

Boom and Bust Coal

2024

TRACKING THE GLOBAL COAL PLANT PIPELINE

Global Energy Monitor, CREA, E3G, Reclaim Finance, Sierra Club, SFOC, Kiko Network, CAN Europe, Bangladesh Groups, Trend Asia, Alliance for Climate Justice and Clean Energy, Chile Sustentable, POLEN Transiciones Justas, Iniciativa Climática de México, and Arayara



ABOUT THE COVER

“Power Plant Smokestack Demolition” by Ted Shaffray. The smokestack at the former [B.L. England Generating Station](#) was imploded in October 2023. The coal and oil burning power plant in New Jersey, United States, was retired in 2019. The demolition [cleared](#) the way for the waterfront site to enter its next potential role in providing energy to New Jerseyans: As the connection point for several of the state’s [planned](#) offshore wind farms. Copyright 2023 The Associated Press. All rights reserved.



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E3G is an independent climate change think tank with a global outlook. We work on the frontier of the climate landscape, tackling the barriers and advancing the solutions to a safe climate. Our goal is to translate climate politics, economics and policies into action. For more information, visit www.e3g.org.



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Reclaim Finance is an NGO affiliated with Friends of the Earth France. It was founded in 2020 and is 100% dedicated to issues linking finance with social and climate justice. In the context of the climate emergency and biodiversity losses, one of Reclaim Finance’s priorities is to accelerate the decarbonization of financial flows. Reclaim Finance exposes the climate impacts of financial players, denounces the most harmful practices and puts its expertise at the service of public authorities and financial stakeholders who desire to bend existing practices to ecological imperatives. For more information, visit reclaimfinance.org.



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The Sierra Club is America’s largest and most influential grassroots environmental organization, with millions of members and supporters. In addition to protecting every person’s right to get outdoors and access the healing power of nature, the Sierra Club works to promote clean energy, safeguard the health of our communities, protect wildlife, and preserve our remaining wild places through grassroots activism, public education, lobbying, and legal action. For more information, visit www.sierraclub.org.



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SOLUTIONS FOR OUR CLIMATE

Solutions for Our Climate (SFOC) is a nonprofit organization established in 2016 to address the social and environmental impacts of climate change. SFOC conducts research on solutions for reducing greenhouse gas emissions and expanding renewables, and coordinates campaigns with both domestic and international organizations to address the climate crisis. For more information, visit www.forourclimate.org.



KIKO NETWORK

Kiko Network is a national Japanese environmental NGO that tackles climate change by working with local communities, conducting research, submitting proposals or negotiating at the national and international level, and maintaining a database of coal-fired power generation units in Japan. For more information, visit kikonet.org/en/.



CLIMATE ACTION NETWORK EUROPE

Climate Action Network (CAN) Europe is Europe’s leading NGO coalition fighting dangerous climate change. With over 170 member organisations active in 38 European countries, representing over 1,500 NGOs and more than 47 million citizens, CAN Europe promotes sustainable climate, energy and development policies throughout Europe. For more information, visit caneurope.org. Note: CAN Europe only contributed to information on Türkiye.

BANGLADESH GROUPS (BWGED, CLEAN, WKA & DHORA)



The Bangladesh Working Group on External Debt (BWGED) works to stop unjust and dirty loans which affect the environment, human rights, and livelihoods in Bangladesh. For more information, visit Bwged.blogspot.com.



Coastal Livelihood and Environmental Action Network (CLEAN) promotes local ecology based adaptation to ensure sustainable livelihoods of natural resource dependent coastal communities through environmental protection. For more information, visit facebook.com/clean.khulna.



Waterkeepers Bangladesh (WKB) works to protect the water and water bodies of Bangladesh including its forests resources through enforcement, fieldwork, and community action. For more information, visit waterkeepersbangladesh.org.



Dhori Rokhay Amra (DHORA) recognises the urgency of addressing Bangladesh’s challenges and is committed to championing environmental protection and resilience-building efforts across the country. For more information, visit dhora.org.



TREND ASIA

Trend Asia is an independent civil society organization that acts as an accelerator of energy transformation and sustainable development in Asia. Their mission is to reinforce, enrich, amplify, intensify, cultivate, and co-lead the ecosocionomics movement in Southeast Asia. For more information, visit trendasia.org.



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Climate Justice &
Clean Energy

ALLIANCE FOR CLIMATE JUSTICE AND CLEAN ENERGY

The Alliance for Climate Justice and Clean Energy (ACJCE) is a civil society network endeavoring for a transition in Pakistan's energy sector. ACJCE includes six organisations, namely Policy Research Institute For Equitable Development (PRIED), Pakistan Fisherfolk Forum (PFF), Alternative Law Collective (ALC), Indus Consortium (IC), The Knowledge Forum (TKF), and Alternate Development Services (ADS). For more information, visit acjce.com.

FUNDACIÓN

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Chile Sustentable is an initiative of environmental organizations, academics, and citizens dedicated to the analysis and design of new public policies on water, energy, and biodiversity in support of Chile's transition to a green, democratic, and socially equitable society capable of restoring ecosystems and facing the climate crisis. Through citizen proposals and campaigns, it has influenced the achievement of new laws for environmental protection, water security, and energy transition in Chile. For more information, visit www.chilesustentable.net.



POLEN TRANSICIONES JUSTAS

POLEN Transiciones Justas is a non-profit climate-progressive think tank in Colombia, focused

on creating a post-fossil and just future. Through research and social dialogue, POLEN Transiciones Justas develops socially accepted and policy viable strategies for decarbonization, democratization, and labor and economic reorientation. For more information, visit www.polentj.org.



INICIATIVA CLIMÁTICA DE MÉXICO

ICM is a non-profit organization that seeks to influence decision-making regarding climate change in the public sector, private sector and at the social level, with the goal

of getting Mexico to adopt and implement ambitious mitigation actions. ICM directs efforts to transform Mexico into a leader and an example at a global level in terms of climate change. For more information, visit www.iniciativaclimatica.org.



ARAYARA

Over more than 30 years, the Arayara International Institute (a non-profit Brazilian CSO) has developed a new generation of activism for the fair energy transition. With a strong focus on defense of human rights, promotion of racial equality, health, education and innovation of social technologies, Arayara's work encompasses energy, climate and anti-fossil initiatives, enabling public policies, legislation, litigation, knowledge production, communication, campaigns and advocacy that pave the way for a fair energy transition and the reduction of GHG emissions. Arayara operates in all Brazilian states and in some Latin American countries. For more information, visit www.arayara.org.

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ABOUT 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. For further details, see [Tracker Methodology](#).

PRODUCTION

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FURTHER RESOURCES

For additional data on proposed and existing coal plants, see [Summary Data](#) on the GEM website, which provides over 20 tables providing results from the Global Coal Plant Tracker (GCPT), broken down by province, nation, and region. For links to reports based on GCPT data, see [Reports & Briefings](#) on the GEM website. To obtain primary data from the GCPT, see [Download Data](#) on the GEM website.

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April 17, 2024: Figure 4 and related text have been amended to include Australia.



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EXECUTIVE SUMMARY

Since the 2015 Paris Climate Agreement, almost all countries have reduced their coal-fired power plant capacity under development, and more than half the countries with coal-fired power plants have reduced or kept operating coal capacity flat. Climate concerns, unfavorable economics, and public opposition continue to close the door on many coal plant proposals—and close actual doors at some coal plants. However, despite promising momentum, the world's operating coal power capacity has grown 11% since 2015, and global coal [use](#) and coal capacity reached an all time high in 2023. The global coal fleet grew by 48.4 gigawatts (GW), or 2%, in 2023 to a total of 2,130 GW, with China driving two-thirds of additions. Outside of China, the coal fleet also saw a small 4.7 GW uptick for the first time since 2019. Although new retirement plans and phaseout commitments continued to emerge, less coal capacity was retired in 2023 than in any other single year in more than a decade.

One of the key indicators of growth in coal capacity—new construction starts—declined outside of China for the second year in a row and hit a record annual low since data collection began in 2015. In China, the

exact opposite happened, with new construction starts increasing for the fourth year in a row and hitting an eight-year high, which is out of line with President Xi's 2021 pledge to “strictly control” coal projects. Outside of China, 113 GW of coal is still under consideration, only slightly up from 110 GW in 2022, due to a surge in proposals in India, and, in China, 268 GW is under consideration, up from 249 GW in 2022. This global pre-construction capacity, up 6% since last year, crystallizes the importance of calls to stop proposing and breaking ground on new coal plants.

Countries must also ramp up phaseout commitments, as well as ensure announcements are translated into plant-by-plant retirement plans. Just 15% (317 GW) of the current global operating coal capacity has a commitment to retire in line with the Paris Agreement goal of limiting global warming to the critical threshold of 1.5 degrees Celsius. Phasing out operating coal power by 2040 would require an average of 126 GW of retirements per year for the next 17 years, the equivalent of about two coal plants per week. Accounting for coal plants under construction and in pre-construction (578 GW) would require even steeper cuts.

Key developments of 2023

- 2023 saw the highest net increase since 2016 in operating coal capacity. The increase is primarily driven by a surge in new coal plants coming online in China (47.4 GW), and lower retirements in the United States (9.7 GW) and Europe (5 GW) compared to other key years.
- About half of the United States' operating coal capacity is planned to be decommissioned or converted to another fuel by 2035. Momentum away from coal needs to accelerate to meet national energy and climate goals.
- In the European Union 27 and the United Kingdom, the region's coal retirement plans and commitments go halfway towards Paris Agreement climate targets and must continue to become more ambitious too.
- In 2023, twelve new countries committed to No New Coal by becoming members of the Powering Past Coal Alliance. One hundred and one countries have either formally committed to No New Coal or have abandoned any coal plans they had in the last decade.
- China and the ten countries following it account for 95% of the global pre-construction capacity. The remaining 5% is distributed among 21 countries, eleven of which have only one project and are on the brink of achieving the “no new coal” milestone.
- In 2023, the decrease in proposed coal outside of China was tempered by 20.9 GW of entirely new proposals, led by India (11.4 GW), Kazakhstan (4.6 GW), and Indonesia (2.5 GW), as well as 4.1 GW of previously shelved or cancelled capacity considered proposed again.
- “Captive” coal power projects, or projects that are off of the energy grid and used for industrial activities, may be a last frontier for new coal proposals. For example, two projects slated for chrome smelters make up Zimbabwe's 1.9 GW of new coal capacity proposed in 2023. In Indonesia, coal projects to power the nickel smelter industry are moving forward rapidly.
- In 2023, 23 top private financial institutions adopted new or updated coal policies, a significant slowdown from the 57 that adopted policies in 2022.
- The Group of Seven major industrial countries (G7) accounts for 15% (310 GW) of the world's operating coal capacity. With the completion of new units in Japan in 2023, the G7 no longer has any coal in construction, but it is still home to one proposal in Japan and two in the U.S. The proposals are linked to carbon capture and other “clean coal” technologies and are effectively uncertain and expensive distractions from the urgent need to phase out coal.
- The Group of Twenty (G20) is home to 92% of the world's operating coal capacity (1,968 GW) and 88% (336 GW) of the pre-construction coal capacity.
- India's 11.4 GW of entirely new coal proposals introduced — by both public and private sector actors — is more than in any year since 2016, and several long-stalled projects were also revived in the country.
- Brazil saw its total pre-construction capacity decrease, but the country still has two projects remaining, the last ones in Latin America.
- While most other regions are plateauing or decreasing proposals, in Central Asia, the proposed coal capacity is equivalent to 45% of the region's current operating capacity, with more than double the proposed capacity of a decade ago.

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GLOBAL DATA SUMMARY

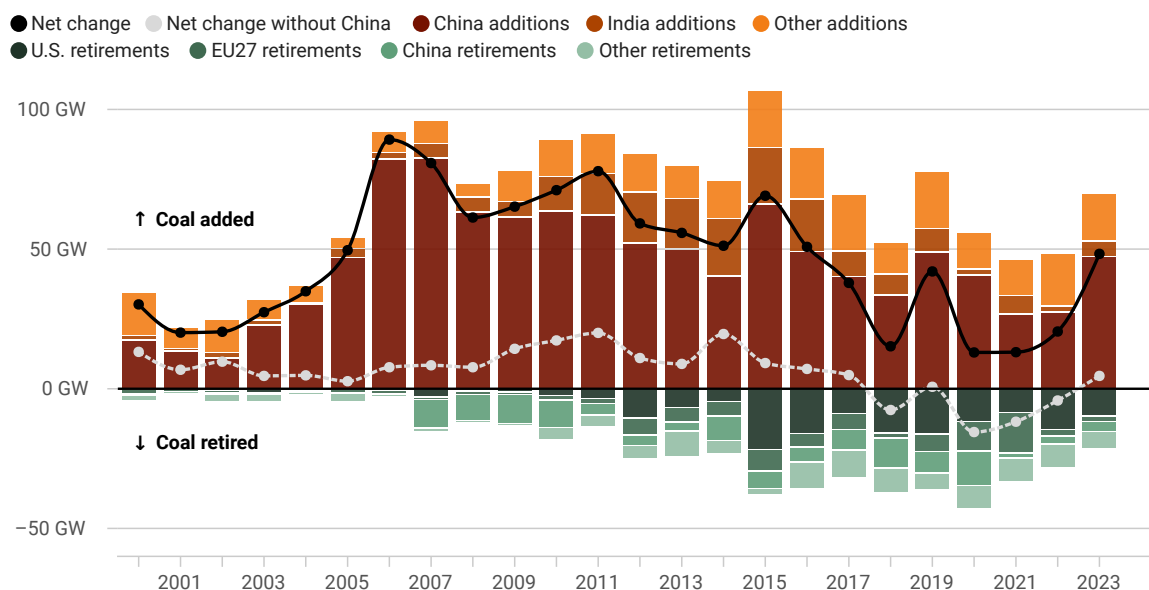
In 2023, 69.5 GW of global coal power capacity was commissioned while 21.1 GW was retired, resulting in a net annual increase in the global coal fleet of 48.4 GW (Figure 1). This is the highest net increase since 2016 and represents a 2% annual increase in the global operating coal fleet, which currently stands at 2,130 GW. The increase is led by a surge in new coal plants coming online in China (47.4 GW), making up 68% of global additions. Since 2000, the global fleet has grown 46 GW on average annually, with the yearly change peaking in 2006 at 89.2 GW. Between 2017 and 2022, the average yearly change dropped to 23.6 GW.

Not only did the world see an increase in operating coal capacity in 2023, but the operating capacity outside of China also saw a net increase for the first time since 2019. In total, 22.1 GW was commissioned and 17.4 GW was retired outside of China, resulting in a 4.7 GW net increase to the operating coal fleet in those countries.

The increase is driven by a slight uptick in new coal plants coming online in non-OECD countries, as well as by lower retirements in the United States and Europe compared to other key years. In fact, although new retirement plans and phaseout commitments

Figure 1: The global operating coal fleet grew further, including rise outside China for first time since 2019 as retirements slowed

Annual change in coal-fired power capacity, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024

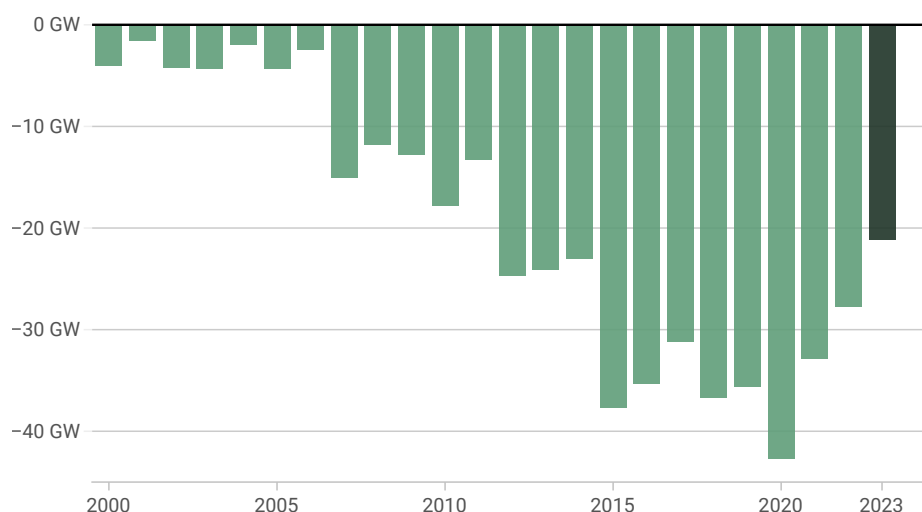


continue to emerge globally, less coal capacity was retired in 2023 than in any other single year in more than a decade (Figure 2). At 9.7 GW, the United States

contributed nearly half (46%) of the global capacity retired in 2023, a slight drop from the 14.7 GW retired last year and its 21.7 GW record high in 2015 (Figure 3).

Figure 2: Coal power capacity retirements at lowest level in over a decade

Global coal-fired power capacity retired annually, in gigawatts (GW)

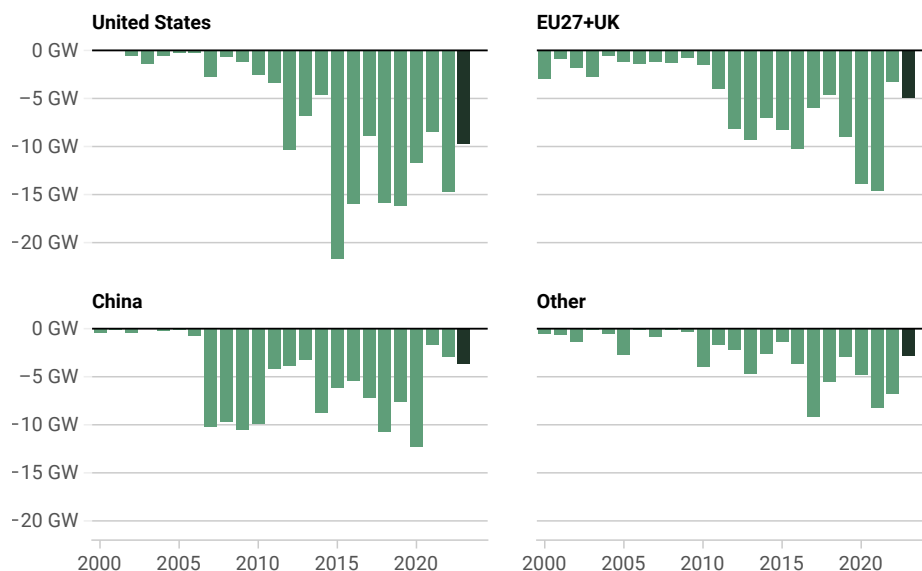


Source: Global Coal Plant Tracker, January 2024



Figure 3: The U.S. and Europe continued to lead the way in coal plant retirements, even as closures did not pick up speed in 2023

Coal-fired power capacity retired annually, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



The European Union’s 27 member states and the United Kingdom represented another (23%), with the U.K. (3.1 GW), Italy (0.6 GW), and Poland (0.5 GW) leading the region’s retirements for the year.

