

India Enters an Unnecessary Coal Plant Permitting Spree in 2023

PURSUING NEW COAL PLANTS WILL DIVERT SCARCE RESOURCES AND HINDER INDIA'S RENEWABLE ENERGY TRANSITION

Summary

- Power companies and the Ministry of Environment, Forest and Climate Change's Expert Appraisal Committee have ushered a new coal permitting spree, with three non-captive coal plant expansions (3.9 gigawatts, or GW) receiving permits in the first five months of 2023 alone, up from zero the year before. Seven other coal plant proposals (7.6 GW) also moved forward in the permitting process by receiving Terms of Reference, and two additional coal plants (2.9 GW) appeared under consideration for the first time this year.
- India has an estimated 65.3 GW of proposed, on-grid coal capacity under active development: 30.4 GW under construction and 34.9 GW in pre-construction (14.4 GW permitted, 11.8 GW pre-permit, and 8.8 GW announced). This capacity represents nearly a third of the country's operational on-grid, non-export coal capacity ([212.5 GW](#)).
- Based on five-year projections in India's latest National Electricity Plan (NEP), more than 8 GW of non-captive coal-fired power plant capacity in active construction is unnecessary, and all 34.9 GW of the pre-construction capacity is also not needed.
- Under the NEP's ten-year coal projections, there is no need for any new projects to enter the pre-construction pipeline. If all pre-construction coal capacity was to come online, and 2.1 GW was to retire as projected in the NEP, installed on-grid coal capacity would reach 275 GW, far exceeding the NEP's projected requirement of 259.6 GW in FY2032 under the base case (65.3 + 212.5 - 2.1 GW).
- Under more nuanced demand projections, the case to temper new coal power development is even clearer.
- New coal power projects are unnecessary to meet demand and would come with significantly higher socio-economic and environmental costs than clean energy.

Three Coal Plant Expansions Secured Permits in 2023

Even though the country [sent mixed signals](#) regarding its future coal use in 2022, zero non-captive coal plants were granted environmental

clearances over that year, in line with the [decreasing number](#) of new permits generally awarded in India in [recent years](#).

However, as Table 1 demonstrates, 2023 saw companies and the Ministry of Environment, Forest and Climate Change's Expert Appraisal Committee enter a new coal permitting spree, with three non-captive coal plant expansions (3.9 GW) receiving permits, i.e. Environmental Clearances, in the first

five months of 2023 alone. Seven other proposals (7.6 GW) also moved forward in the permitting process by receiving Terms of Reference, and two additional projects (2.9 GW) appeared under consideration for the first time this year. These projects span both public and private sector power companies.

TABLE 1. Coal Plant Permitting Status Changes from January to June 1, 2023

State	Proposed Units	Capacity	January 2023 Status	June 1, 2023 Status	Permitting details
Chhattisgarh	Hasdeo Thermal Power Station , Expansion Unit 1	2 x 660 MW	Announced	Pre-permit	Terms of Reference dated April 24, 2023 (* foundation stone July 30, 2023)
	Lara Super Thermal Power Project , Units 3-4	2 x 800 MW	Pre-permit	Permitted	Environmental Clearance recommended by EAC on May 12, 2023 (Letter dated July 17, 2023)
	Athena Chhattisgarh (Singhitarai) power station , Units 1-2	2 x 600 MW	Cancelled (Construction Hold)	Construction (Pre-permit)	New Terms of Reference dated May 10, 2023
Haryana	Deenbandhu Chhotu Ram Thermal Power Plant , Unit 3	800 MW	Announced	Pre-permit	Terms of Reference dated March 24, 2023
Madhya Pradesh	Bandhaura Ultra Super Critical Thermal Power Plant (Mahan), Expansion Units 1-2	2 x 800 MW	Pre-permit	Permitted	Environmental Clearance recommended by EAC on May 12, 2023 (presumed permitted, no Letter identified)
	MP Amarkantak power station , Unit 6	660 MW	Pre-permit	Permitted	Environmental Clearance dated May 8, 2023
Odisha	Darlipali power station , Unit 3	800 MW	Announced	Pre-permit	Terms of Reference dated April 17, 2023
Rajasthan	Chhabra Thermal Power Project , Units 7-8	2 x 660 MW	Announced	Pre-permit	Terms of Reference recommended by EAC on June 1, 2023 (Letter dated July 17, 2023)
	Kalisindh Thermal Power Station , Expansion Unit	800 MW	Announced	Pre-permit	Terms of Reference dated March 24, 2023
West Bengal	Raghunathpur Thermal Power Station , Units 3-4	2 x 660 MW	Announced	Pre-permit	Terms of Reference dated March 31, 2023

Source: Global Energy Monitor, [Global Coal Plant Tracker](#) wikis.

