COAL VS. RENEWABLE

FINANCIAL ANALYSIS

INDIA | DECEMBER 2021

CLIMATE TRENDS

CFA
Centre for Financial Accountability

December 2021

Climate Trends is a Delhi-based data-driven strategic communications initiative that works towards building awareness around climate crisis and solutions. We focus on building the understanding of the public and the media on themes of climate change and energy transition.

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METHODOLOGY

This analysis assessed 42 project finance loans across 38 coal and renewable energy projects in India that reached financial close between 1 January 2020 and 31 December 2020. Renewable energy projects are defined as either hydroelectric, geothermal, wave, wind or solar power projects. Total lending amounted to **INR 32,897 crore (USD 4,435 million), of which 74% flowed to renewable energy projects**. Total capacity across all coal and renewable projects identified was 7.5GW.

Deals were initially identified on at least one of three subscription-based financial databases: Bloomberg Professional, IJ Global and Refinitiv Eikon. Following identification, each deal was cross-referenced across these databases. Thereafter, deals were corroborated with various resources, including company records, market disclosures and media reports. Where information of the deal was inconsistent, a decision was made to determine which sources were the most reliable to accurately reflect the size and nature of the deal.

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) 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, this analysis used the rate of the closest available date.

This analysis is not meant to be an exhaustive list of all power loans in India. Rather, it provides a snapshot of the project finance landscape for coal and renewable energy. This analysis builds on and refers to previous iterations of this report in 2017, 2018 and 2019.

1. INTRODUCTION

At COP26, India announced its objectives to reach **net zero by 2070**. In addition, the country aims to install 500 GW of non-fossil capacity by 2030, 450 GW of which would come from renewable energy sources. India **has set** an ambitious renewable energy capacity target. By the end of the decade, **India aims to rely on non-fossil fuel sources** for close to 60% of its energy needs. Additionally, as part of its commitments, the country intends to cut its **national emissions intensity** by up to 45% by 2030.

India has made impressive progress. As of August 2021, 100 GW of renewable energy capacity **had been brought online** with a further 50 GW under construction and 27 GW under auction. But there is no room for complacency. To more than quadruple its installed capacity by 2030, India will need to invest USD 500 billion annually through 2030, according to the **Institute for Energy Economics and Financial Analysis**.

Lockdowns to deal with the COVID-19 pandemic ground the country to a halt and slowed the pace of renewable energy installations. Only 4.4 GW of renewable energy was commissioned in 2020, BNEF estimates. This is a **steep drop** from 10 GW installed in 2019. Nevertheless, renewables

continue to break records. An auction in November 2020 **yielded a record low tariff** of INR 2/kWh (USD 0.03/kWh). And, as India emerges from the pandemic and returns to growth, the outlook for renewable energy looks bright. Renewable energy installations look set to rebound strongly to nearly 12 GW in 2021.[1] Even with this bounce back, it seems India will be hard pressed to hit its 175 GW target.

However, despite its renewable efforts, India continues to bring online significant coal capacity. About 34 GW of coal is **currently under construction**, and the country has about 21 GW in its pre-construction pipeline (6% of the global pipeline). Worryingly, **the stranded risk** of these assets is significant. As the growth in India's energy demand slows, and the number of renewable energy installations rises, the utilisation rate of coal plants will continue to decline. As such, their **economics will deteriorate further**. Increasingly, renewable energy will not only capture demand growth in India, but will replace installed thermal capacity.

1. BNEF, "1H 2021 India Renewables Market Outlook", 19 March 2021. Accessed via Bloomberg Network.

2. SUMMARY OF FINDINGS

More money went to renewables than coal for the third year in a row. In 2020, **74% of the value of the loans went to renewable energy projects** and **26% to coal power plants**.

Primary financing—funding allocated to construct new projects—continued to dominate the project financing landscape in India. Over **88% of all deals were categorised as primary financing** deals, with refinancing constituting the remaining 12%.

After two years of decline, total coal lending **grew 40%** from 2018 levels to **INR 8,520 crore (USD 1,156 million)**. Nevertheless, this is still over **85% lower** than the **INR 60,767 crore (USD 9,350 million)** this report identified in 2017. In other words, coal lending has remained at severely depressed levels. In addition, the number of coal projects financed continued to decline. While in 2019 two projects received funding, only **one project with 1.32 GW of capacity was financed in 2020**.