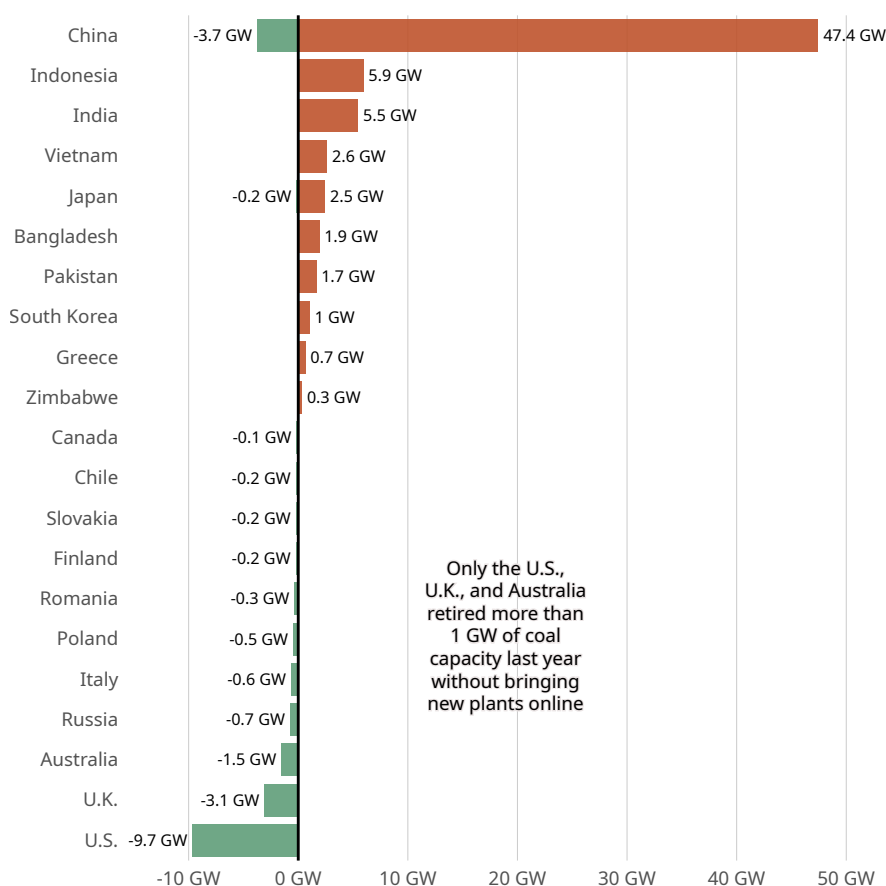
For the third year in a row, China retired little coal, and the country still lacks clear plans for significantly ramping up retirements. Based on known data as of February 2024, China retired 3.7 GW at units above 30 megawatts (MW), and up to 4.8 GW of coal capacity at all units regardless of Global Coal Plant Tracker thresholds. In early 2022, the National Energy Administration’s 14th Five-Year Plan for Modern

Energy System stated that 30 GW of coal power would be phased out during the 14th five-year plan period through 2025. With less than 9 GW of coal capacity retired at units greater than 30 MW in the last three years in China, as well as few units with current plans to retire, China will need to take immediate action to ensure it shuts down enough capacity to meet the target.

Ultimately, the net operating coal capacity increased in ten countries and decreased in eleven countries, with thirteen countries retiring coal capacity total (Figure 4).

Figure 4: About as many countries opened new coal plant units as shut units down in 2023, but overall more capacity added than retired

Newly added and retired operating coal-fired power capacity in 2023, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



In 2023, the global coal capacity in development — announced, pre-permit, permitted, and in construction — went up from 550.6 GW to 578.2 GW, a 5% increase driven by China (Figure 5).

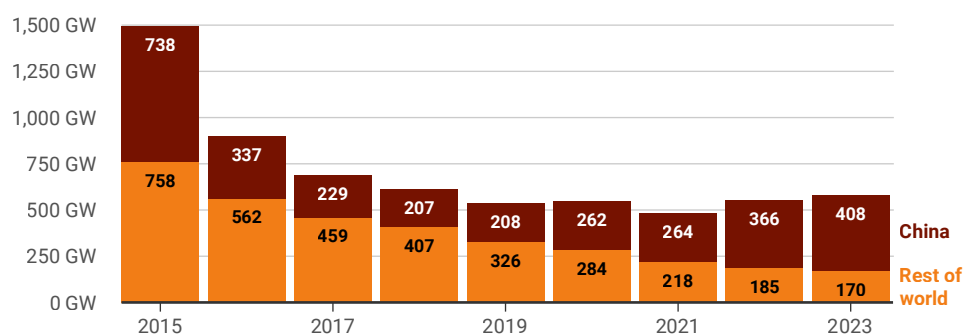
The increase breaks down as follows: Global coal capacity under construction went up 5.8 GW, a 3%

increase from the previous year (Figure 5 bottom panel), and global coal capacity in pre-construction (announced, pre-permit, and permitted) went up 21.8 GW, a 6% increase from the previous year (Figure 5 middle panel). The pre-construction capacity outside of China plateaued instead of continuing its

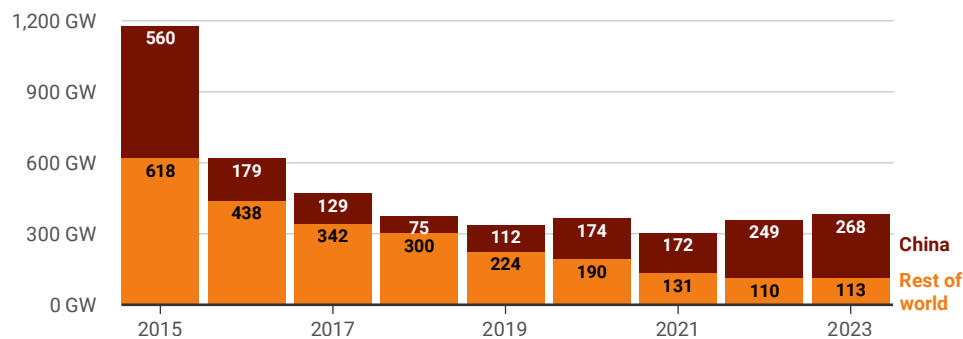
Figure 5: China drives up global coal capacity in development as rest of the world slows

Coal-fired power capacity in different states of development, in gigawatts (GW)

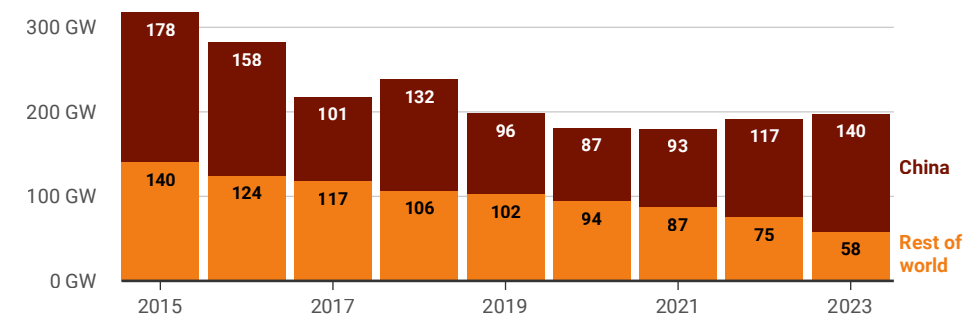
All capacity in development (construction and pre-construction)



Capacity in pre-construction (announced, pre-permit and permitted stages)



Capacity in construction



Source: Global Coal Plant Tracker, January 2024



steady decline and now stands at 113 GW. Despite the slight increase since last year, global pre-construction capacity is currently at its lowest since data collection began outside China and India.

Entirely new coal proposals were concentrated in only seven countries outside of China and represented just a fraction of newly proposed capacity: India (11.4 GW), Kazakhstan (4.6 GW), Indonesia (2.5 GW), Zimbabwe (1.9 GW), Kyrgyzstan (0.7 GW),¹ the U.S. (0.4 GW), and Mongolia (0.1 GW). Another handful of countries — Russia, the Philippines, Botswana, and Nigeria — also saw revived proposals and construction restarts in 2023.

NO NEW COAL: PROGRESS TOWARDS THE LAST COAL PLANT ENTERING CONSTRUCTION

The global coal landscape has been in transformation for almost a decade, marked by a collapse in the amount of planned coal power plants. Since the adoption of the Paris Agreement in late 2015, there has been a 68% reduction in global pre-construction capacity, and new construction starts are at their lowest outside of China since data collection began. Coal power is at the edge of a precipice, facing political and civil opposition and increasingly uncompetitive economics. COP26 set the goal of consigning coal to history with its call to phase down unabated coal power, and COP28 strengthened the commitment by reaffirming that language alongside a call to triple renewables capacity by 2030, reflecting the growing momentum away from coal and towards clean power across the globe.

In 2023, twelve new countries [committed](#) to No New Coal by becoming members of the Powering Past Coal Alliance (PPCA). As of January 2024, 101 countries have either formally committed to No New Coal

The Group of Seven major industrial countries (G7) accounts for 15% (310 GW) of the world's operating coal capacity, down from 23% (443 GW) in 2015. With the completion of new units in Japan in 2023, the G7 no longer has any coal in construction, but is still home to one proposal in Japan and two in the U.S. In April 2023, the group [recommitted](#) to phasing out unabated coal and “predominantly” decarbonizing their electricity sectors by 2035; each country must now ensure no new coal plant enters construction and implement a 2030 coal phaseout to ensure the G7 delivers. The Group of Twenty (G20) is home to 92% of the world's operating coal capacity (1,968 GW) and 88% (336 GW) of the pre-construction coal capacity.

or have abandoned any coal plans they had in the last decade.² This shows a growing awareness of the need to shift to cleaner and more sustainable energy sources, even in places where coal has previously been a major part of the energy mix. At COP28, 130 countries signed the [Global Renewables and Energy Efficiency Pledge](#), signaling their intention to phase out unabated coal power and stop investing in new [unabated](#) coal-fired power plants within this decade while ramping up renewables and energy efficiency.

China and India, the two largest coal consumers globally, continue to substantially influence the global coal narrative, collectively accounting for 82% of the total pre-construction capacity worldwide. Outside of China and India, pre-construction capacity is currently at its lowest since data collection began, but growth in these two countries resulted in the total global capacity in pre-construction increasing by 6% in 2023.

1. The 0.7 GW [Jalal-Abad power station](#) was proposed in 2023 but identified after the January 2024 Global Coal Plant Tracker release, so it is only included in the narratives for this report.

2. Countries that have committed to [No New Coal](#), either through membership of the Powering Past Coal Alliance (PPCA) or No New Coal Power Compact (NNCPC) or through being a signatory to the COP26 Coal to Clean Power Transition Statement. Seven of the countries that no longer have coal plants in pre-construction do have units with “shelved” or “construction” statuses: Argentina, Cambodia, DR Congo, Iran, Nigeria, Papua New Guinea, and Serbia.

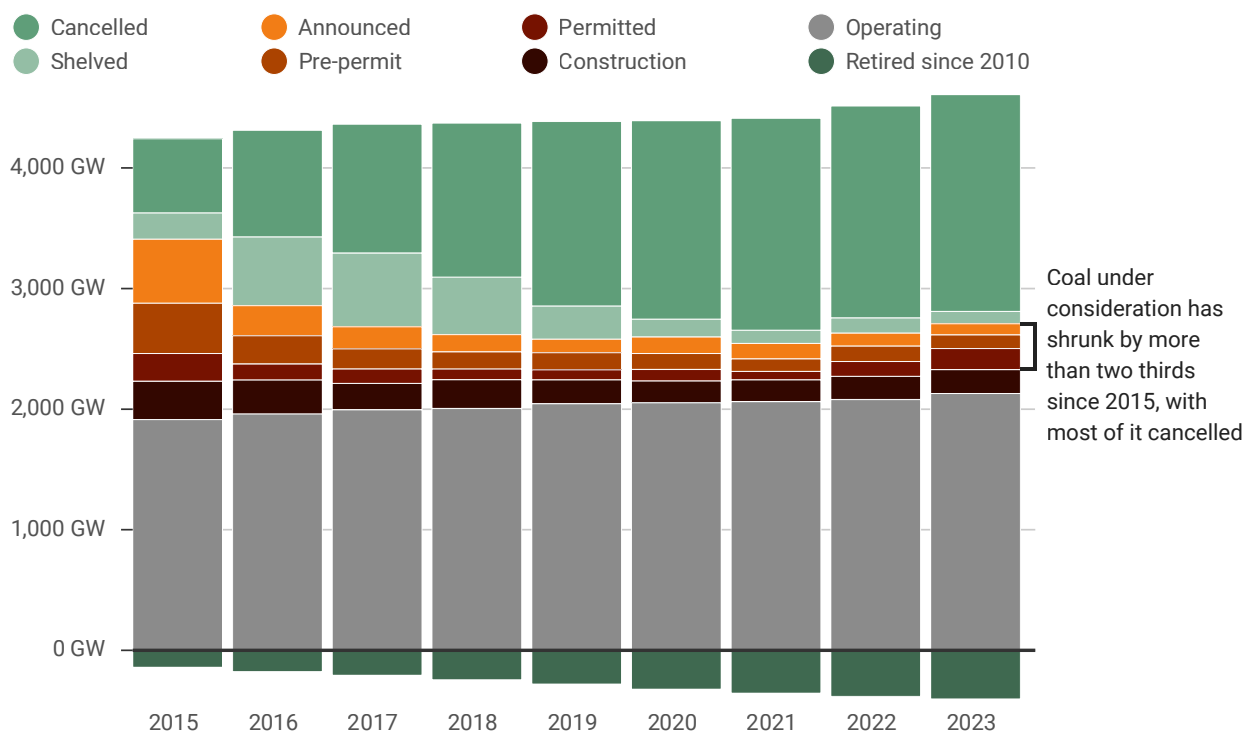
There are pre-construction coal projects in 32 countries worldwide, down from 35 in 2022. Beyond China and India, only six countries — Kazakhstan, Kyrgyzstan, Russia, Zimbabwe, the United States, and the Philippines — have seen an increase in their total planned capacity over the past year. Meanwhile,

Serbia, Ukraine, and Cambodia have given up on or shelved their planned coal projects in the past year.

380.8 GW of pre-construction capacity hangs in the balance: 92.8 GW is announced, 113 GW is in pre-permit development, and 175.1 GW is permitted (Figure 6). China remains at the forefront of the proposed expansion, accounting for 70% of global

Figure 6: Majority of planned coal capacity since 2015 has been cancelled

Global coal-fired power capacity by status each year, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



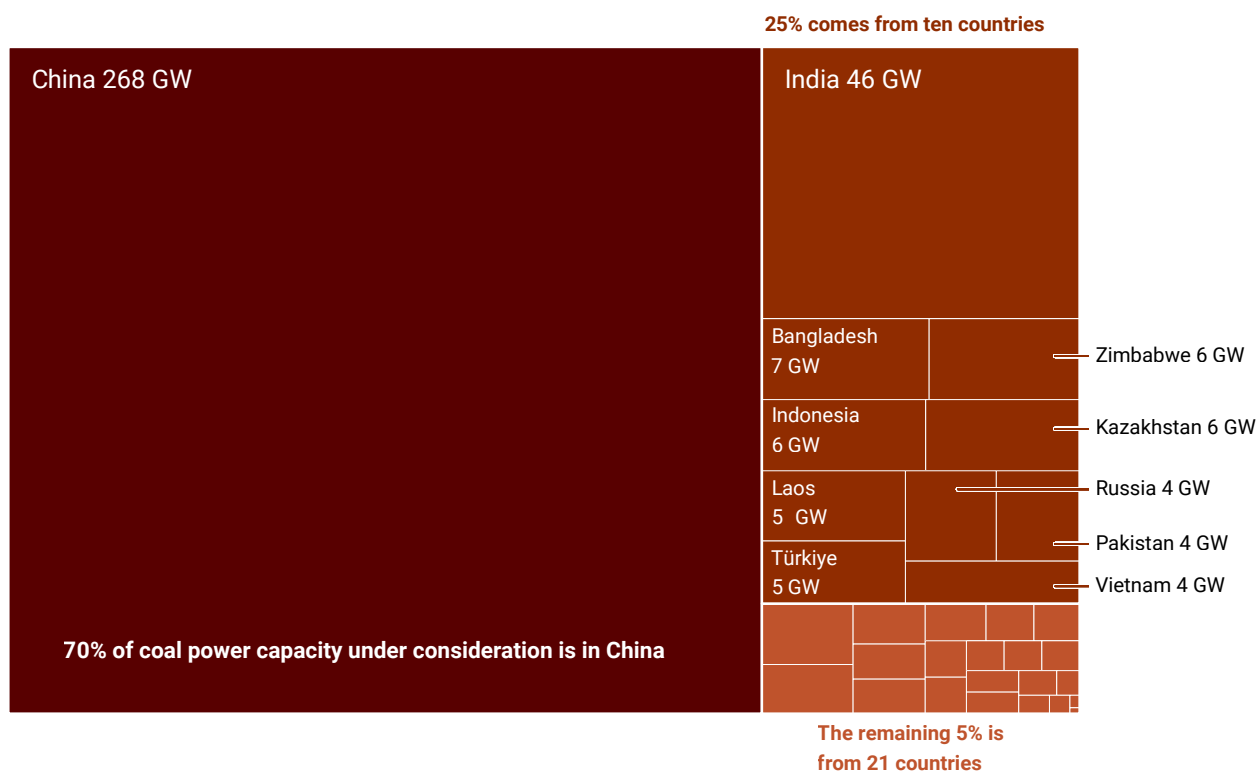
pre-construction capacity, with a total of 267.9 GW under consideration, up from 248.9 GW in 2022 (Figure 5). This significant concentration highlights China’s increasing dominance in coal capacity development. Furthermore, the global pre-construction capacity is heavily concentrated: Along with China, ten other countries — India, Bangladesh, Zimbabwe, Indonesia, Kazakhstan, Laos, Türkiye, Russia, Pakistan, and Vietnam — collectively account for 95% of

this capacity (Figure 7, Figure 8). India accounts for nearly half of the planned capacity within these ten countries.

On the other end of the spectrum, the remaining 5% of global pre-construction capacity is fragmented across 21 different countries. Remarkably, eleven of these countries are on the brink of achieving the “no new coal” milestone, having only a single project

Figure 7: China and ten other countries account for 95% of coal power capacity under consideration

Coal-fired power capacity in pre-construction stages (announced, pre-permit and permitted)



Source: Global Coal Plant Tracker, January 2024



Figure 8: Coal power capacity under consideration outside China

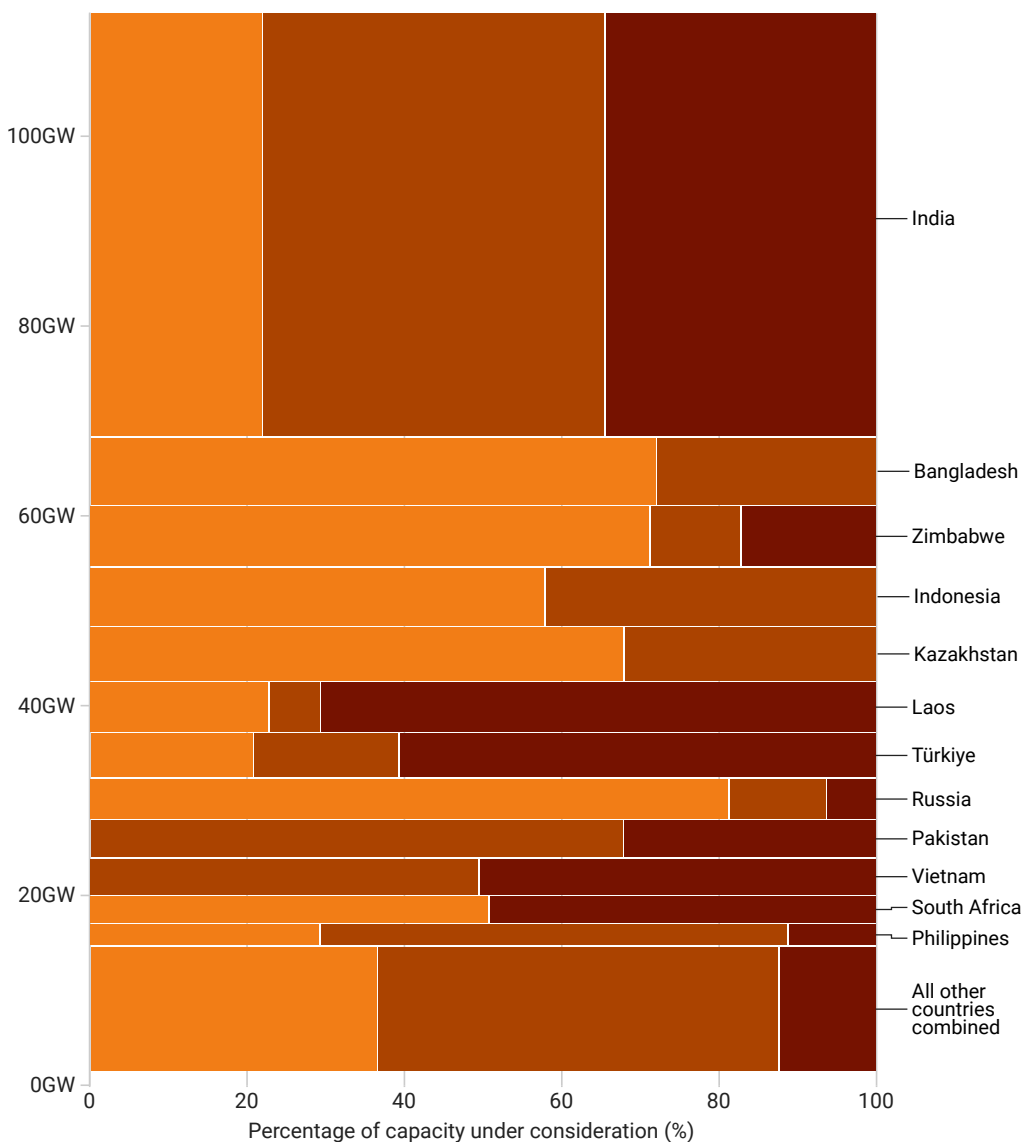
Coal-fired power capacity outside China in pre-construction (announced, pre-permit and permitted stages), by country and status

How to read this chart:

→ % of prospective capacity by status

↓ height of bars = total capacity, in gigawatts (GW)

● Announced ● Pre-permit ● Permitted



Source: Global Coal Plant Tracker, January 2024



underway. These include Australia, Uzbekistan, Thailand, Tajikistan, Botswana, Japan, Eswatini, Zambia, Niger, Kenya, and Madagascar.