The two new announcements in the first five months of 2023 involved a proposed expansion at the [Obra Thermal Power Station](#) and potentially at NTPC's [Meja Thermal Power Project](#):

- [Obra-D](#) (2 x 800 MW): The Uttar Pradesh government and NTPC reportedly [signed](#) a Memorandum of Understanding in February 2023 at the Global Investors Summit, in reaction to increased power demand in the previous summer. In July 2023, the government of Uttar Pradesh appeared to [approve](#) the two-unit proposal.
- [Meja](#) (2 x 660 MW): According to April 2023 reporting, NTPC [expects](#) to award construction orders for the new expansion in FY 2023-24. However, with no other public statement or permitting information about the project, it seems unlikely that any construction order could materialize on that timeline. The proposal is classified as newly “announced,” but considered uncertain.

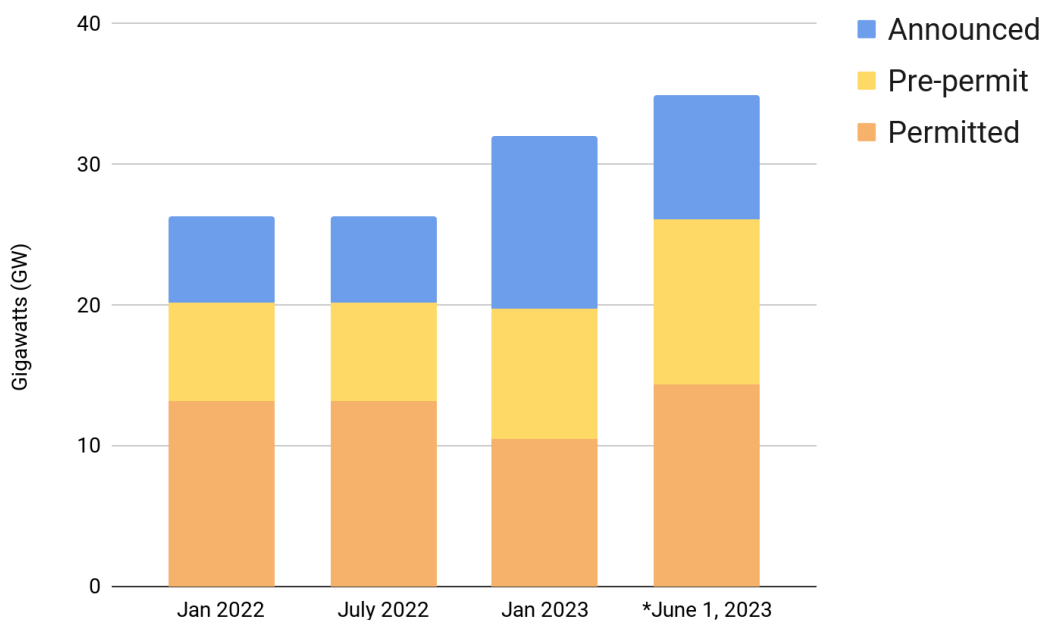
From January 2023 through May 2023, no proposed capacity was found to move from a pre-construction or construction status to a shelved status, and only two proposed plant expansions went from being presumed shelved to presumed canceled, after no public announcements or updates for 4 years ([Ramagundam](#) Stage V & [Hiranmaye Haldia](#) Unit 3).

The highly contested [JSW Utkal Steel power station](#), a captive power project, is the only proposal known to have faced a status setback this year, moving from permitted to pre-permit: in March 2023, a National

Green Tribunal (NGT) order [suspended](#) the project’s environmental clearance and the Odisha High Court [stayed](#) land acquisition until forest rights issues are resolved.

Given current financial and other challenges, it is true that many projects may not see the light of day. However, India must realize that building clean power is not enough: it also needs to actively plan for a rapid phaseout of coal power, starting with an end to new coal.