Majority state-owned banks emerged as the lenders of last resort for coal as private banks shunned the sector.

Unlike previous years, when commercial banks provided a significant share of coal lending, in 2020 **100% of coal financing** came from the Power Finance Corporation (PFC) and the Rural Electrification Corporation (REC). They provided **INR 8,520 crore (USD 1,156 million)** in loans. All of this was designated as primary financing.

A total of **INR 24,376 crore (USD 3,240 million)** went to renewables projects in 2020, all of which were solar and wind—a **6% year-on-year increase** from 2019. Solar PV accounted for **81% of renewable energy deals** and **57% of all deals**.

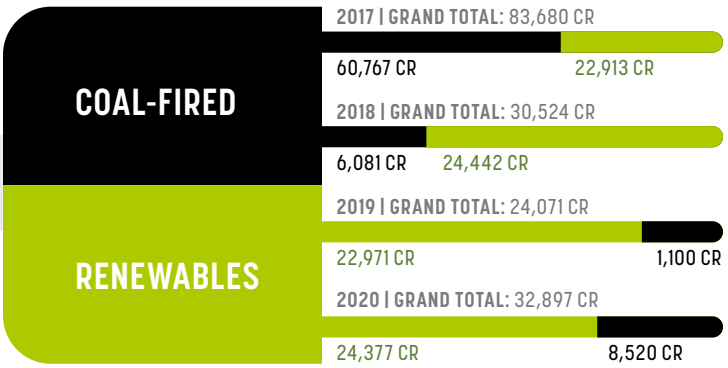
Among renewable energy deals, **84% were identified as primary financing**. This amounted to **INR 20,548 crore (USD 2,761 million)** in loans, more than an 11% year-on-year increase from 2019.

Cumulatively, commercial banks supplied **INR 13,731 crore (USD 1,851 million)** to renewable energy projects, representing the **majority (56%)** of such loans. Yet, state-owned actors continued to play a significant role. The State Bank of India was the **single largest** renewable energy lender, pouring **INR 2,577 crore (USD 347 million)** into the sector—**11%** of all renewables loans.

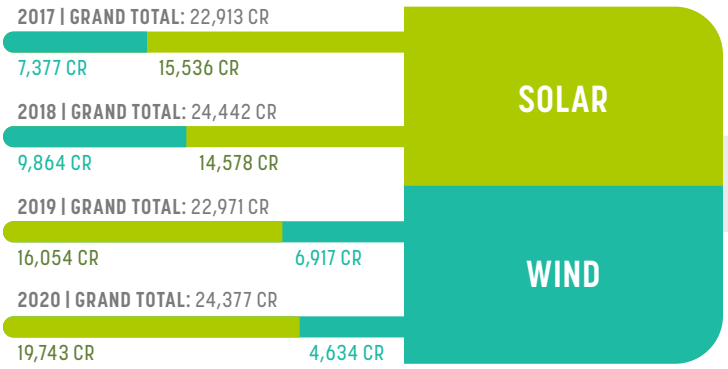
Two states, **Rajasthan and Gujarat**, attracted **INR 18,671 crore (USD 2,507 million)**, or **77%**, of all renewable energy loans. As was the case in 2019, Bihar was the only state that secured lending for a coal-fired power plant.

3. PROJECT FINANCING TO DIFFERENT TYPES OF ENERGY PROJECTS, 2017–2020

RENEWABLES VS. COAL FINANCE (INR, CRORES)



SOLAR VS. WIND FINANCE (INR, CRORES)



4. WHO IS LENDING TO COAL?

In 2020, there were only two banks that provided a total of **INR 8,520 crore (USD 1,156 million)** in loans to a single coal-fired power project. Both banks are majority state-owned financial institutions, namely the PFC and REC (note REC is now a subsidiary of PFC). The retreat of commercial banks from coal financing is significant. In 2018 and 2019, commercial banks financed 35% and 86% of coal loans. The loans in 2020 represent a significant increase in coal lending, the first for three years—the amount has increased by 40% since 2018. Nevertheless, coal lending in 2020 was still 85% lower than the INR 60,767 (USD 9,350 million) loaned in 2017.