OECD/EU

The past year has seen the OECD and EU continue to progress in their journey away from coal. The operating coal fleet and the pre-construction capacity in the OECD/EU have both declined in 2023, continuing the downward trend since the Paris Agreement (Figure 9). The total pre-construction capacity is now at 7.1 GW, the lowest level since data collection began for the region. Only four countries, Australia, Japan, Türkiye, and the United States, are still considering coal projects. Türkiye has had seven planned projects put on hold in 2023, but it still accounts for 68% of the planned capacity in the OECD/EU and remains the only OECD country in the global top ten. Türkiye now has the eighth largest pre-construction capacity in the world, down from the third largest at the end of 2022.

Australia is considering the 0.9 GW [Collinsville \(Shine Energy\) power station](#) and faces considerable

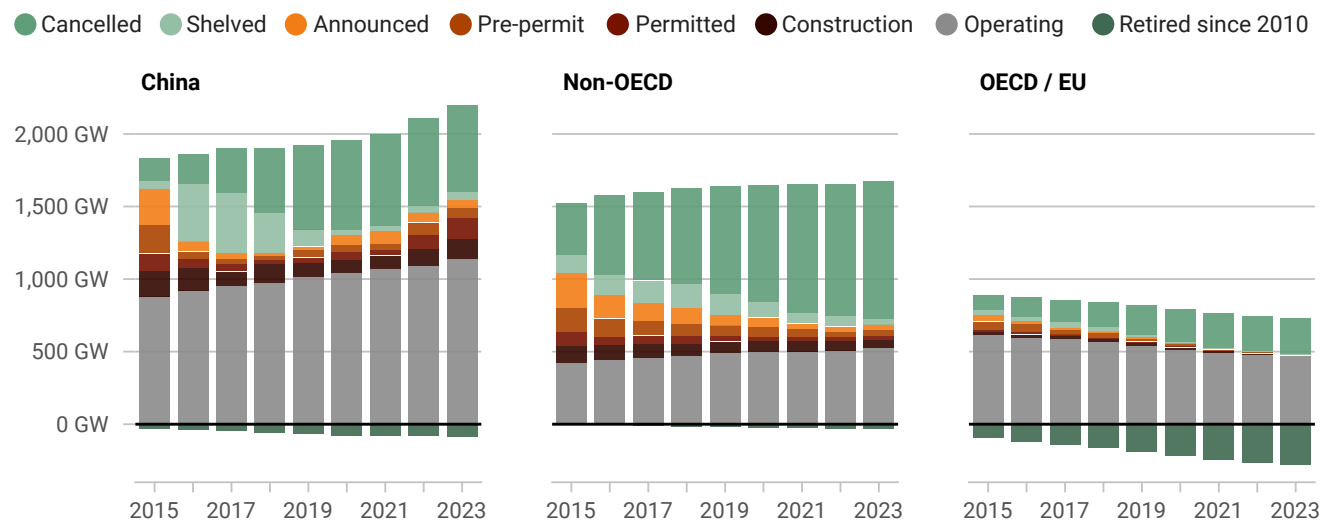
Trends in the global coal proposals can be differentiated into three blocs, each with differing dynamics (Figure 9).

skepticism due to the lack of a viable business case for new coal ventures. Similarly, Japan also has only one pre-construction coal power project in the pipeline, the 0.5 GW [Matsushima power station](#), which would give new life to a coal facility otherwise near the end of its commercial lifetime and ripe for retirement. As discussed below, Japan has expressed interest in pursuing ammonia for co-firing in coal power plants as part of its [Green Transformation \(GX\) Basic Policy](#), an expensive and untested approach which risks delaying coal phaseout plans. However, the G7 has made clear that any exploration of the idea will need to be aligned with a 1.5°C pathway and the G7’s collective goal for a fully or predominantly decarbonised power sector by 2035.

The United States joined the PPCA in late 2023, signaling a decisive shift away from coal and underscoring a broader trend within the OECD/EU towards cleaner energy sources. However, the U.S. has two remaining

Figure 9: The world outside China closes in on no new coal

Coal-fired power capacity by status each year, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



coal projects under consideration, the 0.4 GW [CONSOL Project](#) and the newly announced 0.4 GW [Susitna power station](#). These projects are designed to achieve net zero emissions through carbon capture and storage integration and so may be classified as “abated” if they meet Paris Agreement-aligned definitions. (The

Non-OECD

The total pre-construction coal capacity in the non-OECD (excluding China) has experienced a significant reduction (Figure 9), decreasing by nearly four-fifths (79%) between 2015 and 2023, reflecting substantial progress in transitioning away from coal. While there has been an 8.1 GW rise in total pre-construction coal capacity in 2023, this increase does not negate the substantial downward macro-trend since 2015. In fact, outside India, planned coal capacity in the non-OECD has decreased by 3.8 GW, with India’s over 10 GW increase dwarfing any other changes.

South Asia, which currently holds 57.3 GW of planned coal capacity, has observed a dramatic decrease in its pre-construction capacity, collapsing by nearly 80% between 2015 and 2023. However, this region remains a significant contributor to global coal growth, accounting for half of the new coal projects planned outside China. India has mainly driven the new coal landscape in the region, with multiple coal plant projects being newly announced or reintroduced since last year. In 2023, India’s total pre-construction capacity increased by 13.6 GW to 46 GW. In Pakistan, a small captive coal plant went into construction last year. Other than this, the total planned coal capacity in Bangladesh and Pakistan has remained constant in 2023.

Southeast Asia, once a focal point for new coal capacity beyond China, has been moving away from new coal projects. The region now accounts for just 5% of the global planned coal capacity, a decline from 11% in 2015. The Philippines stands out as the only country witnessing a small increase in total pre-construction coal capacity in the region since last year. Cambodia [cancelled](#) coal plans at the proposed [Botum Sakor power station](#) in late 2023, leaving no remaining active coal projects under consideration.

Intergovernmental Panel on Climate Change (IPCC) [states](#) that “unabated fossil fuels” refer to “fossil fuels produced and used without interventions that substantially reduce the amount of [greenhouse gasses] emitted throughout the life cycle—for example, capturing 90% or more CO₂ from power plants.”)

Sub-Saharan Africa has a pre-construction coal capacity of 13.8 GW, representing a mere 4% of the global total. This capacity is spread over eleven countries, predominantly comprising smaller-scale projects. Notably, in six of these countries, a single coal project is under consideration. In 2023, Nigeria revived the previously cancelled [Ugboba power station](#), which has a planned capacity of 600 MW. Following this revival, a ground-breaking ceremony for the Ugboba project was conducted in the second half of 2023. However, this project had been cancelled due to years of inactivity and may never become operational.

Mongolia shelved the 5.3 GW [Shivee Owoo power station](#) last year, resulting in a 77% reduction in its pre-construction coal capacity. In contrast, Kazakhstan announced five new coal projects in 2023, which collectively add up to an additional 4.6 GW of capacity. As a result, Kazakhstan’s pre-construction capacity surged, as detailed below, increasing nearly fivefold from 1.2 GW to 5.8 GW within the same timeframe.

Bosnia and Herzegovina cancelled the long-pursued Unit 7 at [Tuzla Thermal Power Plant](#), which had endured over a decade of permitting and contract negotiations before the national government officially announced that the 0.5 GW unit would not be built in December 2023. The country still retains 1.4 GW of proposed expansion capacity at the [Gacko](#), [Kakanj](#), and [Ugljevik](#) power stations.

Brazil is the only country in Latin America with proposed coal plants still in the mix. The current G20 presidency saw its total pre-construction capacity decrease, with the [Pampa Sul power station](#) presumed to be shelved in 2023, but the country still has two coal projects in pre-construction stages, as discussed below.

NEW CONSTRUCTION STARTS HIT A NINE-YEAR LOW OUTSIDE CHINA, AND AN EIGHT-YEAR HIGH IN CHINA

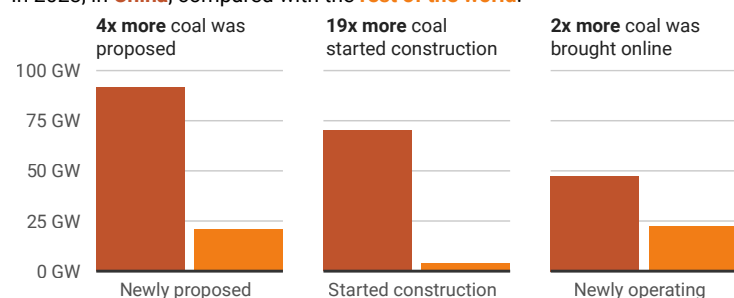
China diverged from the world in most key coal capacity growth indicators (Figure 10).

One of the key indicators — new construction starts — declined outside of China for the second year in a row and hit a record annual low since yearly data collection

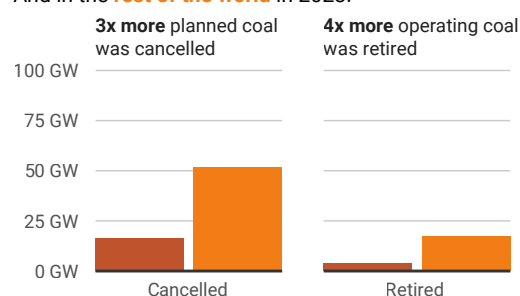
began in 2015 (Figure 11). In 2023, construction started on less than 4 GW of new projects outside China, well below the 16 GW annual average for the same set of countries in the last eight years (2015 to 2022).

Figure 10: Proposals, construction starts, and coal capacity brought online are higher in China than rest of the world combined

In 2023, in **China**, compared with the **rest of the world**:



And in the **rest of the world** in 2023:

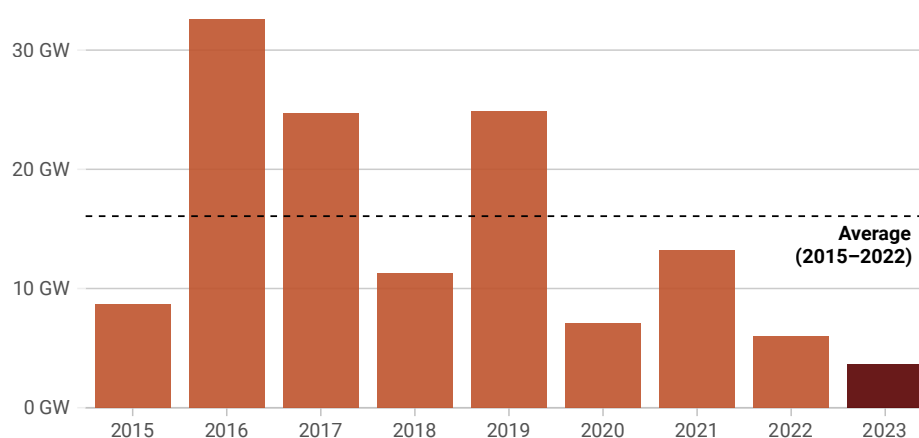


Source: Global Coal Plant Tracker, January 2024



Figure 11: Coal plant capacity starting construction outside China hit record annual low in 2023

Coal-fired power capacity beginning new construction outside China, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



In 2023, only seven countries appeared to start construction on new coal units. From highest start capacity to lowest, these are: China, India, Indonesia, Laos, Nigeria, Pakistan, and Russia. Excluding China, construction only started on a handful of new plants: one plant each in [India](#),³ [Laos](#), [Nigeria](#), [Pakistan](#), and [Russia](#), as well as three plants in Indonesia.

No coal plant construction has started in Latin America since 2016, and no coal plant construction has started for member countries within the OECD, Europe, or the Middle East since 2019 (Figure 12, Figure 13). In Nigeria, the start of foundation work at the mine-mouth [Ugboba power station](#) in 2023 was the first known construction start in Africa since 2019.

Figure 12: The world's wealthiest nations have seen no new coal plant construction starts since 2019

Coal-fired power capacity beginning construction outside China, in gigawatts (GW)

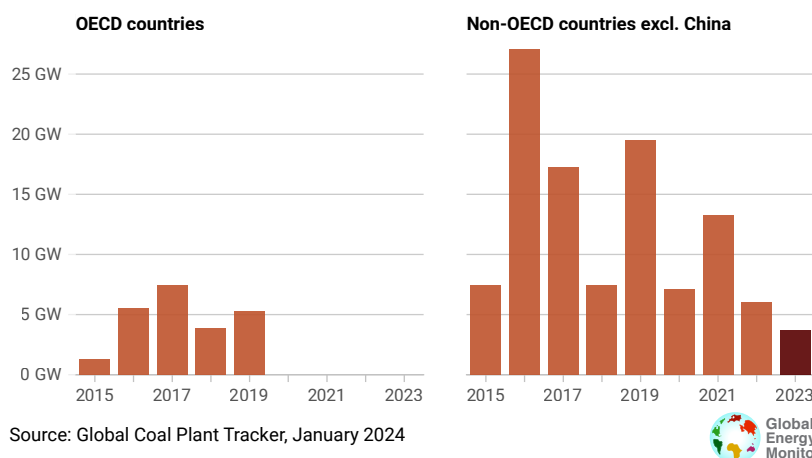
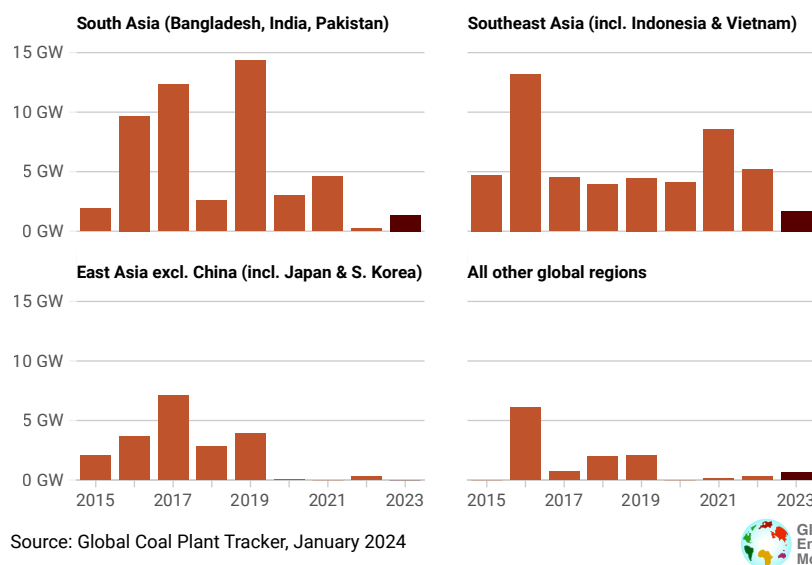


Figure 13: Even outside China, most new coal plant construction starts since 2015 have been in Asia

Coal-fired power capacity beginning construction outside China, in gigawatts (GW)



3. [Athena Chhattisgarh power station](#) is excluded as it had already halted construction in 2017 before being revived and starting construction again in 2023.

However, China's continued coal construction surge in 2023 stands in stark contrast to these global trends (Figure 14). China's 70.2 GW of new construction starts in 2023 represents 19 times more than the rest of the world's 3.7 GW and is the country's highest annual capacity breaking ground since 2015. The new construction starts in China were also nearly quadruple what they were in 2019 when China hit a nine-year annual low of entirely new builds.

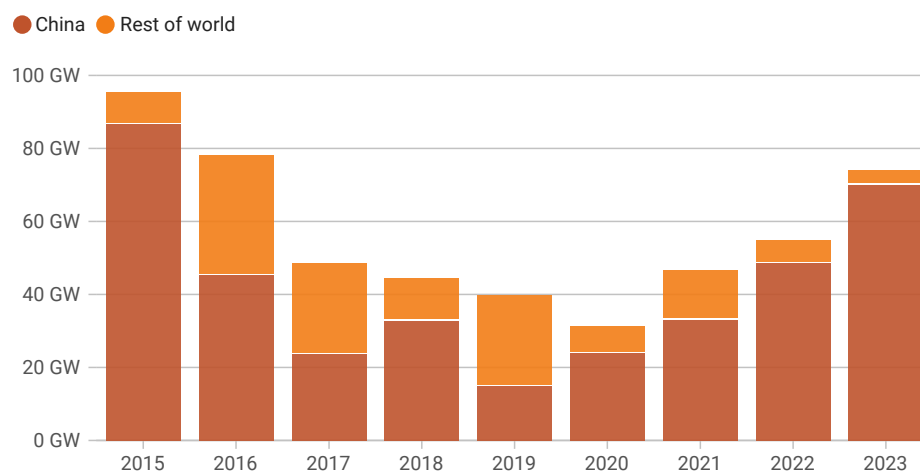
In 2016, China's National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) – the country's top economic planning and energy regulation authorities respectively – issued a series of restrictions to limit total coal-fired power capacity. In 2017, the State Energy

Administration again halted work on numerous plants under construction. The focus on cutting coal capacity to address overcapacity, financial risks, and pollution resulted in the scaling back of entirely new projects breaking ground, but new coal capacity development has now picked up in full force.

As discussed in a [February 2024 joint report](#) between the Centre for Research on Energy and Clean Air (CREA) and GEM, China has spent the past seven years digesting overcapacity from the 2015 wave of permitting. Coal-fired power generation still grew rapidly over this period. As power generation from coal begins to fall, dealing with overcapacity will be far tougher.