FIGURE 1. Uptick in India's Proposed Coal Plant Capacity (2022-2023)



Source: [Global Coal Plant Tracker](#) (Jan. 2023 release & June 1, 2023 revisions); excludes construction, shelved, and cancelled capacity; only includes on-grid/non-captive proposals

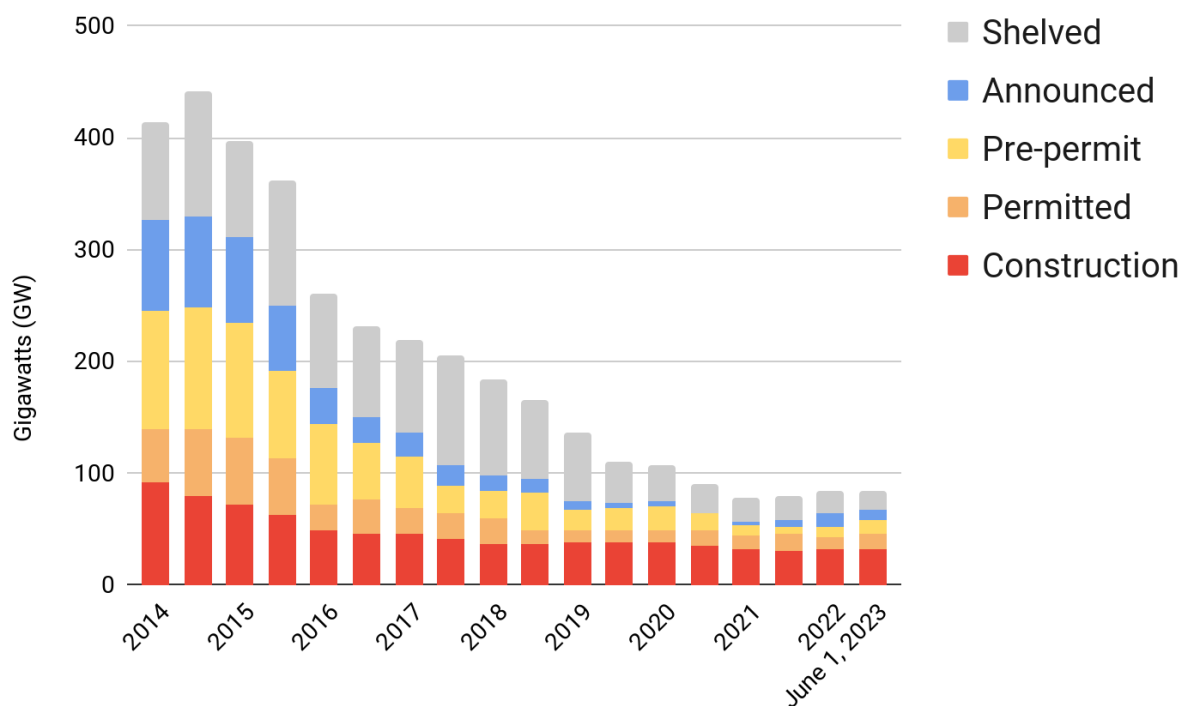
India Must Continue its Downward Trend in Proposed Coal, in Line with Global Trends

Despite the uptick in active coal proposals post-COVID, India's pipeline of announced, pre-permit, and permitted coal capacity (captive and non-captive) has shrunk by a staggering 85% since the end of 2014, from 250 GW to 36 GW. This drop is in line with the [global trend away from new coal](#).

The challenges coal proposals have faced in the last

decade remain, and considering new projects is a risky detour from the necessary coal-to-clean transition. Few, if any, coal units are entering construction in India, and the country must ensure the uptick in active proposals and permitting developments are just a blip on the way to a day with zero new coal under consideration.

FIGURE 2. India's Proposed Coal Plant Capacity (2014-2023)



Source: [Global Coal Plant Tracker](#) (Jan. 2023 release & June 1, 2023 revisions); includes shelved capacity, but excludes cancelled capacity; includes all captive and non-captive capacity

For India to achieve its clean energy ambitions, it is crucial to put the brakes on new coal plant announcements and approvals, as well as to reassess every new coal plant under consideration. Any prioritization of coal power to address short-term challenges or satisfy other interests poses a threat to an efficient energy transition. Pursuing new coal projects diverts financial support and judicious

planning from renewable energy projects, resulting in a lock-in of resources that could otherwise be invested in a true coal-to-clean strategy.