LOANS

4,260 CR
USD 578 M
POWER FINANCE CORPORATION (PFC)

4,260 CR
USD 578 M
RURAL ELECTRIFICATION COMMISSION (REC)

The financial situation of India's coal fleet has deteriorated significantly over the past several years, weighing down India's electricity sector. While about 5 GW of new coal-fired capacity **has come online annually** over the last few years, energy demand has started to plateau. Consequently, the utilisation rates of coal-fired power plants have dropped dramatically, from **73% in 2011** to just below **60% in 2019**. The onset of the COVID-19 pandemic pushed this down further to **53%**. Lower utilisation rates push up operating costs and make coal power generation more expensive. The coal fleet has also added significantly to the **financial woes of India's electricity distribution companies** (discoms). Long-term power purchasing agreements between the discoms and thermal power plants have locked-in high payments, leading to high levels of debt among discoms. Over time, the debts of discoms have built up to the point where, before the COVID-19 pandemic, only **20% were able to service** their loans. By some estimates, they now owe creditors INR 4,500,000 crore (USD 60 billion), about 30% more than last year.

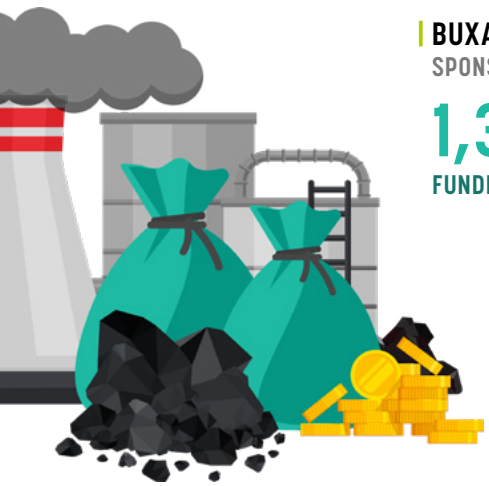
Due to the precarious financial situation of India's thermal power sector, commercial banks have become increasingly reluctant to finance new coal projects. Federal Bank, India's 7th largest commercial bank announced a coal exit policy State lenders like the PFC and REC have emerged as the lenders of last resort. The inability to get projects financed has led to a staggering number of project cancellations—**since 2015, over 326 GW of coal projects (92% of the total pipeline)** have been cancelled.

4.1 ALL COAL LOANS WENT TO BUILD A NEW COAL-FIRED POWER PROJECT

Unlike in 2018 and 2019, where refinancing accounted for the majority of coal lending, this year **100% of the funding was primary financing** to build a new coal-fired power plant. The power plant in question is the **1.32 GW Buxar thermal power plant in Bihar**, owned by SJVN limited. The engineering, procurement and construction contractor, Larsen & Toubro, **won the construction contract in 2019**. The **feasibility of the plant has been questioned** for several years now. It took more than a decade for the project to secure a loan and to begin construction.

4.2 BEING A COAL SPONSOR IS LONELY BUSINESS

SJVN limited was the only coal sponsor that this analysis identified.



BUXAR THERMAL POWER PLANT
SPONSOR: SJVN

1,320 MW
FUNDED CAPACITY

8,520 CR
USD 1,156 M
LOAN

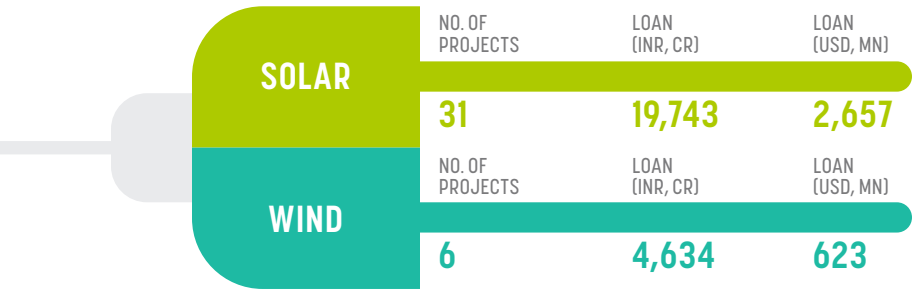
5. WHO IS LENDING TO RENEWABLES?

In keeping with previous years, the number of renewable energy deals far outnumbered those for coal. In 2020, there were **37 renewable energy project financing deals**, which provided a total **INR 24,376 crore (USD 3,240 million)** in loans. This represented 74% of all financing.

Solar energy once more was the renewable energy of choice, accounting for 31 deals. These financed a cumulative **5.18 GW of solar PV**. Though the COVID-19 pandemic proved highly disruptive for the solar sector—installations fell to 3.3 GW, the lowest level since 2015—the financial momentum behind it continues to grow. Indeed **solar lending surged 23%** compared to 2019 and **35%** compared to 2018. The **INR 19,743 crore (USD 2,657 million)** that went into solar projects this year accounted for 81% of renewable energy financing and 57% of all the loans identified by this analysis.