Figure 14: China accounts for 95% of the world's capacity beginning construction in 2023

Coal-fired capacity starting construction by year, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



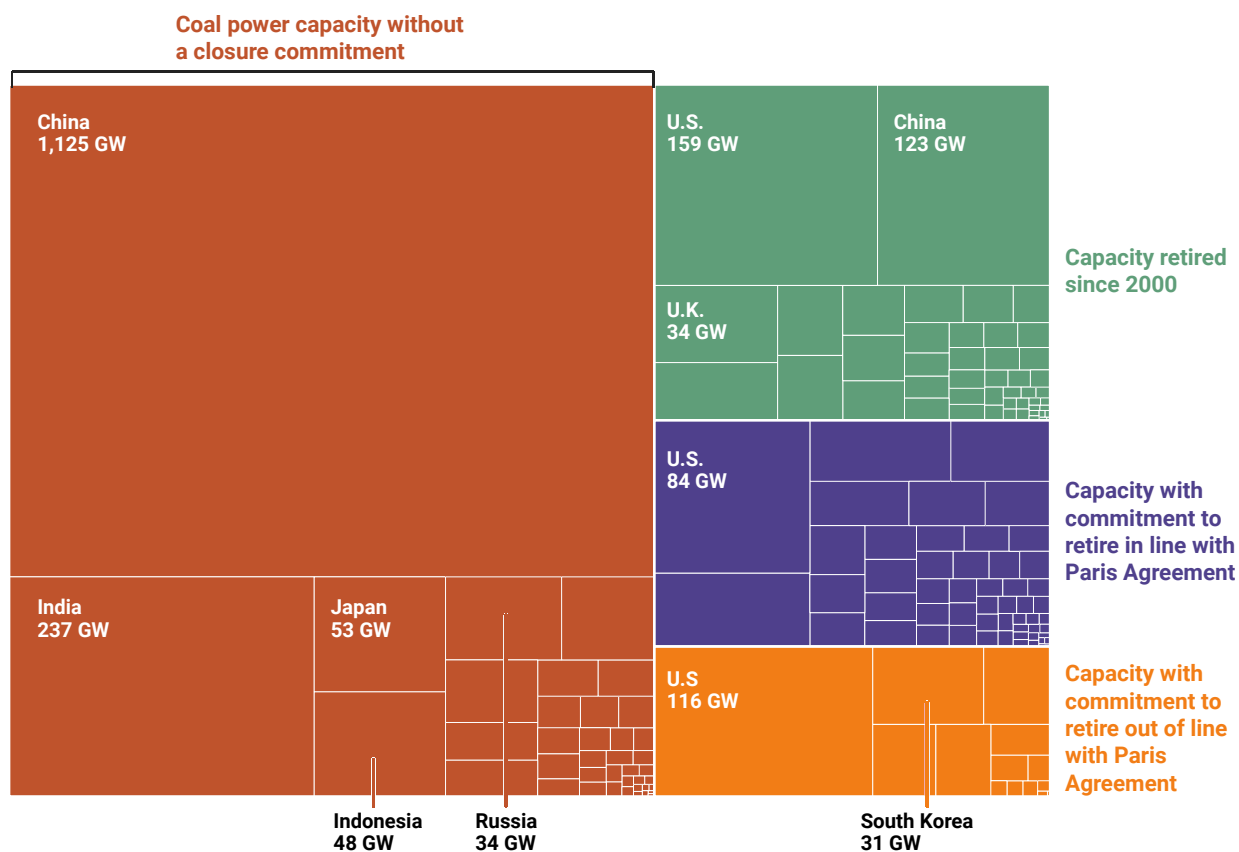
PHASEOUT PROGRESS

Coal-fired power generation is the largest source of energy-related CO₂ emissions globally. In order to meet the 2015 Paris Agreement goals and put the world on a pathway to no more than 1.5°C of global warming, reducing the use of coal for power generation is the single most important source of emissions reductions. To align with that goal, modeling by the International Energy Agency and others finds that OECD countries should eliminate coal power by 2030 and the rest of the world by 2040.⁴

Since 2000, 470 GW of coal power has been retired. One-third of that retired capacity is in the U.S. (159 GW), with a quarter in the European Union and the U.K. (120 GW) (Figure 15, Figure 2). However, more than four times the coal power capacity operates today than has been retired in the last two decades. As detailed in [Boom & Bust Coal 2022](#) and [2023](#), in the run-up to Glasgow’s COP26 in November 2021, countries announced an unprecedented number of coal phaseout, “no new coal,” “no new coal/fossil financing overseas,” and net zero emissions commitments.

Figure 15: Most coal power capacity needs closure commitment

Coal-fired power capacity by phaseout status, excluding net zero commitments



Source: Global Coal Plant Tracker, January 2024



4. Bulgaria, Croatia, and Romania are three heavily coal-powered countries in the European Union that are not in the OECD, but which are typically also considered advanced economies for phaseout considerations. However, for a conservative analysis, this section assumes that commitments to retire before 2030 are in line with the Paris Agreement for OECD countries and before 2040 for non-OECD countries.

Although more operating coal capacity continues to be covered by new unit-level retirement plans or country-level coal phaseout commitments year after year, immediate and extensive action from all stakeholders is imperative to meet climate goals.

Only 15% (317 GW) of the current global coal power operating capacity has a commitment to retire [in line](#) with the Paris Agreement goals.⁵ Another 10% of global operating capacity (210 GW) has a closure commitment that needs to be sped up to keep up with the world's climate goals. Finally, although the vast majority of operating global coal capacity is now captured by some type of national net zero or other pledge, 75% (1,626 GW) still lacks a coal closure commitment.

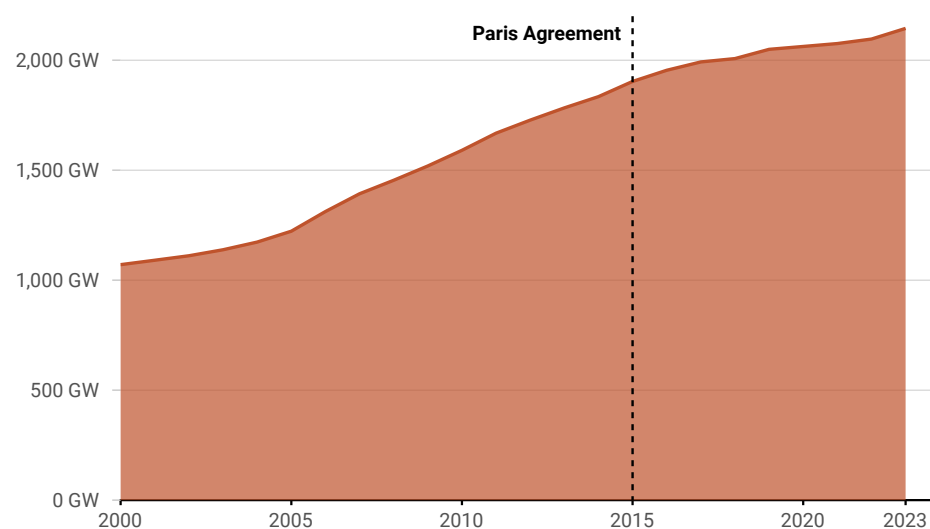
Generally speaking, phasing out operating coal power by 2040 would require an average of 126 GW of retirements per year for the next 17 years, the equivalent of about two coal plants per week. Accounting for

coal plants under construction and in consideration (578 GW) would require even steeper cuts. In fact, nearly twice as much coal power capacity has been added globally than retired since Paris. The net trend shows that coal capacity is still increasing (Figure 16), threatening the world's climate goals and highlighting the need to put an end to new coal.

Thankfully, various countries are making clear that shutting coal down is possible, and most of the world is closing in on “no new coal.” More than half the countries with coal power have [reduced or kept operating capacity flat](#) since the 2015 Paris Agreement (Figure 17, Figure 18, Figure 19 on the following pages).⁶ Austria, Belgium, Sweden, Portugal, Peru, and the United Arab Emirates have retired or converted their last operating coal plants, while Slovakia, the U.K., and potentially others are projected to [join them](#) in 2024. In addition, almost all countries have [reduced](#) their announced, pre-permit, permitted, and

Figure 16: Global coal power capacity continues steady growth despite Paris Agreement, with a 2% uptick in 2023

Total operating coal-fired power capacity globally, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



5. Operating capacity includes both operating and mothballed coal power units.

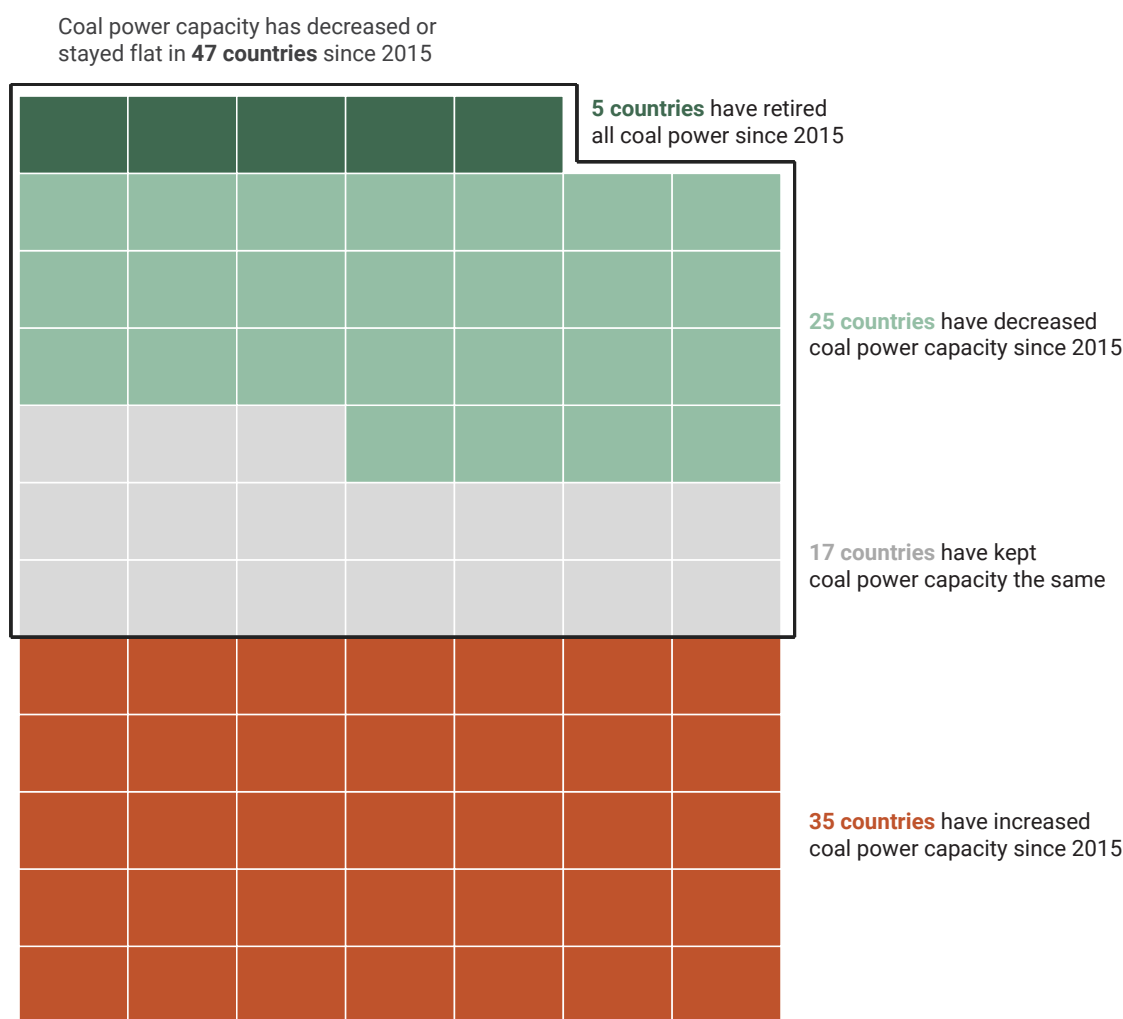
6. Cumulative annual capacity figures in this section include capacity of both operating and mothballed coal power units based on known operating and retirement years. The total change numbers for each country in figures 18 and 19 consider historical status changes from 2015 to 2023 (some details [here](#)).

construction coal capacity since 2015 (Figure 20, on page 24). Only six countries have **increased** coal power capacity under development since 2015, and the biggest increase did not exceed 3 GW. In contrast, coal power capacity under development in China, India, and Türkiye decreased by more than 300 GW, 200 GW, and 50 GW, respectively, between 2015 and 2023.

But despite the number of countries that have decreased their coal power capacity and cancelled plans for new coal, the world's installed coal power capacity has grown 11% since 2015 (Figure 1, Figure 16). The number of new coal power plants coming online has outpaced plant closures over the past eight years.

Figure 17: More than half the countries with coal power have reduced or kept operating capacity flat since 2015

Change in operating coal-fired power capacity by country since the Paris Agreement in 2015; each block = one country

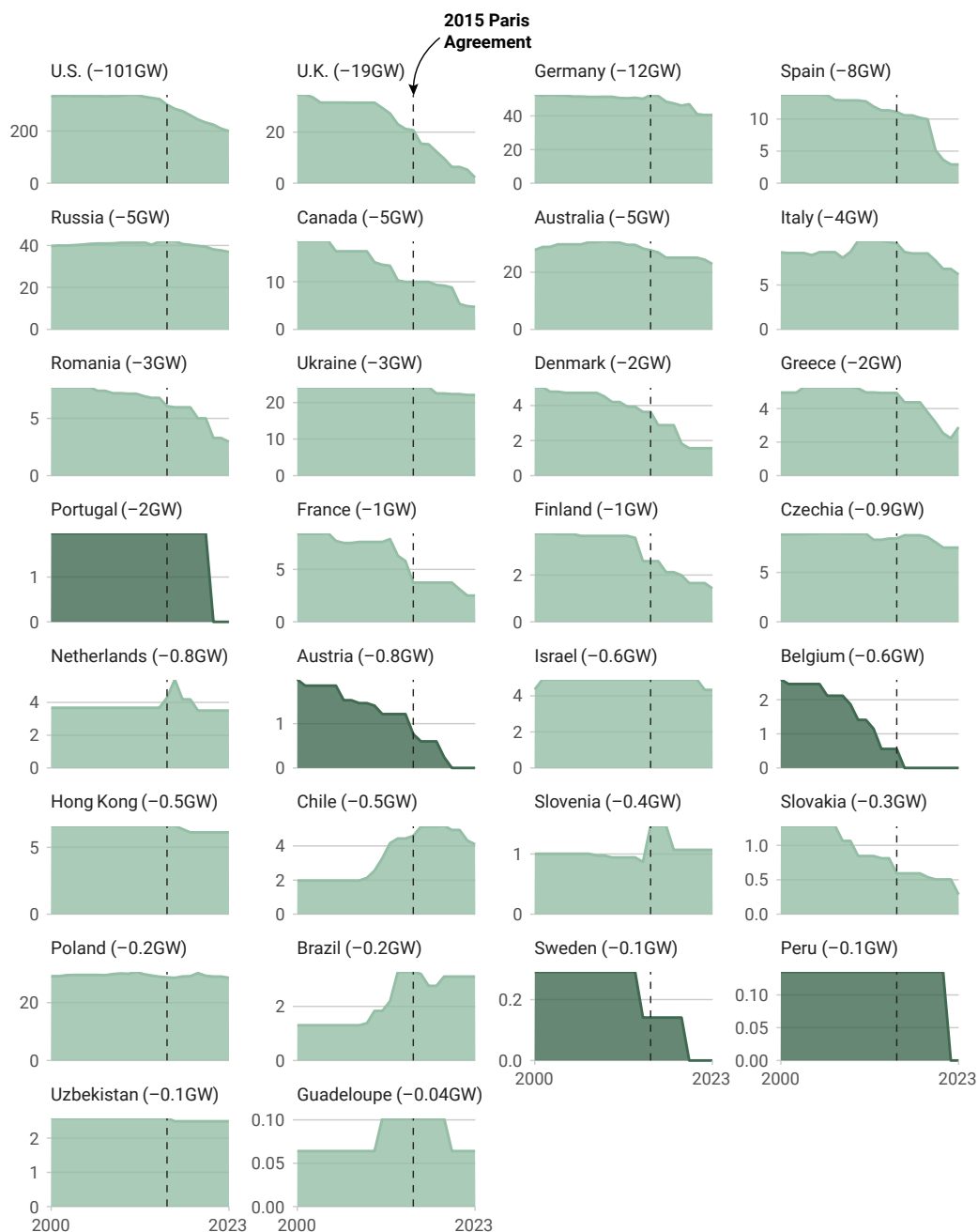


Source: Global Coal Plant Tracker, January 2024



Figure 18: Which countries decreased their coal power capacity since the 2015 Paris Agreement?

Operating coal-fired power capacity in countries where it has **decreased** or **fully retired** since 2015, in gigawatts(GW); each country on its own scale, highlighting trend changes

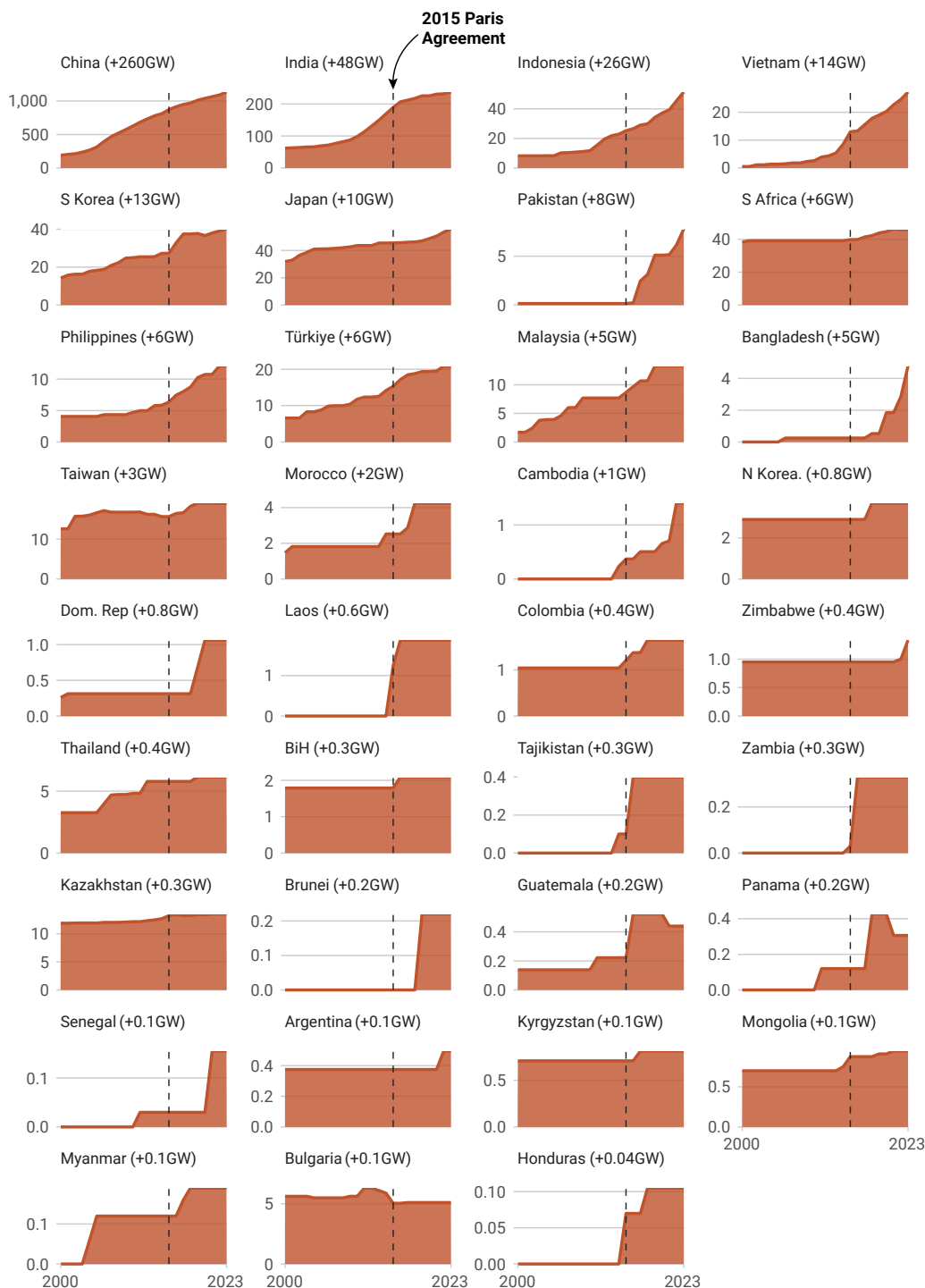


Source: Global Coal Plant Tracker, January 2024



Figure 19: Which countries increased their coal power capacity since the 2015 Paris Agreement?