The same is true for coal mining. The Coal Ministry continues in tandem to open new coal blocks for commercial auction. The temporary coal shortage last year emboldened the Indian government to

press ahead with plans to develop 99 new coal mine projects with production of 427 million tonnes per year. In 2023, a tranche of new coal auctions continued to acquire bidders. As Global Energy Monitor analysis [highlighted](#), the prospect of mining

new coal blocks is in strategic conflict with the government’s pledge to achieve net zero emissions, especially when 36% of operating capacity at existing mines goes unused.

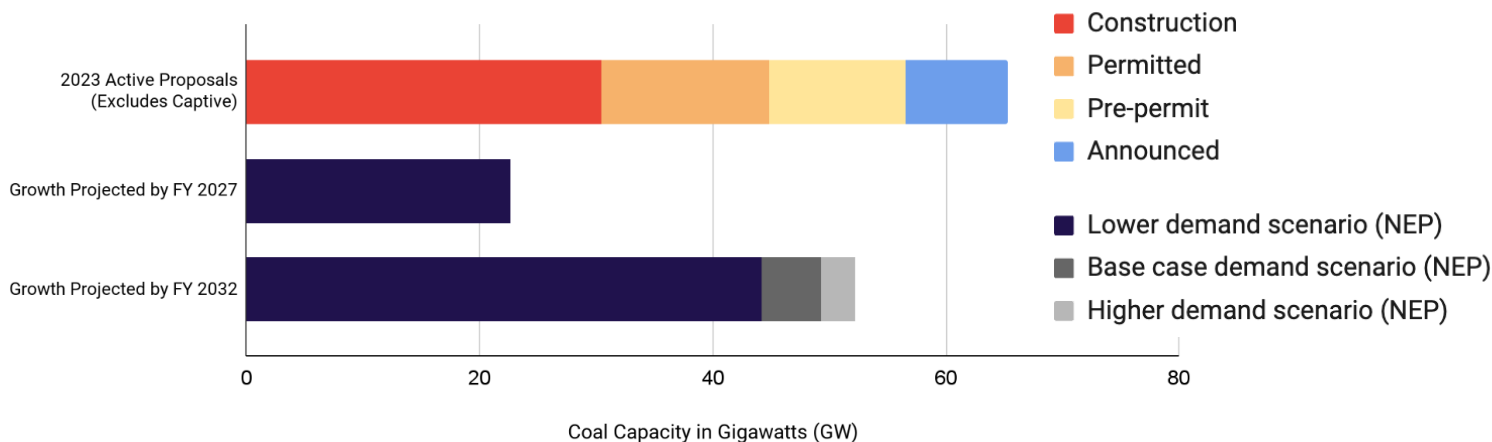
Current Proposals Overshoot the Already Significant Coal Capacity Expansion Projected In the Country’s Energy Plan

In May 2023, India’s Central Electricity Authority (CEA) released the final version of its new 2023 [National Electricity Plan](#) (NEP). The NEP assesses the capacity additions needed to meet the projected demand in FY2027 and FY2032 under various scenarios. Despite recent headlines that the NEP “pauses” new coal plants for five years, the plan in fact [calls](#) for 46 to 54 GW of new coal, including 26.9 GW under construction and then additional capacity on top of that. (The growth here is benchmarked against the installed coal capacity of 210.4 GW listed in the plan, and 2.1 GW of projected retirements.)

According to the Global Coal Plant Tracker, India has an estimated 65.3 GW of proposed, on-grid/non-captive coal capacity under active development: 30.4 GW under construction and 35 GW in pre-construction (14.4 GW permitted, 11.8 GW pre-permitted, and 8.8 GW announced). (As noted

above, according to the NEP, a lower 26.9 GW of coal capacity was identified as under construction.) These figures are somewhat conservative as India has another 17.3 GW of proposed on-grid coal capacity categorized as “shelved,” meaning no progress has been identified on the proposed projects for at least two years, but not necessarily that the projects are no longer under development or consideration, or couldn’t be revived. In addition, another 571.5 GW of proposed on-grid coal capacity is categorized as “cancelled,” meaning either a cancellation announcement was made or no progress has been identified on the proposal for at least four years. (These categories include some of the projects the Central Electricity Authority defines as “Under construction TPPs where work is on hold / not likely to be commissioned” in [monthly Broad Status Reports](#), such as Essar’s [Tori power station](#).)