Of the 37 renewable energy deals, the remaining six funded **997 MW of wind energy projects**. Wind energy financing has been on a downward trend since 2018, when a total of **INR 9,864 crore (USD 1,414 million)** flowed into wind projects. In 2020, funding fell to INR 4,634 crore (USD 623 million), a 33% year-on-year decline from 2019.

Overall, this comprised 19% of total renewable energy lending in 2020. India's wind sector has struggled in recent years due to challenges associated with grid connection and land procurement. In 2020, only 1.1 GW of wind was installed, the smallest amount since 2004.



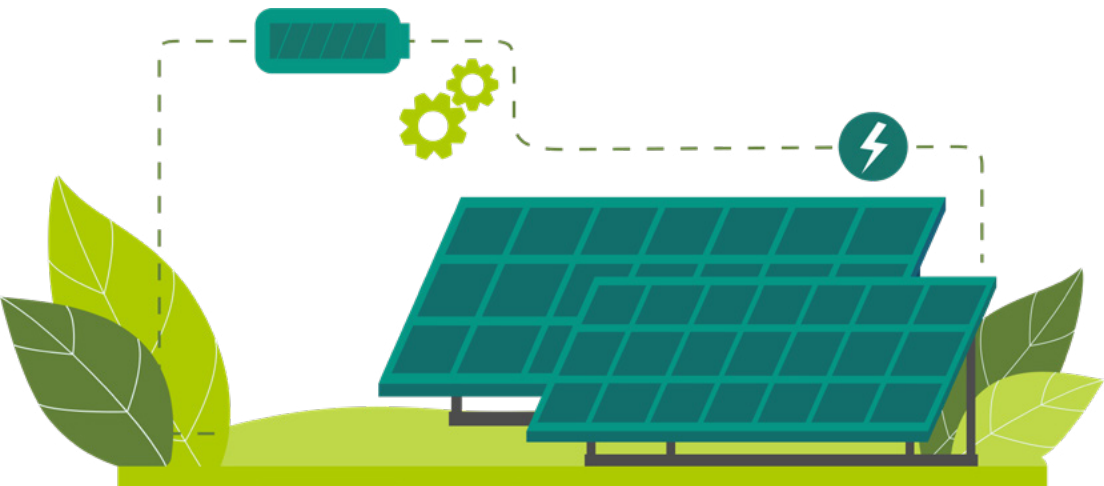
5.1 THE MAJORITY OF RENEWABLE ENERGY LOANS WERE TO CONSTRUCT NEW PROJECTS

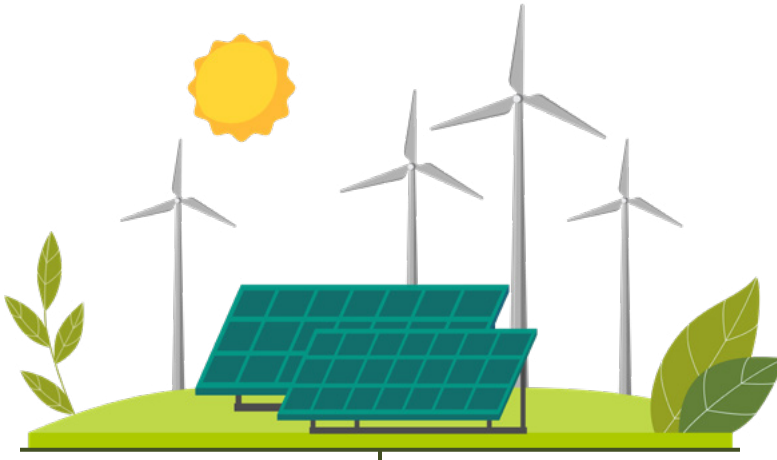
Over **84% of renewable energy loans**, equal to **INR 20,548 crore (USD 2,761 million)**, was designated as primary financing. **For solar energy, 80% of financing** was to build new projects, while **100% of loans for wind power** were primary financing instruments. Refinancing existing projects constituted **INR 3,829 crore (USD 519 million)** in funding, 16% of total renewable energy funding.