Operating coal-fired power capacity in countries where it has increased since 2015, in gigawatts(GW); each country on its own scale, highlighting trend changes



Source: Global Coal Plant Tracker, January 2024



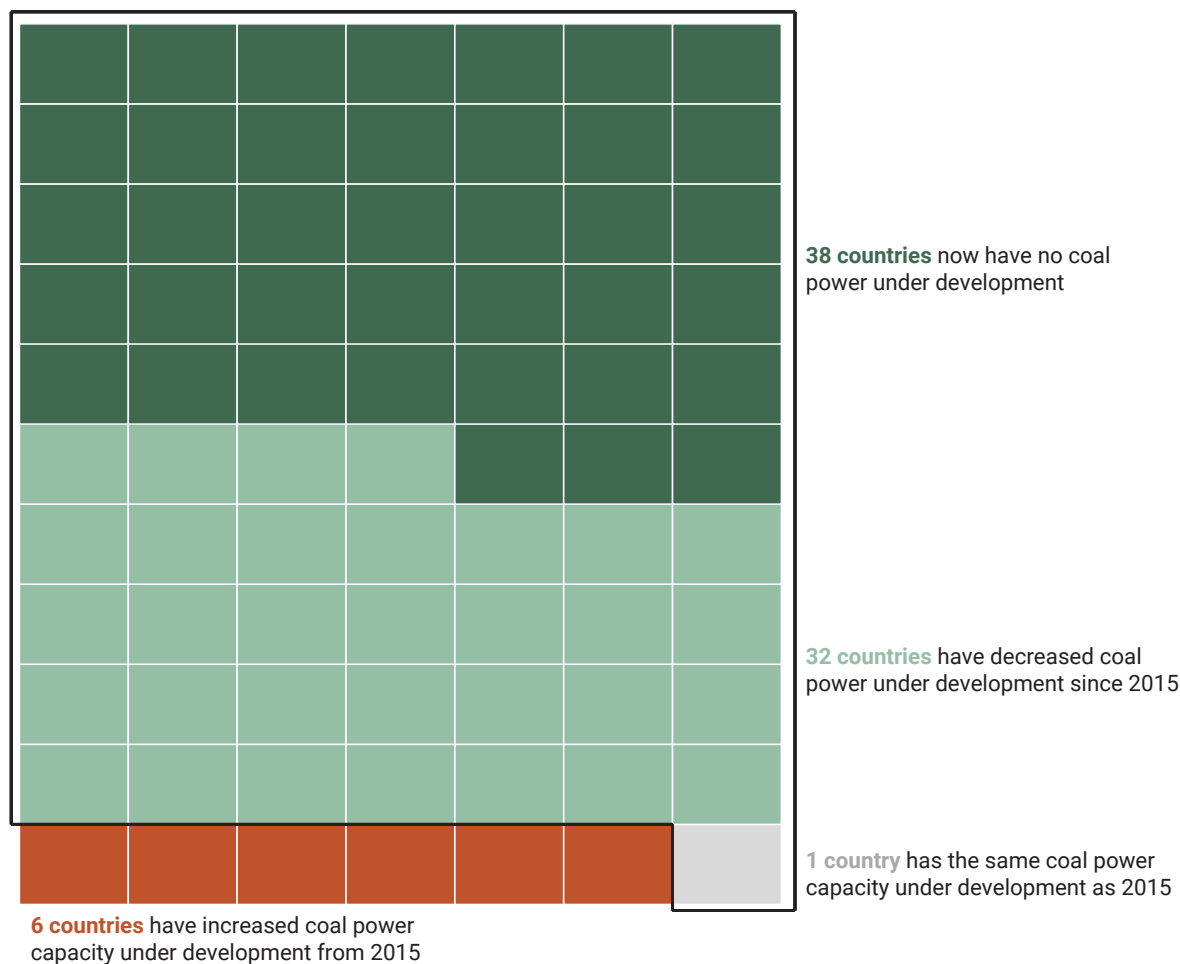
Coal-fired power generation is another key indicator to assess progress towards reducing power sector emissions. For example, looking at generation instead of capacity, Ember found that half of the world’s economies are already at least five years past a peak in power generation from fossil fuels, with emissions from the power sector in these 107 countries **falling by almost 20%** in the last decade.

It is important to note that in many developing countries, especially those heavily dependent on coal, a 2040 coal exit translates to a record speed energy transition and brings up important equity considerations. The international community must support these countries in moving away from coal through provision of public and private clean energy finance, support to develop flexible grid infrastructure, and technical and capacity assistance to bolster regulatory and policy frameworks that accelerate the transition from coal to clean.

Figure 20: Almost all countries have reduced coal power capacity under development since 2015

Change in coal-fired power capacity in development (pre-construction and construction) by country since the Paris Agreement in 2015; each block = one country

Coal power capacity under development has decreased or stayed flat in **71 countries** since 2015



Source: Global Coal Plant Tracker, January 2024



PRIVATE FINANCE COAL POLICY TRENDS IN 2023

In 2023, 23 top private financial institutions adopted new or updated coal policies, a significant slowdown from the 57 that adopted policies in 2022. The Reclaim Finance [Coal Policy Tracker](#) shows that at the end of 2023, 132 top financial institutions had at least a basic coal policy. Unfortunately, only a small number of these policies are sufficient to align banks, insurers, and investors with a trajectory of limiting global warming to 1.5°C.

It is difficult to know precisely the reasons for the steep decline in the rate of adoption of new and improved thermal coal policies in 2023, but the following drivers have very likely contributed to this trend:

- Since the first policies were adopted in 2010, more than 130 top financial players have moved on thermal coal, but most developments are now updates of existing coal policies rather than new policies. The situation differs widely by geography, with still 166 top financial players based in North America and [Asia](#) without any coal policy vs 55 with one, and where a lot remains to be done, with financial flows [continuing to fuel the coal industry](#).
- Many financial institutions that adopted a thermal coal policy do not update their policies annually and have turned their attention to oil and gas since 2021, even if their coal policy remains filled with loopholes.
- Hundreds of financial institutions have adopted sectoral and/or portfolio-financed emission targets as part of their commitments to the sectoral net zero alliances grouped under the umbrella of the Glasgow Financial Alliance on Net Zero (GFANZ). For at least some, this has taken attention away from improving their fossil fuel sector policies, even though the adoption of such policies is essential to ensure, for instance, the immediate exclusion of coal developers.
- The energy security impacts of the war in Ukraine also created a period of uncertainty, which probably led some financial players to be reluctant

to adopt new/updated coal policies, particularly in Asia.

- The anti-ESG panic in the U.S. has also had an impact, particularly in the adoption of coal policies by financial institutions in North America. This is well illustrated by the backtracking of [Bank of America](#), which removed any systematic exclusions from its coal policy in December 2023.
- The [trend away from project-level financing of coal assets](#) (and toward corporate financing) might have created a dynamic where new coal policies are particularly impactful on the bottom line of corporate lending teams within the financial institutions involved, something which complicates the adoption of a coal policy by a financial institution, but increases its impact in the real world.

Among the significant new and updated policies adopted in 2023 are the following:

- UK-based [Legal & General](#), one of the top global asset owners, updated its coal policy in March 2023. It now excludes coal mine and power plant developers from new investments. This is a significant upgrade, even if the policy does not cover financing of the subsidiaries of such coal developers. Legal & General also committed to fully exclude investments in thermal coal by 2030 globally.
- [DWS](#), the asset management branch of the German financial giant Deutsche Bank, adopted its first coal policy in April 2023. DWS had almost [US\\$6 bn exposure](#) to the thermal coal sector as of January 2023. This is a solid policy that excludes investments in coal mine and power plant developers as well as in developers of coal-related infrastructure. It commits to phasing out investments in thermal coal by 2030 in EU/OECD countries and by 2040 globally and requests a coal phaseout plan from its investees. While the policy applies to a majority of its assets under management, it does not apply to its passive products, which account for about a quarter of its assets under management.

In addition, although unrelated to the global coal plant pipeline, it is important to note that most financial institution coal policies only apply to thermal coal and do not target metallurgical coal – mostly used in the steelmaking process – even though its use is responsible for most of the greenhouse gas emissions from steel. In November 2023, French bank [BNP Paribas](#) became one of the first banks to adopt commitments regarding metallurgical coal. The bank will no longer provide financial services to metallurgical coal mine projects. However, to be aligned with its commitments to decarbonize the steel sector, BNP Paribas must also exclude companies that develop such projects.

Discussions and policy proposals concerning private sector investments in coal phaseouts in developing countries gained momentum in 2023, even if actual

investments in phaseouts remained elusive. The GFANZ released a [detailed report](#) on financing managed phaseouts of coal power plants in the Asia Pacific at COP 28 in Dubai. The report calls on financial institutions to prioritize finance for phaseouts of coal that are aligned with science-based 1.5°C pathways. Also announced at COP28 was the [Coal Transition Accelerator](#), a French government-led initiative to speed up the phaseout of coal that includes an OECD-led effort to develop “gold standard” coal policies for private financial institutions, and the publication by a group of twelve NGOs led by Reclaim Finance of [ten principles](#) for financing coal retirements. The principles call for phaseouts to prioritize renewables, avoid carbon-based power alternatives, be based on concessional financing, and protect local communities.

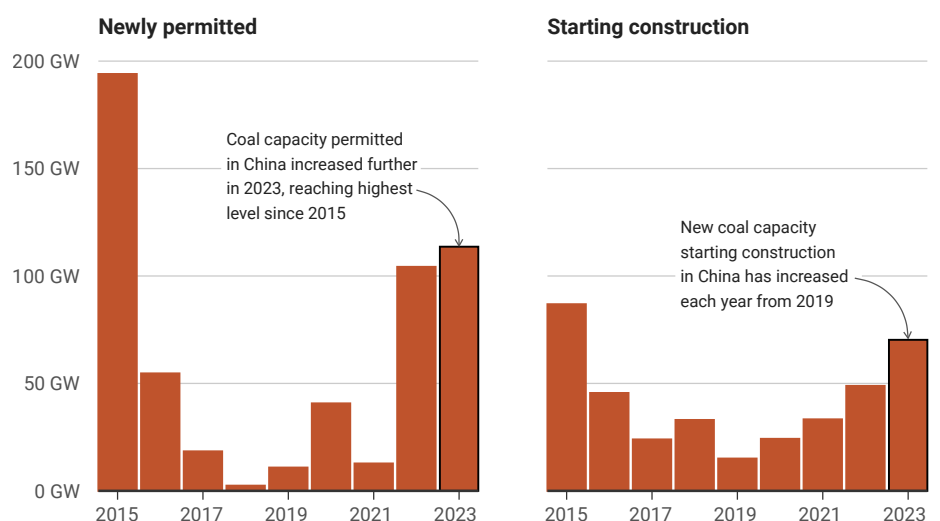
CHINA

China must “strictly control” construction on new coal plants in line with its own 2021 [pledge](#) and with the rest of the world. As a result of the increase in coal use and investment in coal power, a [February 2024 joint report](#) by CREA and GEM [found](#) that China risks [missing several climate targets](#) it set for 2025, unless drastic action is taken soon. Since China’s 2021 pledge,

approvals of new coal power plants increased four-fold in 2022–23, compared with the previous five-year period of 2016–20 (Figure 21). Since the beginning of 2022, an [estimated](#) 218 GW of new coal power plants has been permitted. Eighty-nine GW of this capacity had already started construction by the end of 2023.

Figure 21: China’s new coal power spree continues at pace

New coal power capacity starting construction and permitted in China, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



Permitting of new coal power projects was essentially frozen in 2021, as leadership emphasized strictly controlling “high emissions” projects. In the second half of 2021, China experienced a coal and coal power shortage, and the crisis was successfully leveraged by pro-coal interests to rewrite the country’s energy policy. In 2022 and 2023, coal power plant permitting, construction starts, and new project announcements accelerated dramatically in China, with new permits reaching the highest annual levels since 2015. In 2023, at least 106 GW of capacity was approved and 70 GW of capacity started construction as more provincial-level governments jumped on the 2022 bandwagon (Figure

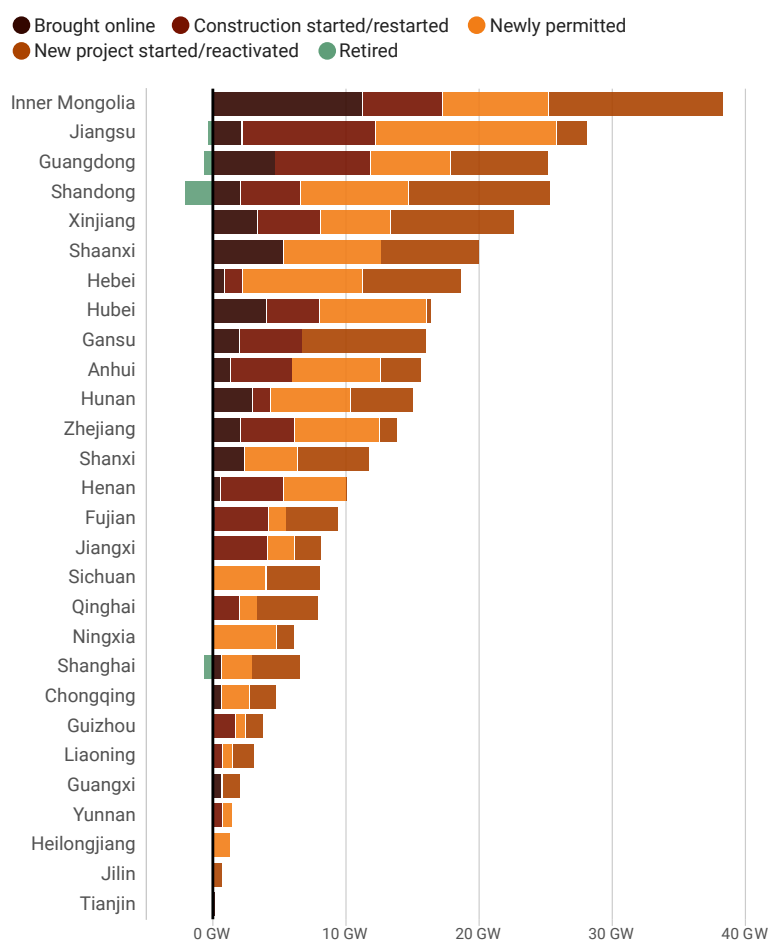
21). In fact, new coal capacity starting construction has been increasing each year since 2019 (Figure 14, Figure 21), as noted above.

In addition to construction starts, defined as concrete pouring, a long list of coal power projects held “construction start ceremonies” in 2023 that didn’t involve pouring concrete. These ceremonies are likely carried out in order to show that the project is progressing and possibly insure against any retroactive review of permits.

In 2023, most Chinese provinces saw new coal proposals and developments, and very few saw any retirements (Figure 22). Among China’s provinces, Jiangsu

Figure 22: Most Chinese provinces saw new coal developments in 2023

Status changes in coal-fired power capacity in 2023 by province, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024

Note: Categories are not mutually exclusive – e.g. plants that both obtained permits and started construction are included in both categories.

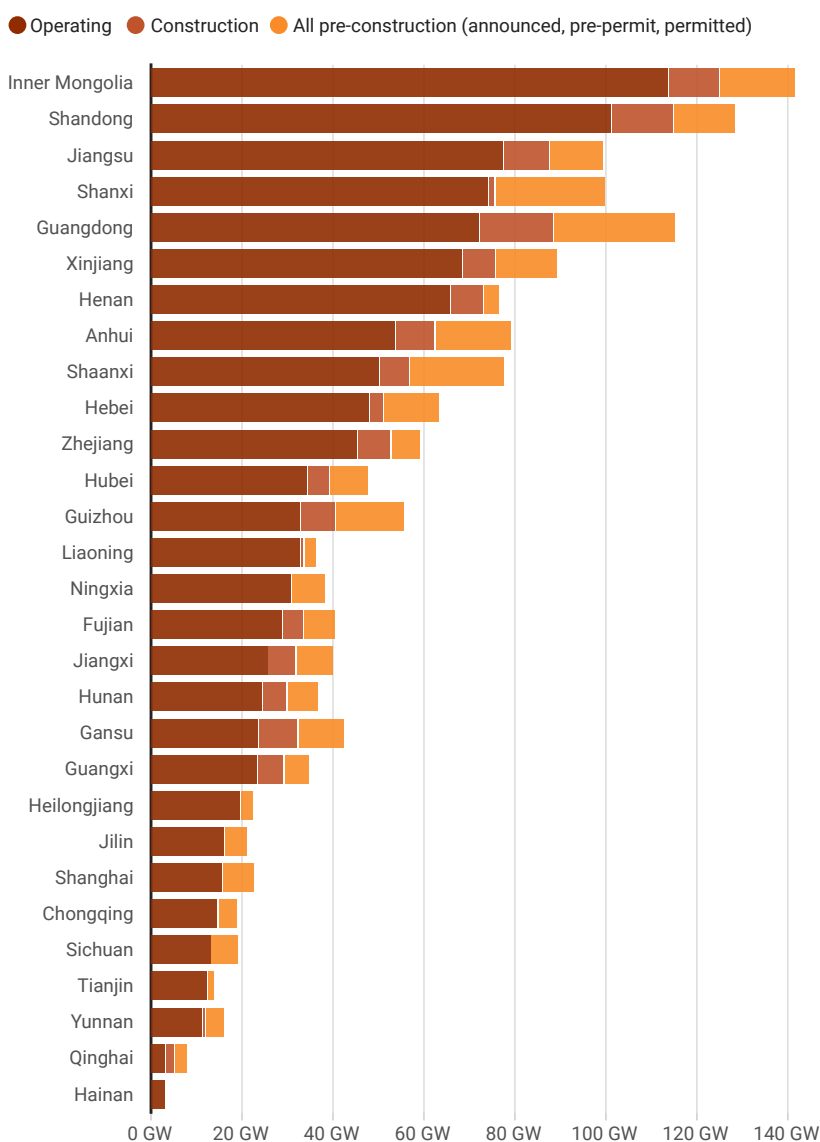


issued the most permits for new coal power plants for the year, followed by Shandong, Shaanxi, Hebei, and Hubei. In 2023, the most plants were commissioned in Inner Mongolia, Shaanxi, Guangdong, and Hubei, and most new projects were announced in Inner Mongolia, Shandong, Gansu, and Xinjiang (Figure 22).

Almost all Chinese provinces with existing coal plants are planning new ones (Figure 23). Inner Mongolia tops the list of provinces with the most current operating coal capacity (113.7 GW), followed by Shandong, Jiangsu, Shanxi, and Guangdong. If all pre-construction and construction capacity is built,

Figure 23: Almost all Chinese provinces with coal power are planning additional capacity

Coal-fired power capacity in Chinese provinces by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



Guangdong will move up the coal ranks, securing a spot as one of the top three provinces with the most coal plant capacity.

Statements from thermal power developers and government officials confirm that the 14th five-year plan period until 2025 is seen as a “policy window” for new coal power plants, rather than a period when new projects are strictly controlled. This is causing a rush to secure permits for new projects. Why are China’s planners promoting the construction of coal-fired power despite the obvious problem of future overcapacity? The fundamental issue is rigid and outdated grid management. China has more than enough capacity to cover electricity demand under all circumstances, but it is not used efficiently, especially across provincial borders.

China’s policymakers have sought to reconcile the buildout of new coal power now with CO₂ peaking and carbon neutrality goals, which require a steep reduction in coal-fired power generation over the next decade, by introducing a new slogan. Several provinces, including Guangdong, Shandong, and Jiangsu, have approved new coal power projects under the slogan of “build first and modify later.” This phrase suggests that the stranded asset risk will be addressed through some, largely unspecified, future “modifications.” There is, however, no policy that lays out what the modifications might be that would solve this contradiction, and no technical requirements for power plants built under this slogan that would differ from the general coal power plant standards for flexibility, thermal efficiency, or other parameters.

The official policy on coal power is that new energy should become the “mainstay” of the power system while coal moves to a “supporting” role. After the commitment to “strictly control” new coal power projects, China’s top leadership dispatched inspectors to the National Energy Administration (NEA), admonishing

the agency for failing to control new coal power buildup, among other things. As a response to the inspectors’ report, the NEA introduced a policy that set strict conditions for new coal power projects. New plants will not be allowed for the purpose of “bulk power generation,” but only for “supporting” roles: supporting grid stability and supporting the integration of variable renewable energy into the grid.