FIGURE 3. India's Proposed Coal Capacity overshoots NEP's Projected Coal Capacity Growth



Source: [Global Coal Plant Tracker](#) (Jan. 2023 release & June 1, 2023 revisions); Active proposals exclude capacity categorized as shelved & cancelled, 2.2 GW of captive coal proposals, and [Godda](#)’s capacity set to export electricity to Bangladesh. Unless noted, this briefing uses 212.5 GW as the benchmark for on-grid installed coal capacity per CEA’s June 2023 [data](#) (205.9 GW + 6.6 GW) and assumes 2.1 GW of retirements by FY 2032 per NEP.

As Figure 3 demonstrates, the 30 GW of on-grid coal under construction is more than the coal capacity requirement projected by NEP for FY2027. The 44 GW of coal capacity that is under construction or permitted is also more than the requirement projected by NEP in the next decade under its low demand scenario. Assuming all 65 GW of active proposals were to move forward, India's new coal capacity would overshoot the requirement projected by NEP under every demand scenario considered, meaning a huge capacity of already planned projects and any new project to join the pipeline from this point forward would be a grave mistake.

In other words, there is no need for any uptick in proposed coal capacity, only a contraction.

The underlying issues affecting the "stressed" power assets described above have generally persisted over the years, such as cost overruns, coal supply disruptions, and a lack of power purchase agreements. Even though it is unlikely that the presumably shelved and cancelled projects will move forward, a few projects could also be on the table under a different set of assumptions or developments. In fact, as IEEFA recently argued, in certain circumstances, it may make more sense to [revive stranded coal projects](#) than to invest in new fossil-fuel-based capacity.

What's more, a review of both the latest NEP and Optimal Generation Mix demonstrate that inflated peak demand projections are leading to overestimations of total coal power capacity needed by FY2032, a finding in line with [previous analyses](#).¹

¹ The various NEP capacity additions estimated under various scenarios are based on electricity demand projections in the [20th Electric Power Survey of India](#) (EPS 20) published in 2022. The NEP assesses the capacity additions needed to meet the projected demand in FY2027 and FY2032 under various scenarios. Separately, the Central Electricity Authority's latest [Optimal Generation Mix](#) (OGM 2023) also provides insight into coal demand using EPS20. The expected peak demand under the growth projected by the Electric Power Survey's Moderate

It is therefore not prudent to take the growth projected by the NEP at face value in planning for a swift coal-to-clean energy transition and high stakes investments. Assuming a more reasonable coal capacity requirement would make for an even clearer case that current proposals must be re-evaluated. But assuming that the NEP is sensible for the sake of exercise, pursuing new coal proposals is unnecessary and diverts time and resources that must go to India's renewable energy transition.

If realized, unnecessary added capacity will lead to a build-up of stranded assets and lead to suboptimal utilization of power generation capacity. This will lead to higher costs to utilities and consumers and impede India's renewable energy targets and ambitions.

Scenario and under a business-as-usual growth rate are similar and generally in line with actual growth to date. However, the Electric Power Survey's base case which underlies the recent NEP and OGM projections represents a marked deviation.

Heatwaves Require Careful Near- and Long-term Planning

India faces very real energy crunches that [require](#) careful near- and long-term planning. Rising temperatures increase the challenge of meeting electricity demand while also decarbonising the power sector. In March 2023, for the second year in a row, India [invoked](#) an emergency law to force power plants that run on imported coal, which are typically uncompetitive compared to power generated from cheap domestic coal, to maximize output ahead of an expected surge in power demand this spring and summer. As a CREA [analysis](#) highlighted in May 2022, the emergency measures reflect two things: First, the country has enough power generation capacity; and second, the domestic coal based power stations aren't stocking enough coal before summer peaks and monsoons when demand is high and there is restricted coal mining and transport capacity. In other words, related power deficits are the result of a management crisis rather than a fuel shortage or power generation infrastructure shortage.