5.2 STATE-OWNED LENDERS ARE BECOMING INCREASINGLY SIGNIFICANT PROJECTS

In terms of renewable energy financiers, 2020 followed a similar pattern to 2019. The majority of loans (56%) came from commercial banks, but the share of funding provided by state-owned and government banks **remained high at 19%** —previously, this was **24% (2019)** and **9% (2018)**. Notably, the State Bank of India was the single largest lender to renewable energy projects, providing **INR 2,577 crore (USD 347 million)** in loans, a **334% increase from 2019**. The Power Finance Corporation came in second with **INR 2,160 crore (USD 289 million)**, almost double the amount it loaned in 2019. Though it remained a significant lender, L&T Finance Holdings' lending dropped 60% from 2019 to **INR 1,902 crore (USD 254 million)**.

The prevalence of state-owned financial institutions suggests that the COVID-19 pandemic suppressed private finance more than it did public finance. Additionally, funding was more evenly spread out across the numerous lenders than in previous years.





STATE BANK OF INDIA
LOAN
₹2,577 CR
US$ 347 M

POWER FINANCE CORPORATION
LOAN
₹2,160 CR
US$ 289 M

L&T FINANCE HOLDINGS
LOAN
₹1,902 CR
US$ 254 M

HSBC HOLDINGS
LOAN
₹1,737 CR
US$ 240 M

US INTERNATIONAL DEVELOPMENT FINANCE CORPORATION
LOAN
₹1,657 CR
US$ 219 M

INDUSIND BANK
LOAN
₹1,172 CR
US$ 160 M

NATIONAL INVESTMENT AND INFRASTRUCTURE FUND
LOAN
₹1,157 CR
US$ 157 M

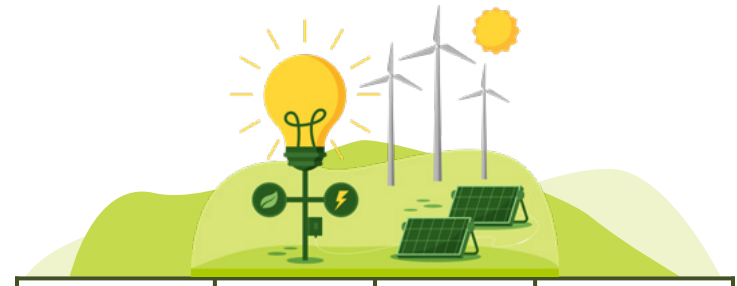
AXIS BANK
LOAN
₹1,030 CR
US$ 140 M

STANDARD CHARTERED BANK
LOAN
₹1,014 CR
US$ 136 M

SOCIETE GENERALE
LOAN
₹862 CR
US$ 116 M

5.3 TOP FIVE RENEWABLES PROJECTS

The size of renewable energy projects being built is increasing. In 2019, the average size of the top five solar or wind farms was 360 MW. In **2020, this rose to 420 MW**. In fact, two mega-solar projects, both in Rajasthan, each have 600 MW of capacity. There was only one such mega project in 2019.



PHALODI-POKHRAN SOLAR PV [SOLAR]
SPONSOR: SB ENERGY
600 MW
LOAN
₹2,525 CR
US$ 336 M

BIKANER SOLAR PV
[SOLAR]
SPONSOR: AZURE POWER
600 MW
LOAN
₹2,165 CR
US$ 290 M

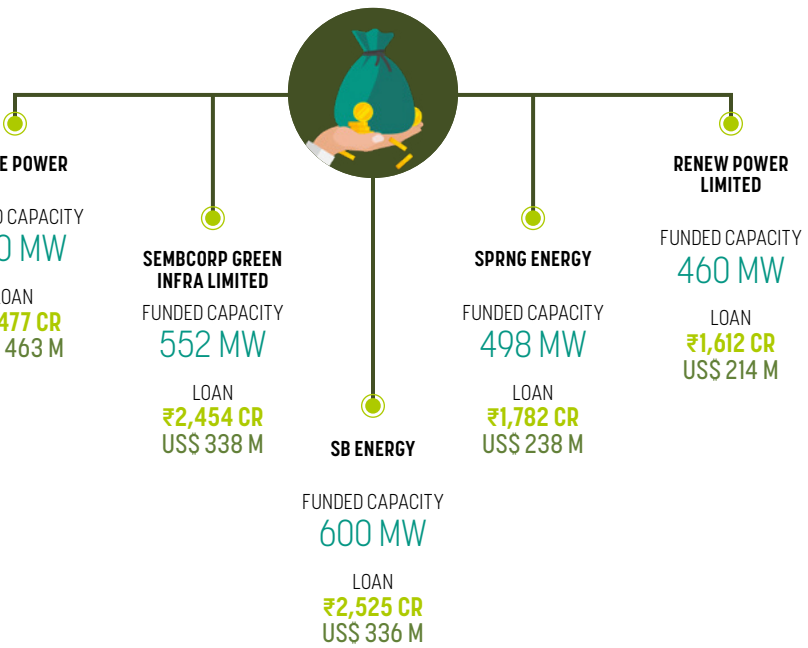
BHADLA SOLAR PV
[SOLAR]
SPONSOR:
HERO FUTURE ENERGIES
300 MW
LOAN
₹1,330 CR
US$ 180 M