However, an [assessment](#) of the coal power projects permitted in 2022–23 makes it clear that this policy is not being enforced.

- The provinces building most new coal power have been getting the majority of their new power generation from coal and are not using it to “support” a correspondingly large buildout of clean energy;
- The majority of projects are in provinces that have no shortage of generating capacity to meet demand peaks;
- Most new project locations already have more than enough coal power to “support” existing and planned wind and solar capacity.

It is possible for China to meet the commitments it has made for 2025—including “strictly controlling new coal power”—with immediate and determined action. The government [must](#) strictly enforce the policy of only permitting “supporting” coal power and review permits that have been already granted; continue clean energy and storage deployment to control coal consumption growth; carry out electricity market reforms to reduce the need for “supporting” coal power; and abandon blanket payments to all coal power plants in favor of a more effective competitive mechanism.

INDIA

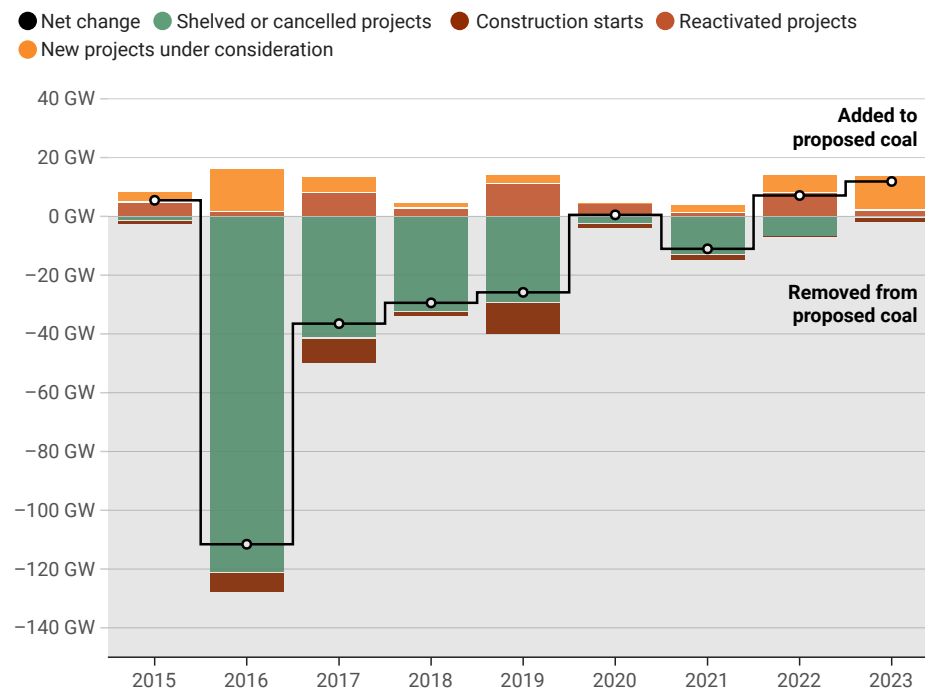
India maintains the second-largest coal fleet in the world, with its 237 GW of operating coal plant capacity representing more than a tenth of the world's operating coal. While developments in 2022 had [projected](#) mixed signals regarding the role of coal power in its future energy landscape, advancements in coal plant proposals as well as government directives in 2023 indicate that India's coal fleet could very well continue to expand for at least the next few years. In December 2023, the power minister [announced](#) plans to add nearly 88 GW of new thermal power plant capacity, much of which would be coal-fired, to the grid by 2032. With the central government having paved the way for massive coal power expansion in the coming

years, private firms are heeding the call and have [expressed](#) interest in the financing and buildout of some of India's proposed new coal capacity after years of private investment shares dwindling in the sector.

While some headlines in mid-2023 [lauded](#) the Central Electricity Authority's (CEA) updated national electricity [plan](#) as a sign of India at least temporarily "pausing" new coal additions, the same plan projected that 25.58 GW would likely be commissioned during the 2022–2027 period, with almost again as much (25.48 GW) planned for commissioning from 2027–2032.

Figure 24: India saw highest capacity of new coal projects since 2016, and almost no projects newly cancelled or shelved in 2023

Status changes of proposed coal-fired power capacity in India, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024

The "shelved or cancelled projects" category only captures capacity shifting from announced, pre-permit, or permitted statuses to shelved or cancelled, and not from shelved to cancelled. This "removed" capacity represents progress shifting away from proposed coal. However, the removed capacity from the "construction starts" category does not represent progress, as it gets coal capacity one step closer to operation. Capacity considered reactivated to construction is not featured (3.9 GW in 2022 and 1.2 GW in 2023).



After what appeared to be a promising year for beginning to phase down India's coal power dependence in 2022, the lack of retirement planning paired with new coal capacity additions and proposals in 2023 indicated that coal power capacity is unlikely to be phased down anytime soon. In 2023, India commissioned 5.5 GW of new coal capacity, more than double the capacity commissioned in 2022 (2.0 GW). Of the newly commissioned capacity, 1.8 GW is privately owned and the remaining 3.7 GW is owned by government enterprises, either via public sector undertakings (PSUs), state enterprises, or joint ventures between the two.

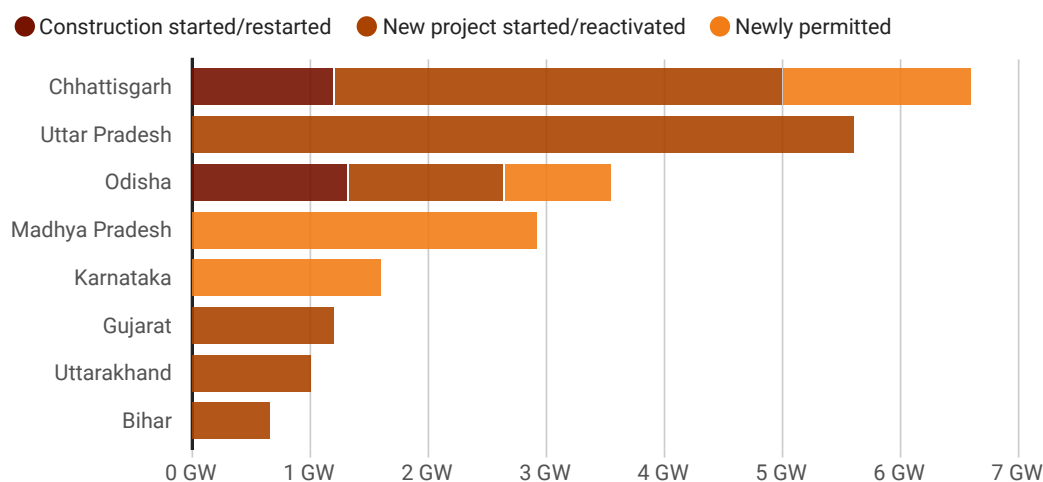
In 2023, public and private sector actors introduced 11.4 GW of entirely new coal proposals in India, which is more than newly proposed capacity in any year since 2016 (Figure 24). Although three-fourths (8.6 GW) of this new capacity is backed by government-owned enterprises, both at the central and state levels, private entities such as Essar and Adani Power also proposed the 1.2 GW [Kajurda power station](#) and 1.6 GW [Raikheda expansion](#).

2023 saw a surge in the granting of permits and pre-permit approvals to coal projects, as well as an increase in the revival of long-stalled projects. In 2023, ten coal-fired units across six power stations received environmental clearances, totalling 7.3 GW of newly permitted coal capacity for the year. An even greater capacity of coal plant proposals moved forward in the permitting process, with 15.2 GW across twelve different plants receiving Terms of Reference (ToR) in 2023. The year also saw 2.2 GW of shelved capacity, all of which was privately owned, be reactivated into the permitting process. Along with the government's pledge to [double](#) coal production within the next four years, these developments make it clear that, despite recent progress toward increasing India's renewable energy capacity, the country has no intentions of phasing coal down or out.

The states of Chhattisgarh and Uttar Pradesh have the largest operating coal fleets in India, and are currently leading expansions in the country (Figure 25), with 6.6 GW and 5.6 GW of proposed capacity moving forward in 2023 in each state, respectively. While

Figure 25: Eight states in India started, reactivated, or permitted new proposed coal projects in 2023

Status changes in India's proposed coal capacity in 2023 by state, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



Chhattisgarh is currently the state with the most operating coal capacity (26.7 GW), Uttar Pradesh could soon take the lead if all currently proposed and under-construction capacity were to be built in both states (Figure 26).

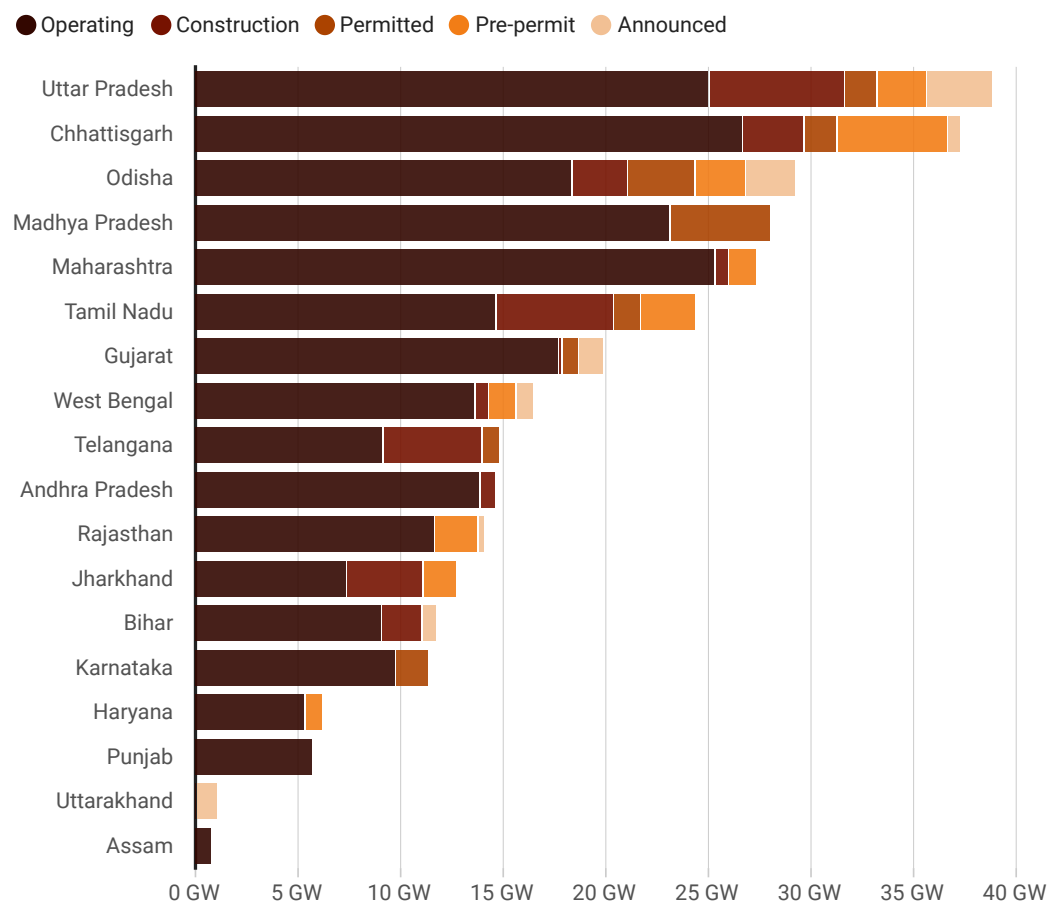
During all of 2023, only 0.2 GW of previously moth-balled capacity was formally shut down, marking an eight-year low for annual retirements. This record low is not entirely surprising given surging demand and various government signals, including CEA’s guidance in January 2023, advising power utilities not to retire any thermal power capacity until 2030.

In 2023, construction of two new units began at the Talcher power station (Stage III), adding to NTPC’s approximately 10 GW of coal-fired capacity currently under construction. In addition to the capacity already under construction, NTPC pledged in February 2024 to build another 16 GW of coal-fired capacity in the upcoming years.

Construction also appeared to resume in 2023 at the Athena Chhattisgarh power station, whose development had long been stalled and was previously presumed to be cancelled. After years of environmental permitting issues followed by insolvency proceedings

Figure 26: Uttar Pradesh could become India’s top coal-firing state if all proposed capacity is built

Coal-fired power capacity in Indian states by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



under India's National Company Law Tribunal (NCLT), Athena Chhattisgarh Power Limited was acquired by major mining company Vedanta in 2022 and finally received environmental clearance anew to continue construction in late 2023. Similarly, the [Meenakshi Energy thermal power project](#) was acquired by Vedanta via NCLT liquidation proceedings, and its resumed construction was expected to have new units ready for operation in 2024. According to IEEFA, the [acquisition and revival](#) of such stranded assets in India could be a beneficial alternative to investment in new fossil-fuel-based capacity, especially if the new project owners take on an “acquire-retire-repurpose” strategy to utilize coal only as long as short-term energy demands require before facilitating the units’ repurposing for renewable energy use.

Several other long-stalled or stranded projects were flagged by the CEA in 2023 as “likely to be revived” between 2023 and 2031. The [Jharsuguda Ind-Barath](#) and [Malibrahmani](#) power stations both received fresh Terms of Reference in 2023 following new acquisition under NCLT liquidation processes, and both projects were expected to complete the previously-stalled construction of their developing units in 2024–2025. The [Lanco Amarkantak plant](#), whose third and fourth units had been on a “construction hold” since 2016 due to the owner’s ongoing corporate insolvency resolution process (CIRP), was undergoing a revival in

2023 and early 2024 as Indian energy giants Adani and Jindal Power competed in a bidding war to acquire the stressed power project. The [Bijora](#), [Binjkote](#), and [Gorgi](#) power stations were also all indicated by their owners or the CEA to be undergoing preparations in 2023 for revival in the coming years.

In addition to the 3.4 GW of stalled capacity which was already revived in 2023, India’s power ministry has [urged](#) state-owned power firms to take advantage of stressed and stranded power assets by acquiring them via NCLT processes under the country’s Insolvency & Bankruptcy Code. Considering this policy, public and private power companies may continue to direct investments toward the revival of coal projects which have long been considered shelved or cancelled.

At the same time, the country continues to face the worsening public health and environmental impacts of coal. The environment ministry introduced more stringent pollution standards for coal plants in 2015, but the deadline to comply with the standards has been repeatedly ignored and [pushed back](#). An orderly move towards clean energy will 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.

EU27+UK

The phaseout of coal-fired power generation is well underway in the European Union (EU) and United Kingdom (U.K.). The rate of capacity retirements in the region rebounded in 2023, with 3.8 GW of operational capacity retired and a further 1.1 GW of mothballed capacity retired throughout the year, following a two-year near-pause in retirements as the energy crisis struck Europe. What is less clear is how the current rate of coal plant decommissionings can be reconciled with the Paris Agreement, which calls for all developed countries to phase out coal by 2030. The EU and

U.K. are leaders in the global coal phaseout effort, but as the turn of the decade gets closer, the region’s pace of retirements is not yet Paris-aligned.

Since 2015, the EU and U.K. have retired an average of 5.4% of the overall operating coal capacity each year.⁷ The percentage has fluctuated over the last ten years, with a high of 10% retired in 2020 and a low of just 2.6% retired in 2022. Energy security concerns in light of Russia’s war in the Ukraine caused a region-wide hesitation to take coal plants offline in 2022 as Russia’s

7. This average includes capacity that went from “operating” to “retired” each year and does not account for mothballed capacity. There was 2.3 GW of capacity considered mothballed in the EU/U.K. as of December 2023.

actions brought a shock to Europe's gas supply, but this blip is not symptomatic of a coal "comeback;" rather, countries have reaffirmed their commitment to replacing coal capacity with a combination of gas, renewables, and other energy sources. However, new gas infrastructure in the region is [not necessary](#).

Lately, the structural decline of coal power is gaining new speed. According to analysis by Ember, coal generation saw an "unprecedented" collapse in 2023 of 26%, and just 12% of the EU's electricity generation last year came from coal. Renewable energy generation [surpassed](#) 40% of total electricity generation in the EU for the first time.

Just six countries in the region lag behind the standard and have not committed to phasing out coal by 2030. Bulgaria, Croatia, the Czech Republic, Poland, Romania, and Slovenia plan to stop using their coal-fired power stations between 2032 and 2049. Of their combined 44.1 GW of operational capacity, only 11.5 GW across 77 units has individual planned retirement

dates by 2030. This leaves the EU with 32.6 GW across 178 units out of alignment with a 1.5 degree warming scenario (Figure 27).

In order to achieve a total coal phaseout by 2030, the EU and U.K. must retire an average of 15.6 GW of capacity each year for the next seven years. This is 1.5 GW more per year than the region's 2020 high of 14.1 GW and is nearly double the annual average from 2015 to 2023 of 7.9 GW. Though considerably faster than the pace of the phaseout to this point, the deadline for the region is still achievable, assuming political will among national decision makers. 10.9 GW of capacity is already planned to retire sometime in 2024. A further 10.1 GW of capacity still in operation was originally slated to retire between 2020 and 2023 and could see updated planned retirement dates established within the Paris-aligned timeline.

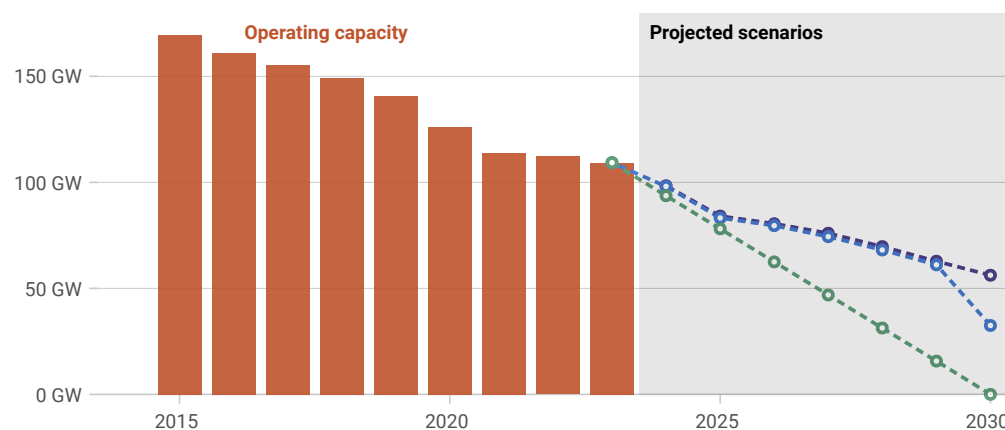
Ireland, Slovakia, Spain, and the United Kingdom are committed to phasing out coal by 2025. Ireland and the U.K. each had just one operating coal plant at the end

Figure 27: The EU's current coal phaseout commitments only go halfway towards Paris Agreement climate targets

Operating coal-fired power capacity and projected scenarios to 2030 based on planned retirements and phaseout commitments in the EU27 and U.K., in gigawatts (GW)

Projected scenarios based on:

- Planned retirements
- Planned retirements + phaseout commitments
- Needed in 1.5 degree pathway



Source: Global Coal Plant Tracker, January 2024

Note: The U.K. has committed to phase out coal power capacity by 2024



of 2023. Ireland's 0.9 GW [Moneypoint power station](#) will retire by 2025. The U.K., which has retired a substantial 33.7 GW of coal capacity since 2000, will retire its final coal plant in September 2024. The four-unit, 2.2 GW [Ratcliffe power station](#) was slated to have one unit retired in 2022, but all units remained in operation throughout 2023 for [energy security reasons](#). Spain plans to retire just over a quarter of its remaining coal capacity in 2024, and the remaining 2.2 GW is expected to be retired in 2025. Slovakia's three remaining on-grid units at the [Kosice power station](#) and [Vojany I power station](#) will retire in the first half of 2024, [expediting](#) the country's phaseout by six years.