The improved management measures implemented by the government last year are generally resulting in higher coal stocks, relieving power supply and demand issues. On June 20, 2023, the country's coal fleet reportedly had enough coal for the next 13 days, compared to just 9 days at the same time last year.

Both figures are lower than the [normative](#) coal requirement, a sign of the challenges the country continues to face. However, the higher coal stock compared to last year is also a testament to the various measures by power generators, the Ministry of Coal, Coal India Limited, and the power ministry, as well as to the new renewable energy generation sources quickly coming online. This example is a reminder that with careful planning and management, India can confidently put an end to breaking ground on new coal plants and begin paving the way to phasing down coal.

It's also time for India to supercharge investments in wind and solar, focus on storage and transmission, strengthen energy efficiency requirements, and advance other long term solutions to power shortages and increasing power demand more generally. So many of the problems that new coal may allegedly solve were themselves caused by coal. The only real solution out of this vicious cycle is to plan a swift transition away from dirty energy. How India plans to stay cool and meet increasing power demand in the coming decade will shift energy markets and shape our climate future, and putting an end to new coal plant permits and plants is an essential first step.

G20 Presidency: An Opportunity for Coal-to-Clean Leadership

The Group of Twenty (G20) is [home](#) to 93% of the world's operating coal capacity and 88% of the pre-construction coal capacity. Despite the best efforts of the Indian G20 presidency at the G20 Energy Ministerial in [July 2023](#), G20 energy ministers did not reiterate last year's recognition of the need to accelerate the phasedown of unabated coal generation, and did not make the progress needed to set an unambiguous global goal of at least tripling renewable energy capacity by 2030.

India has the opportunity to push for a stronger outcome and accelerate the global coal to clean energy transition at the G20 leaders' summit in Delhi in September, addressing the twin needs of energy access and energy security. An orderly move towards clean energy will also help confront the climate crisis, raise economic productivity, create jobs, and improve environmental and public health outcomes. Simultaneously investing in both coal and

renewables will only result in a messier energy transition for India.

As the International Energy Agency (IEA) has [found](#), the first net zero milestone is for “no new unabated coal to be approved for development from now forward.” It is time for the country to finalize and implement a bold no-new-coal plan to ensure energy and economic development plans are in line with its climate change and net zero commitments. India’s targets for clean power capacity could enable the country to start phasing down coal before 2030, even assuming power demand growth continues. With the low costs of renewable energy and storage, it is crucial to anticipate the closures of existing coal plants and unprofitable mines to avoid stranded coal assets and unnecessary hardships for coal communities.

It is important to remember that a just transition requires inclusive, transparent, and robust stakeholder engagement. Recent investigations have reported a crackdown on critics of coal, which is a troubling development at a time when India – with the help of the international community – is well positioned to be a just transition leader. India must take steps to ensure that there is adequate and effective communication between decision makers, affected communities, and beyond. Public participation methods, including public hearings, public meetings, and notification procedures, must create the conditions necessary for effective and authentic public participation.

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Background on Global Energy Monitor

Global Energy Monitor (GEM) develops and shares information in support of the worldwide movement for clean energy. By studying the evolving international energy landscape and creating databases, reports, and interactive tools that enhance understanding, GEM seeks to build an open guide to the world's energy system. Users of GEM's

data and reports include the International Energy Agency, United Nations Environment Programme, the World Bank, and the Bloomberg Global Coal Countdown. Follow us at www.globalenergymonitor.org and on Twitter @GlobalEnergyMon

Background on Centre for Research on Energy and Clean Air (CREA)

CREA is an independent research organisation focused on revealing the trends, causes, and health impacts, as well as the solutions to air pollution. We use scientific data, research and evidence to support the efforts of governments, companies and campaigning

organisations worldwide in their efforts to move towards clean energy and clean air. Follow us at www.energyandcleanair.org and on Twitter @CREACleanAir

Background on the Global Coal Plant Tracker

The [Global Coal Plant Tracker](#) is an online database that identifies and maps every known coal-fired generating unit and every new unit proposed since January 1, 2010 (30 MW and larger). Developed by

Global Energy Monitor, the tracker uses footnoted wiki pages to document each plant and is updated biannually.

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