KUTCH WIND
[WIND]
SPONSOR:
ALFANAR PRINCIPALS
300 MW
LOAN
₹1,477 CR
US$ 290 M

KUTCH WIND 2
[WIND]
SPONSOR:
SEMBCORP GREEN INFRA LIMITED
300 MW
LOAN
₹1,410 CR
US$ 187 M

5.4 TOP FIVE RENEWABLES SPONSORS

Azure Power, SB Energy and ReNew Power Limited are once again among the top renewable energy sponsors in 2020. Azure Power, backed by the Canadian pension fund Caisse de Dépôt et Placement du Québec, topped the list with **INR 3,477 crore (USD 463 million)** in loans. Yet lending secured by ReNew Power Limited, which was the top sponsor in 2019, dropped **80% to INR 1,612 crore (USD 214 million)**. This has largely been due to ReNew Power Limited using **other ways to raise funds**, such as issuing bonds. Sembcorp Green Infra Limited, backed by Singapore's Sembcorp Group, has also become a major international sponsor in India's renewable energy market.



5.5 RENEWABLE ENERGY LENDING IS HIGHLY CONCENTRATED

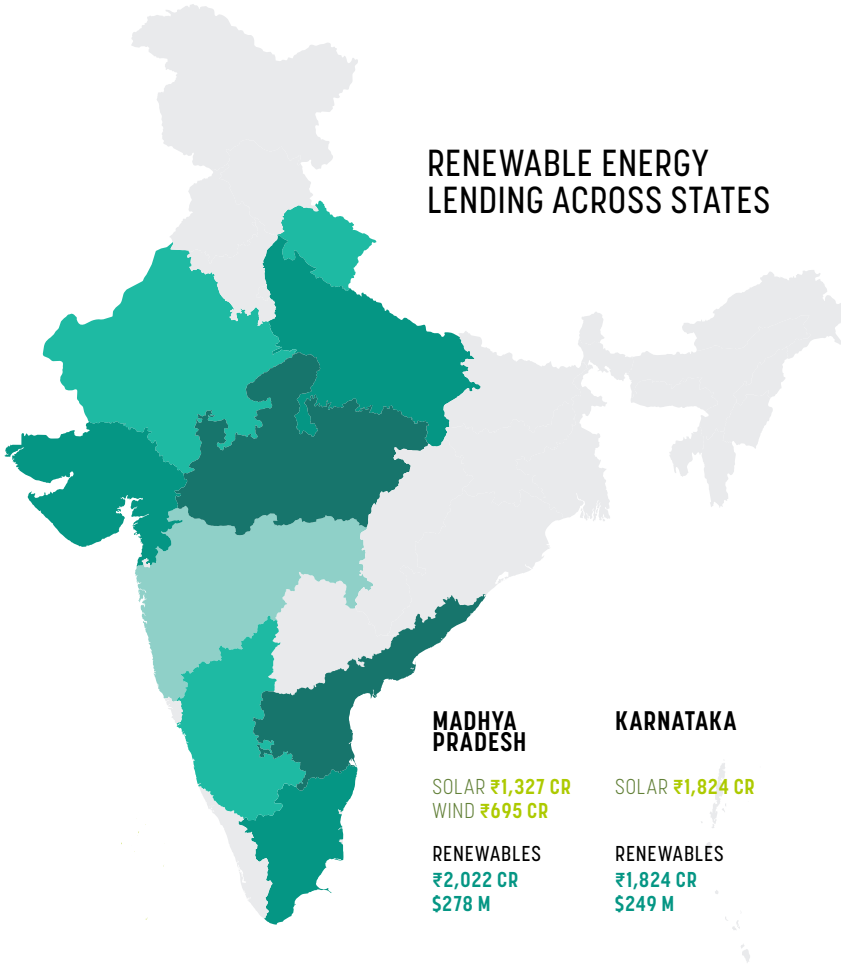
Two states accounted for 77% of all renewable energy lending. **Rajasthan (43%)** and **Gujarat (34%)** attracted a total of **INR 18,671 crore (USD 2,507 million)** in financing. Lending in these states increased significantly compared to last year.