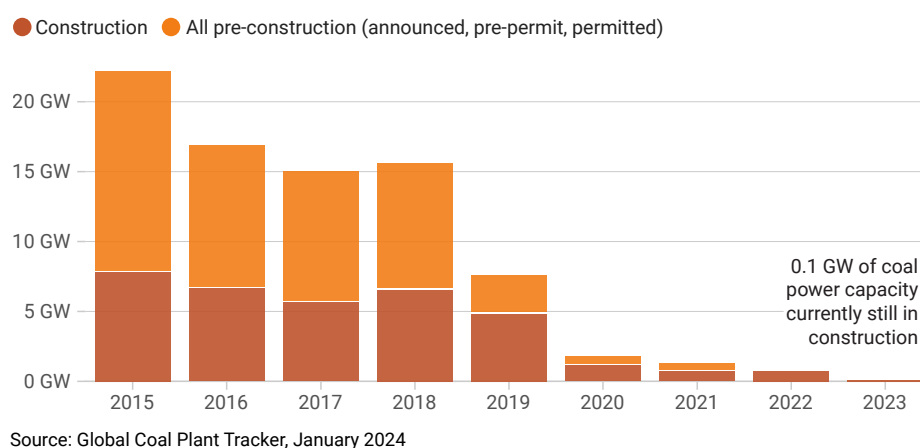
Denmark, Finland, France, Germany (uncertain, see details below), Greece, Hungary, Italy,⁸ and the Netherlands have planned coal phaseout dates between 2025 and 2030. France, Greece, and Hungary all had earlier commitments that were subsequently delayed. France pushed its date back from 2022 to 2027, and the country and its overseas territories retained 2.5 GW of operational capacity across eleven units at the end of 2023. Germany's July 2020 Coal Power Exit Law established 2038 as the country's formal coal phaseout year, but a pending analysis of the government's phaseout plan

[stated](#) that Germany would phase out coal "ideally by 2030." About 45% of Germany's operating coal capacity has an individual planned retirement date between 2024 and 2030, regardless of the analysis' conclusion. In Denmark, just one unit at the [Nordjylland power station](#) will operate beyond 2024.

Focus in the EU and U.K. has pivoted almost entirely to coal plant retirements in recent years, but minor growth in the operational capacity of the region has not yet faded into history. Greece saw new coal capacity commissioned last year, with the 0.7 GW Unit 5 at [Ptolemaïda power station](#) brought online in February 2023. The unit was considered to be [economically unviable](#) and would likely only burn coal for six years. Additionally, Poland still has the 0.1 GW [Pulawy power station](#) under construction as of December 2023; the project has been under construction since 2019 and has faced [equipment issues](#) and ongoing [financial problems](#) over the last few years, leading to serious delays. Should the project in Pulawy be either cancelled or commissioned, there will be no more coal-fired power stations in development or construction in the region (Figure 28), and the goal of a complete coal phaseout can be fully prioritized.

Figure 28: Coal power capacity in development in the EU27 and U.K. down to a single coal plant

Coal-fired power capacity in construction and pre-construction (announced, pre-permit, permitted), in gigawatts (GW), in the 27 EU member states and the United Kingdom



8. In March 2024, Italy's Energy Minister [announced](#) that the country would phase out its coal plants by the end of 2025. However, this did not apply to its operating capacity on Sardinia island, namely the [Sulcis power station](#) and the [Fiume Santo power station](#).

Though an acceleration in coal plant retirements will be necessary in the EU and U.K. over the next several years, these countries are showing promising signs of what a coal-free global region could look like. The closure of coal plants is coupled with the massive increase of new renewable energy capacity, meaning that the power sector's environmental and public health impacts will continue to decline through the

UNITED STATES

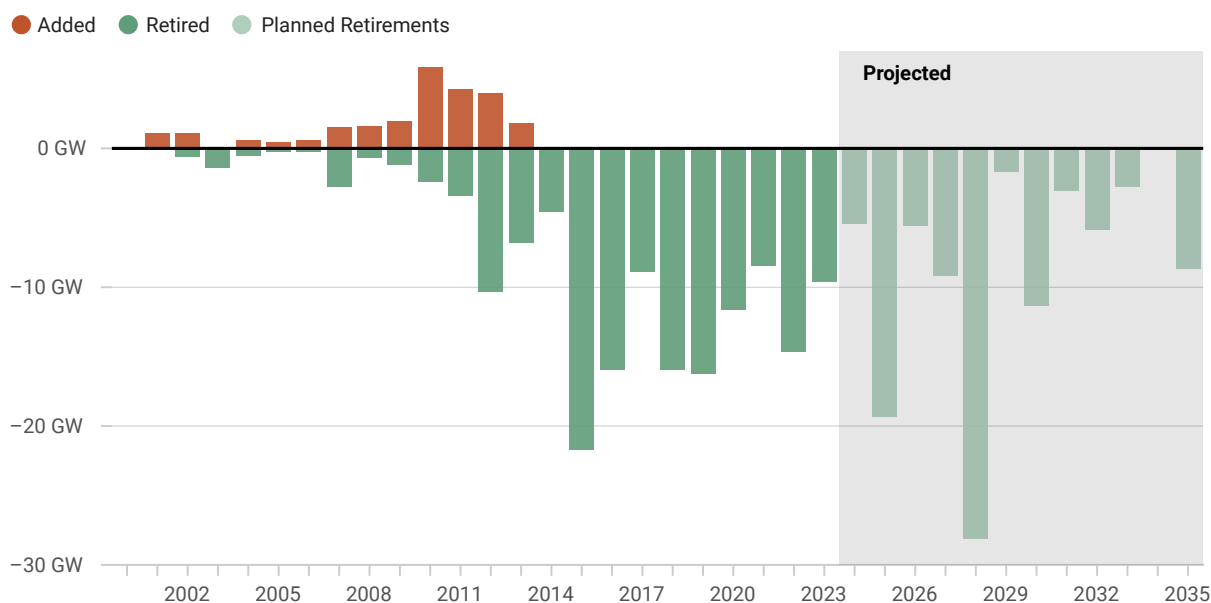
Coal plant retirements in the U.S. totaled 9.7 GW in 2023, a slowdown compared to 14.7 GW retired in 2022 (Figure 29). The country still maintains 200.1 GW of operating capacity representing the third largest coal fleet in the world behind China and India. But the nation's shift away from coal continues — coal use at U.S. power plants is [dwindling](#), retirement dates are lining up, and the coal fleet is aging.

end of the decade. Phaseout dates being delayed when they approach cannot become a region-wide trend; as long as that is not the case, the EU and U.K.'s coal-fired capacity will collapse by 81% by 2030 compared to when data collection began for the Global Coal Plant Tracker in 2014. Upcoming discussions on the EU's 2040 climate and energy targets should [accelerate](#) those developments.

According to analysis by the Sierra Club, 13 GW of coal capacity was given newly announced or expedited retirement dates in 2023. The Sierra Club Beyond Coal Campaign and partners have been working to speed up coal unit closures across the country. The [Monroe Power Plant](#) in Michigan, for example, was previously expected to retire in 2040, but in 2023, DTE Electric reached an agreement with the Sierra

Figure 29: Planned retirements signal U.S. coal capacity will continue to fall, but pace must increase to meet climate commitments

Coal-fired power capacity added and retired in the United States (2000–2023) and planned retirements through 2035, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



Club and more than 20 other Michigan organizations to [retire](#) the plant entirely by 2032. Michigan is one of six states that are slated to retire all operating coal capacity by 2035. An additional eight states in the U.S. have already exited coal power.

Between 2024 and the end of 2035, about half of the current operating coal capacity in the U.S. is expected to be decommissioned or converted to another fuel (101.2 GW out of 200.1 GW). And most of the remaining coal fleet by that time will be nearing the end of its expected lifetime. If retirements occur as planned, 73 GW of operating capacity will be 50 years or older in 2035. The average age of U.S. coal plants at retirement is currently 52 years. These aging coal facilities will become increasingly [costly](#) to maintain and run relative to cleaner energy sources, especially as Inflation Reduction Act tax credits continue to make wind, solar, and energy storage cheaper.

In 2023, the Environmental Protection Agency proposed new rules limiting greenhouse gas emissions from coal power stations, potentially adding to the cost of coal. Plants planning to retire after 2040 would need to slash emissions by 90% before 2030 and [invest](#) in expensive carbon capture technologies for pollution control. In contrast, plants retiring ahead of 2032 would avoid the emissions reduction requirement and its associated cost. The U.S. must align with economic reality and accelerate its move away from coal power by increasing the pace of retirements while investing in cleaner technology for coal communities. States can take inspiration from many parts of the country where the coal-to-clean transition is already happening, such as Hawai'i, which closed its only coal plant in 2022 and [replaced](#) the capacity last year with responsive, advanced grid battery technology.

The U.S. was one of twelve countries that joined the Powering Past Coal Alliance during the COP28 climate conference last year, publicly signaling an intention to [phase out](#) unabated coal power. While encouraging, this leaves room for coal to stick around while it is

paired with the uncertain promise of carbon capture and storage (CCS) technologies. CCS in the power sector has yet to be [proven](#) successful and its high costs present an unnecessary risk to coal plant owners and ratepayers. (See, e.g., “The Role of ‘Clean Coal’ Technologies in Decarbonizing the Coal Power Sector” in [Boom & Bust Coal 2022](#).) At the [Parish Generating Station](#) in Texas, for example, the Petra Nova CCS project has had a sporadic record since its announcement nearly fifteen years ago. It [restarted](#) last year after a three-year shutdown. In Wyoming, electricity customers will [pay](#) a “low carbon surcharge” to help the operators of [Wygen II power station](#) determine the viability of CCS at the plant. Actually retrofitting the power station with CCS could [cost](#) over US\$500 million. Two new coal plants are theoretically still under consideration in the U.S.: the [CONSOL Energy Mining Complex power station](#) in Pennsylvania and, added in 2023, the [Susitna power station](#) in Alaska. Both projects are envisioned as potential sources of carbon emissions for CCS projects receiving funding from the Department of Energy. Beyond the financial risks, coal plants that prolong operations with CCS technology will continue to [emit](#) fine particle pollution and toxic gasses that pose hazards to public and environmental health.

Among the more surprising technologies that threaten to prolong the life of coal in the U.S. are artificial intelligence and cryptocurrency. Both require immense computing power that's driving the [growth](#) of energy-hungry data centers, which in turn pushes coal plants to [stay online](#) to meet demand. For example, [South Oak Creek Plant](#) in Wisconsin has plans to retire by 2025, but last year, its owners said they would not rule out [delaying](#) retirement to help power a US\$1 billion planned data center by Microsoft. The [Lawrence Energy Center](#) in Kansas was slated to stop burning coal in 2023, but is now expected to retire in 2028. Its owners cited the need to [serve](#) growing electricity demand, including a data center by Meta.

TÜRKIYE

Though Türkiye continued to develop its domestic coal industry in 2023, the Europe-Asia straddling country dropped to eighth place for proposed coal plant capacity globally. Still, Türkiye maintained its lead with the most proposed capacity (4.8 GW) compared to other countries in the OECD and in the surrounding Eastern Europe and Western Asia regions. The country did not commission or start construction on any coal-fired units in 2023, but plans at six coal plants appeared to be ongoing.

Türkiye's operating coal fleet has grown by 5.2 GW since 2015, expanding by 34% (Figure 30). There was potential for a substantially larger increase in total capacity, but 73.8 GW of capacity was cancelled or presumed to be cancelled over the same time period. Litigation and government agency decisions have blocked or stalled several projects recently, including the [Kirazlıdere power complex](#), [Alpu power station](#), [Afşin-Elbistan C power station](#), and [Ilgın power station](#).

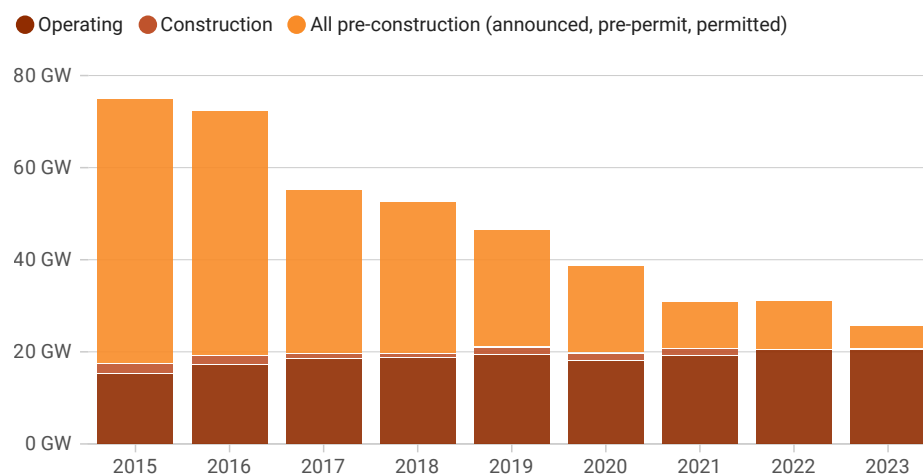
Even the projects that have been fully constructed are not all operating predictably. Some power stations were offline for long periods following the grave 6.4 magnitude earthquake in February 2023, including

the [Afşin-Elbistan B power station](#), which was offline for three months. At the end of 2023, the [Yunus Emre power station](#) was still not operating properly and had been idling for a long period. Unit 2 at the power station is the only unit in Türkiye in a construction phase, despite stated intentions to have the project fully operational in mid-2023; in September 2023, 190 workers at the adjacent coal mine staged an underground [hunger strike](#) over unpaid wages.

Citizen opposition to the environmental, socioeconomic and public health implications of Türkiye's position on coal has been notably strong, with organizing and protest efforts [resulting](#) in police violence. Despite opposition, the government of President Recep Tayyip Erdogan has [reiterated](#) its pro-coal stance, approving deforestation for the purpose of coal mine expansions in August 2023. The ten-year energy agreement [signed](#) between the United Arab Emirates and Türkiye in 2023 includes cooperation on up to 3 GW of new coal investment, threatening a resurgence of momentum for coal plant development in the country. Türkiye does not have a planned coal phaseout date or a Paris-aligned decarbonization roadmap.

Figure 30: Türkiye's proposed coal capacity has faltered since 2015, with significantly more capacity cancelled than brought online

Coal-fired power capacity in Türkiye by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



A March 2023 documentary [highlighted](#) the devastation of the city of Muğla caused by the [Kemerköy power station](#), [Yatağan power station](#), and [Yeniköy power station](#). According to residents, the Kemerköy power station has been [operating illegally](#) since the 1990s, and the development of a related coal mine in the Akbelen Forest is heavily [opposed](#). The Yatağan power station was in court over water rights issues as of November 2023; Muğla residents stated that drinking water scarcity is a growing concern, while the power stations [exploit](#) water resources that could be used by hundreds of thousands of people annually. In June 2023, an employee of the Yeniköy power station anonymously [alleged](#) that chimney air filters were turned off at night to save on costs.

The present and future health impacts of the coal industry did not go unconsidered in Türkiye's citizen action throughout the year. The Health and Environment Alliance [calculated](#) in April 2023 that a phaseout of coal in Türkiye by 2030 would lead to 102,601

premature deaths avoided. In August 2023, residents [associated](#) “poison” from the [Orhaneli power station](#) with high levels of respiratory illness and cancer, and, in November 2023, a Manisa deputy politician stated that 39,000 people had [died](#) from cancer associated with pollution from [Soma power station](#).

Even so, the phaseout of coal in Türkiye cannot be instantaneous, as many local economies depend heavily on the existence of the coal industry. In December 2023, a “social fragility analysis” showed that the [Tufanbeyli power station](#) and the associated coal mine [employed](#) nearly 20% of the population of Tufanbeyli, illustrating that the concentration of the coal industry in several regions means that the diversification of the economy must be conducted carefully. For Türkiye to achieve a fair and just energy transition, the livelihoods of the country's coal communities must be considered, with training and alternative forms of employment available in the fledgling renewable energy industry.

INDONESIA

To meet the goals of the Paris Agreement, Indonesia must phase out coal-fired power plants by 2040. Currently, Indonesia has no coal phaseout or carbon neutrality target until 2060, and only 2 GW (3.9%) of the total operating capacity has a retirement date before 2040. According to the Institute for Essential Services Reform, Indonesia must [phase out](#) 9.2 GW of coal capacity by 2030 to be on track with the goals of the Paris Agreement. Yet, based on the National Electricity Supply Business Plan (RUPTL) 2021–2030, Indonesia's coal power capacity will continue to [increase](#) by 13.8 GW through the end of the decade.

Simultaneously, electricity demand is increasing less rapidly than expected, and overcapacity already exists in the Java-Bali and Sumatra grids. Overcapacity is continuing to [grow](#) with the addition of the [Central Java Power Project](#) and [Tanjung Jati B power station](#).

The 2024 Indonesian presidential election took place in February, and the provisional results of the election showed Prabowo Subianto receiving the most votes

and securing the position as President of Indonesia for 2024–2029. Prabowo has a [vision](#) in the energy sector for the next five-year government period, including a commitment to increase green energy from wind, solar, and geothermal sources. He promises to ease regulations on renewable energy investment and increase the renewable energy mix in the national utility (PLN) grid.

However, Prabowo has not mentioned the issues central to Indonesia's energy transition: the phaseout of coal plant proposals and the early retirement of operating coal plants. Uncertainty continues around Indonesia's commitment to the Paris Agreement over the next five years.

In January 2024, signs that Indonesia is not serious about its energy transition were already prevalent, with the planned [reduction](#) in Indonesia's renewable energy mix target from 25% to 17–19% by 2025. Policies encouraging solar adoption have also recently been [backpedaled](#), further hampering the deployment

of commercial renewable energy technology. According to the Ministry of Energy and Mineral Resources, Indonesia's renewable energy power capacity only **increased** by 539 MW in 2023, bringing renewables' total share of the energy mix to 13.1%. The country **ranks** eighth among the countries in Southeast Asia for operating solar and wind capacity, but it ranks third for prospective solar and wind capacity.

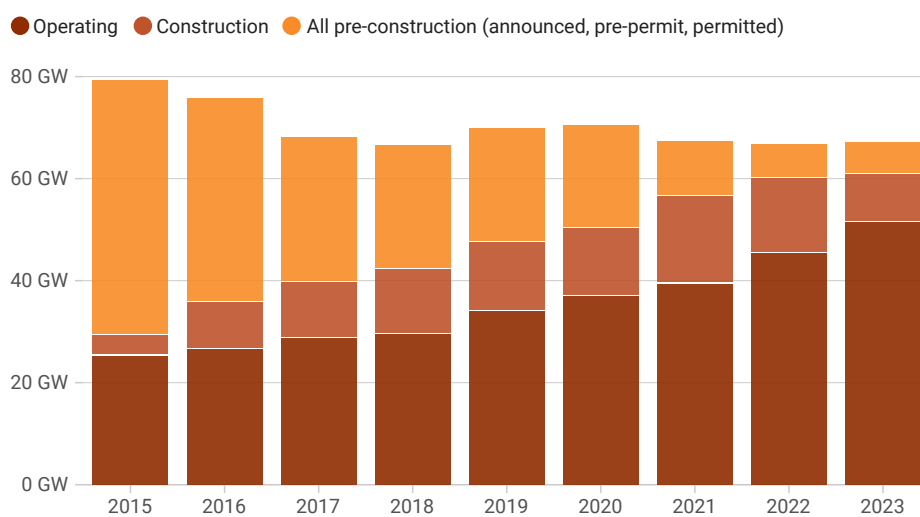
Indonesia is involved in a US\$20 billion Just Energy Transition Partnership (JETP) agreement with the U.S. and Japan-led International Partners Group countries and investors from the Glasgow Financial Alliance for Net Zero. The JETP has been heavily criticized for its debt-dominated funding composition, with the grant portion of the partnership **representing** less than 1% of the commitment value. In addition, the target for the early retirement of coal-fired power stations **shrank** from 5.5 GW to 1.7 GW according to the November 2023 investment plan. The JETP also does not currently address the problem of pollution from captive coal plants, though a captive power decarbonization roadmap was reportedly in development. A full, updated JETP Comprehensive Investment Plan and Policy is slated to be released in late 2024.

