, Andhra Pradesh saw renewable energy financing increase from **Rs 2,956 cr** to **Rs 4,406 cr**.

States	Solar (₹ cr)	Wind (₹ cr)	Renewables (₹ cr)	Renewables (US\$ mn)
Rajasthan	5,641	280	5,921	849
Andhra Pradesh	3,832	574	4,406	578
Karnataka	2,511	834	3,345	474
Gujarat	521	2,076	5,921	849
Madhya Pradesh	750	1,150	1,900	272
Maharashtra	94	755	849	121
Telangana	692	0	692	99
Ramananthapuram	302	0	302	99
Tamil Nadu	283	0	283	41
Uttar Pradesh	180	0	180	26
Project Location/ [Ⓢ] State not specified	1,248	1,248	2,496	350

[Ⓢ] OPIC gave ReNew Power a loan worth Rs 2,496 crore (US\$ 350 million) for future solar and wind projects. Locations and project details were not provided. As such, this analysis assumed an even split between solar and wind.



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