In Gujarat, the amount of lending surged **215% from 2019 to INR 8,192 crore (USD 1,107 million)**. Wind energy financing was particularly concentrated in the state, comprising 85% of the value of all wind deals across the country. The reason for this is that Gujarat has high wind speeds and a favourable policy environment.

Rajasthan also witnessed a **77% increase** in renewable energy project financing. Lending rose to **INR 10,479 core (USD 1,400 million)**.

This increase in the concentration of renewable energy lending has more to do with a significant rise in lending in Rajasthan and Gujarat than a plunge in lending in the other states.

RENEWABLE ENERGY LENDING ACROSS STATES



MADHYA PRADESH

SOLAR ₹1,327 CR
WIND ₹695 CR

RENEWABLES
₹2,022 CR
$278 M

KARNATAKA

SOLAR ₹1,824 CR

RENEWABLES
₹1,824 CR
$249 M

RAJASTHAN

SOLAR ₹10,479 CR

RENEWABLES
₹10,479 CR
$1,400 M

GUJARAT

SOLAR ₹4,253 CR
WIND ₹3,939 CR

RENEWABLES
₹8,192 CR
$1,107 M

MAHARASHTRA

SOLAR ₹1,279 CR

RENEWABLES
₹1,279 CR
$172 M

ANDHRA PRADESH

SOLAR ₹258 CR

RENEWABLES
₹258 CR
$35 M

UTTAR PRADESH

SOLAR ₹218 CR

RENEWABLES
₹218 CR
$30 M

UTTARAKHAND

SOLAR ₹91 CR

RENEWABLES
₹91 CR
$12 M

TAMIN NADU

SOLAR ₹14 CR

RENEWABLES
₹14 CR
$2 M

COAL VS. RENEWABLES

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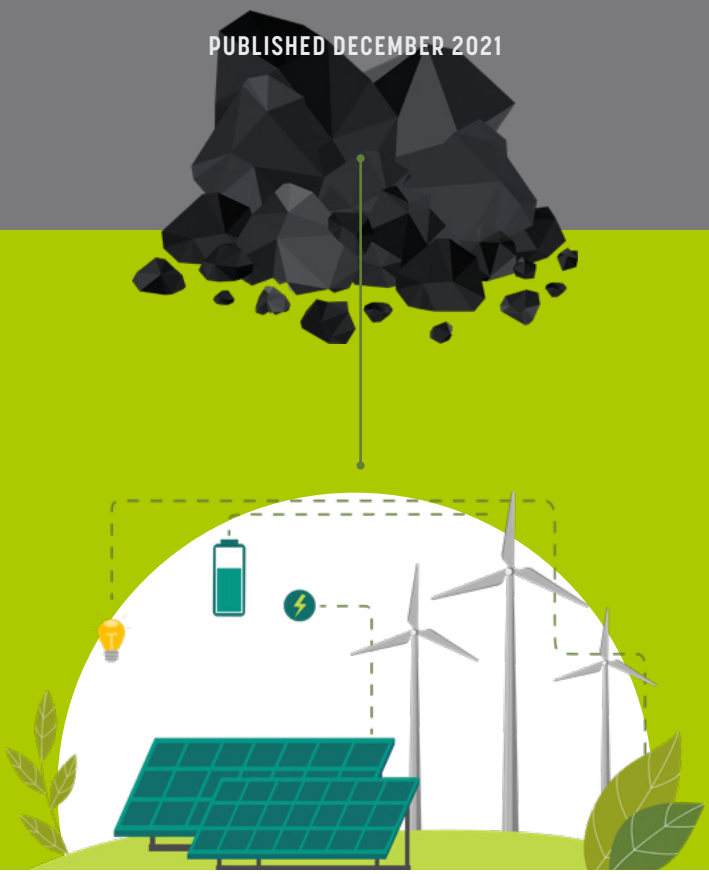

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