Indonesia's energy transition faces a singularly difficult situation. The metal processing industry for the renewable energy transition, which is booming in some provinces, is **powered** by coal. As much as 27.5% of the coal-fired power plants operating in Indonesia are captive, and there was ten times more captive coal plant capacity operating in the country at the end of 2023 than there was in 2013. However, the government's efforts to shift from coal to renewable energy are currently limited to the electricity grid. Captive power plant capacity in Indonesia is projected to continue growing. 5.9 GW of new coal capacity began operating in Indonesia in 2023 (Figure 31). Of this, 3.3 GW is captive capacity and 2.6 GW is on-grid capacity.

New projects to power the nickel smelter industry are moving forward rapidly, including the controversial **PT IHIP power station**, expected to begin operations in March 2024. The 1.1 GW **Adaro Aluminum Smelter power station** is also reportedly moving forward to power Indonesia's Kalimantan Industrial Park while a hydroelectric plant is under construction. The captive power plants that are newly operating or under development are almost all to support the nickel industry and are affiliated with China, and China's involvement

Figure 31: Indonesia's operating coal capacity has doubled since 2015

Coal-fired power capacity in Indonesia by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



in the construction of new coal plants in Indonesia is inconsistent with President Xi Jinping's September 2021 pledge to [stop](#) building coal plants abroad. According to the Centre for Research on Energy and Clean Air, coal plants built for the nickel industry in Indonesia will [result in](#) nearly 5,000 deaths per year by 2030, equivalent to an economic burden of US\$3.4 billion annually.

Indonesia's processed nickel has [become](#) abundant and cheap, but captive coal plants make the product even dirtier. Instead of aiming to be part of the energy transition through battery technology, as little as 3% of Indonesia's nickel is currently [used](#) for batteries. However, captive coal plants were recently [classified](#) as "facilitating emission reduction" by the Financial Services Authority (OJK), Indonesia's financial sector regulatory body. OJK changed the financial taxonomy from a traffic light scheme (red, yellow, and green) to a "green" versus "transition" dichotomy. In the new financial taxonomy, captive coal plants fall into the "transition" category. The general principle of the transitional category includes activities that are not yet in line with a net zero emission path but are supposed to move towards a green classification in line with the Paris Agreement.

PAKISTAN

The capacity of Pakistan's young coal fleet has swelled to 7.6 GW in just eight years. In 2023, the country was one of a handful to add new operating capacity, with 1.7 GW coming online at the [ThalNova](#) and [Thar Block I](#) power stations. Both projects were built under the China-Pakistan Economic Corridor (CPEC) framework, with last year [marking](#) ten years of the controversial partnership between the two countries.

The new coal capacity presents additional challenges for the country's financially-troubled power sector and ongoing economic crisis. In March 2023, the [Port Qasim Electric Power Company](#) plant was at immediate risk of shutting down due to Pakistan's [default](#) on its financial obligations. In August, protests [erupted](#) nationwide as residents struggled with unprecedented

With present conditions facilitating the construction of coal-fired power stations, Indonesia will continue to be a country with an acute addiction to coal. The country ranks fourth in the world for newly proposed coal capacity in 2023, which is attributed to the 2.5 GW [Xinyi Group captive power station](#) at the proposed Rempang industrial estate project on Rempang Island, Batam. The project has been met with widespread public [opposition](#), as nearly 1,000 families will be [displaced](#). Concerns [persist](#) over air pollution, water pollution, and solid waste impacts from the industrial estate project.

While coal plant capacity increases, especially captive capacity, Indonesia also continues to be the world's largest coal exporter and will continue to [increase](#) its coal production in 2024. The December 2023 early retirement [announcement](#) of one unit at the [Cirebon power station](#) is outweighed by record-breaking coal production driven by both global demand and domestic demand. It will take tremendous effort and strong political intervention for Indonesia to expedite a move away from coal. Without this, Indonesia will only plan for a failed energy transition.

electricity bills. The soaring electricity costs are [driven](#) in part by high capacity payments to independent power producers, "take-or-pay" contracts that require purchasers to buy power or pay a penalty, and expensive coal imports that drain the country's foreign exchange reserves. The Government of Pakistan is counting on [boosting](#) domestic coal use to ease some of the financial burden. Late in 2023, the government allocated 56 billion rupees (US\$188 million) to [construct](#) a 105-km-long railway connecting the Thar coal fields to Port Qasim, where coal-fired plants belonging to [Port Qasim Electric Power Company](#) and [Lucky Electric Power](#) are located. At the same time, power plant owners were also embracing local coal. A unit at the [Jamshoro power station](#), originally conceived to run on a blend of imported and domestic

coal, was the subject of lobbying for conversion to local Thar lignite. The surging cost of oil prompted operators of the aging [Lalpir Power Limited](#) and [Pakgen Power Limited](#) plants to propose [converting](#) their existing oil-fired boilers to Thar coal, a switch that has received [support](#) from the national power transmission company. Local authorities also appear interested in Thar coal [gasification](#) to address the country's energy crisis.

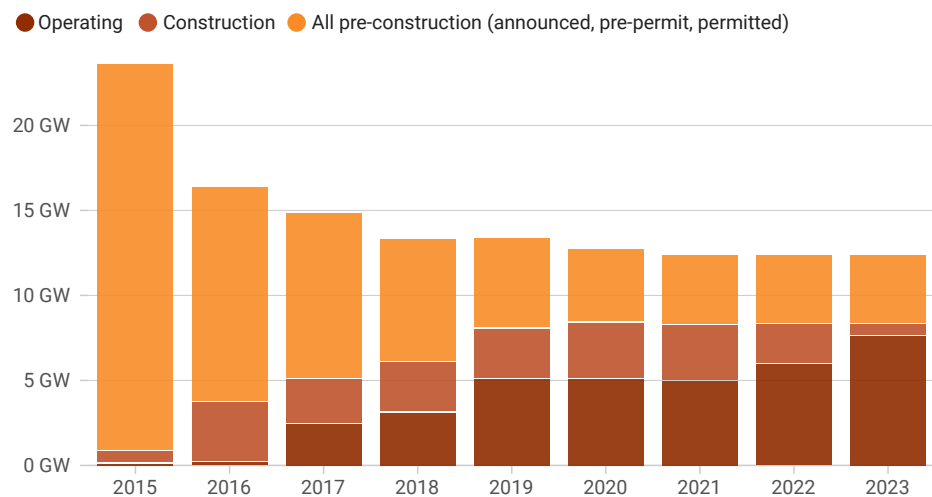
In early 2023, Pakistan's energy minister announced plans to [quadruple](#) coal power capacity in the country using domestic coal. Those plans did not materialize into newly proposed projects, as coal proposals saw little activity in 2023. Pre-construction capacity has been shrinking since 2015 and has hovered around 4 GW for the last few years (Figure 32) following the previous government's [moratorium](#) on new imported coal power in 2020. Despite Pakistan's moratorium and China's pledge to [stop financing](#) "new build" coal projects overseas, the proposed [Gwadar power station](#) still appears on the CPEC project roster. Plans for the plant have [varied](#) since its announcement in 2016. It has yet

to begin construction but is slated to burn imported coal after China refused Pakistan's request to [switch](#) to domestic Thar coal. Project delays continue to [mount](#), as developers requested for a third time that the electricity tariff be raised. A previous 182% tariff hike mid-year had already caused the project's estimated cost to [balloon](#) to 103 billion rupees (US\$1.2 billion). Government leadership in Pakistan and China maintain their [commitment](#) to the Gwadar plant, however, with Pakistan seeking to [expedite](#) the project.

The only construction start in Pakistan last year was Mughal Iron & Steel's small captive [Sheikhupura power station](#). The project now plans to [co-fire](#) bagasse and cotton sticks with coal. Since 2021, construction starts each year have amounted to 40 MW or less in the country. With few projects recently beginning construction and only 0.7 GW remaining under construction, Pakistan has the opportunity to transition away from new coal and the financial troubles that come with it.

Figure 32: Pakistan's operating coal fleet continues to grow

Coal-fired power capacity in Pakistan by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



BANGLADESH

A rush of coal plant commissionings marked the last few months of 2023 in Bangladesh. 1.9 GW of coal capacity came online, a record high since the country's first coal-fired power station started operating in 2006. The country's coal plants depend heavily on imported coal, however, and much of its installed capacity was not fully used throughout the year as several power stations [faced repeated shutdowns](#) from fuel shortages.

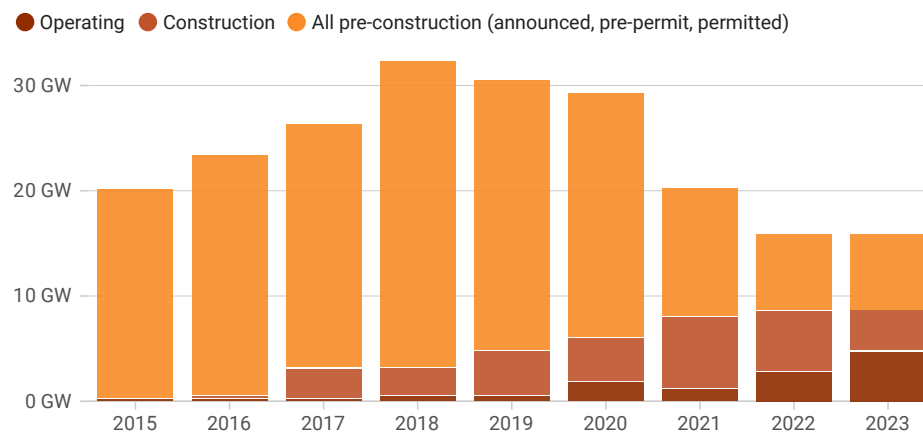
After years of project delays and fines, the S. Alam Group commissioned both units of its [Banshkhali power station](#) in quick succession. The first unit of the [Matarbari power station](#) also began operating with funding from the Japan International Cooperation Agency, which [claimed](#) that its loans counted as “climate finance” under the 2015 Paris Agreement. The added units bring Bangladesh's growing operating coal capacity to 4.8 GW (Figure 33). Another 3.9 GW are under construction. The [Patuakhali \(RCPL/Norinco\) power station](#) saw significant construction progress last year and is expected to begin operating in 2024, and a second phase of the adjacent [Payra coal plant](#) by Bangladesh-China Power Company Ltd. also remains on the books with anticipated unit commissioning dates in 2025 and 2026.

In 2023, weak national currency had left Bangladesh without enough foreign dollars to [buy](#) imported coal amid a summer heatwave and surging demand for electricity. The much contested and costly [Rampal power station](#), for example, shut down six times by mid-year from coal shortages and equipment failures. [Rising](#) coal-fired generation alleviated some of the outages by the end of the year, but financial troubles remain. The Bangladeshi government is [racking up](#) outstanding electricity bills from independent power producers, which receive guaranteed capacity payments for coal power even if their plants [sit idle](#). Coal's volatility in Bangladesh highlights the country's need to [shift](#) to renewable energy for longer term energy security and economic stability.

Bangladesh still has 7.2 GW of coal capacity under consideration, ranking third in the world behind China and India. However, in 2023, little progress was made on coal proposals, which have been largely shrinking since 2019 (Figure 33) and appear increasingly unlikely. The only proposed project that advanced was the government-backed [Maheshkhali power station](#), which began [pre-feasibility studies](#) but has had its expected start date repeatedly postponed.

Figure 33: Bangladesh with record operating coal capacity increase in 2023, while mostly stalled proposals persist

Coal-fired power capacity in Bangladesh by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



There were no construction starts for a second year in a row, and there were no new proposals for coal power in 2023. In addition, the 2 GW [Phulbari power station](#), a partnership between GCM Resources and China Gezhouba Group International Engineering, moved from shelved to presumed to be cancelled in the past year. The other coal proposals remaining in Bangladesh face uncertain futures. GCM Resources suggested that their 4 GW [Phulbari plant](#) with Sinohydro was an “[option](#),” but the proposal is absent from government planning documents. A second phase of the [Matarbari power station](#) still [appears](#) on government lists of future projects, although Japan announced its [exit](#) from the project in 2022. And a potential [relocation](#) of the proposed [Orion power station](#), which continues to struggle to find any solid funding commitment, appeared to delay commissioning dates yet again.

But the risk of additional investments in coal persists in Bangladesh. In an updated [Integrated Energy and](#)

[Power Master Plan](#) (IEPMP), the Ministry of Power, Energy and Mineral Resources projects that coal power will continue rising into the 2030s and peak in the 2040s. Other concerning plans include co-firing coal with ammonia in an effort to reduce greenhouse gas emissions, and potentially boosting domestic coal supply for power generation. A close study of the updated plan by the Institute for Energy Economics & Financial Analysis (IEEFA) shows that Bangladesh must [reevaluate](#) its approach, which escalates the country’s overcapacity problems and underestimates the reliability and cost-effectiveness of renewable energy sources. Civil society groups and environmentalists also continue to [speak out](#) against coal development in the country. And the proximity of several coal plants to the Sundarbans, the world’s largest mangrove forest, prompted the UNESCO World Heritage Committee last year to [push](#) Bangladesh for more details on how coal power and transport are impacting the diverse and threatened habitat nearby.

VIETNAM

Vietnam’s proposed new coal plant capacity continued to shrink last year, cancelling the most coal capacity in the world in 2023 (10.2 GW). The country has repeatedly adjusted its projected energy system plans over the last several years, with various drafts of the updated Power Development Plan indicating that Vietnam’s [fivefold increase](#) in electricity demand since 2000 will be met by increasingly non-coal power sources through the end of the decade and beyond.

In May 2023, the official version of [Power Development Plan VIII](#) (PDP8) was approved by the prime minister and released to the public. The plan states that Vietnam will continue to increase its coal capacity through 2030, peaking at 30.2 GW and steadily phasing out to 0 GW by 2050. The US\$15.5 billion Just Energy Transition Partnership (JETP) funding package agreed on by the Group of Seven (G7) countries in December 2022 stipulates that the country will reach peak emissions in 2030 rather than 2035, which PDP8 appears to be in alignment with. Vietnam already has

27.2 GW of operating coal capacity as of December 2023, suggesting that no more than 3 GW of additional capacity should be brought online.

However, 3.9 GW of capacity across six units remained under construction at the end of 2023. This is in addition to 4 GW of capacity understood to be in “pre-permit” and “permitted” phases at the [An Khánh - B c Giang](#), [Na D ng-2](#), [Nam Đ nh-1](#), and [Sông H u-2](#) power stations. The volume of pre-construction capacity in Vietnam is down from the 50.9 GW that was proposed ten years ago, a 92% decrease. Many of these projects have been cancelled or have been re-proposed without the use of coal. According to PDP8, five remaining laggard coal proposals, some of which have already been stalled for ten years or more, were granted until June 2024 to either make progress or be cancelled. Yet, to remain aligned with PDP8 and JETP emissions and capacity projections, all coal plant proposals not yet under construction must be officially called off.

Vietnam has an existing coal fleet of 76 coal-fired power station units, over half of which have been commissioned since 2015. The country commissioned [Thái Bình-2](#) and [Vân Phong-1](#) in 2023, both of which had been in development since at least 2011. Many coal projects in the country have been, in the words of PDP8, chronically “behind schedule, facing difficulties in changing shareholders and arranging capital.” Vietnam already [boasts](#) the largest operating utility-scale solar and wind capacity in Southeast Asia, and the country is in the top ten globally with its 86 GW of prospective solar and wind capacity. The country ought to lean into a fossil-to-renewable energy pivot rather than depending on “clean” biomass and ammonia conversion plans for its operating coal fleet, or Vietnam could face long-term technological infeasibility and stranded asset risks.

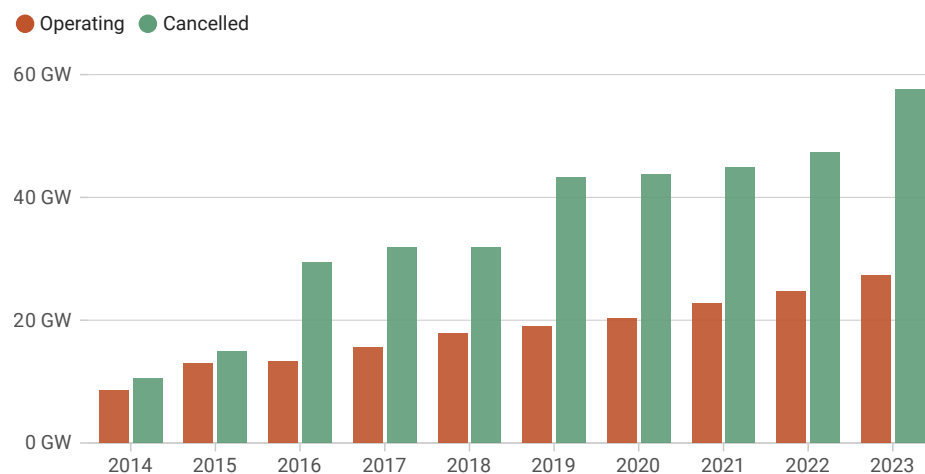
In December 2023, the JETP [Resource Mobilization Plan](#) (RMP) for Vietnam was released. The plan is consistent with the goals of PDP8, with the transition of coal power generation included as one of eight key “Regulatory Categories.” The JETP-RMP hopes to “reduce the pipeline of coal-thermal power generation projects,” “negotiate suspension of new investment in coal-thermal power plants that do not have emission

reduction technology,” and “negotiate to transform or close old, inefficient coal-thermal plants.” However, retirement dates and conversion plans were not included at the plant level. The plan claims that a coal phaseout at a large scale is infeasible in Vietnam in the short-term, but it does state that a “detailed timetable” for JETP-related activities would be prepared in early 2024.

Broadly, the trends from Vietnam’s recent policy making decisions surrounding coal-fired power stations can be seen as [cautiously optimistic](#). Coal plant cancellations continue to outpace new commissionings (Figure 34), and the country may have no remaining coal plant proposals as soon as mid-2024. Yet, there is still significant progress to be made. Global human rights organizations, together with international partners, continue to express concern over Vietnam’s ongoing pattern of detainment of climate leaders. The “J” in JETP stands for just, and for Vietnam and G7 partners to successfully deploy a just energy transition in the country, open and transparent participation from civil society and the public is required. Vietnam must prioritize the release of imprisoned climate leaders to avoid stifling the energy transition strategy that is trending towards success.

Figure 34: Vietnam’s operating coal capacity continues to grow, but many projects being cancelled

Operating and cancelled coal-fired power capacity in Vietnam, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



LAOS

In 2023, Laos had 8.5 GW of operating hydropower capacity and 1.9 GW of operating coal capacity. Laos is a net exporter of electricity, rich in hydropower thanks to its western border's positioning along the Mekong river. The country experiences temporal variability in power generation, with excess power in the wet season from May to October and power shortages in the dry season from November to April. In recent years, Laos has deliberated various methods for easing the fluxes in electricity availability, including the consideration of 9.2 GW of coal-fired capacity, 5.4 GW of which is still proposed as of December 2023.

The country's Renewable Energy Development Strategy [targets](#) that renewable energy will account for 30% of energy consumption by 2025, but the plan also states that coal-fired power stations would be developed to help meet growing domestic and export demand over the same time period. Laos' significant sovereign debt, reportedly [equivalent](#) to 123% of the country's gross domestic product in 2023, makes investment in renewable energy independence a serious challenge.

Laos signed a 25-year concession agreement with Electricite du Laos Transmission Company in early 2021, a joint venture between state-owned Electricite

du Laos and Chinese-company Yunnan International. The venture would control much of the Lao power grid and [invest](#) US\$2 billion into grid expansion. The Lao and Chinese companies [established](#) a 500kV power trade deal in July 2023, and the joint venture officially [launched](#) in January 2024. The agreement will simultaneously foster needed infrastructure development and weaken Laos' energy autonomy.

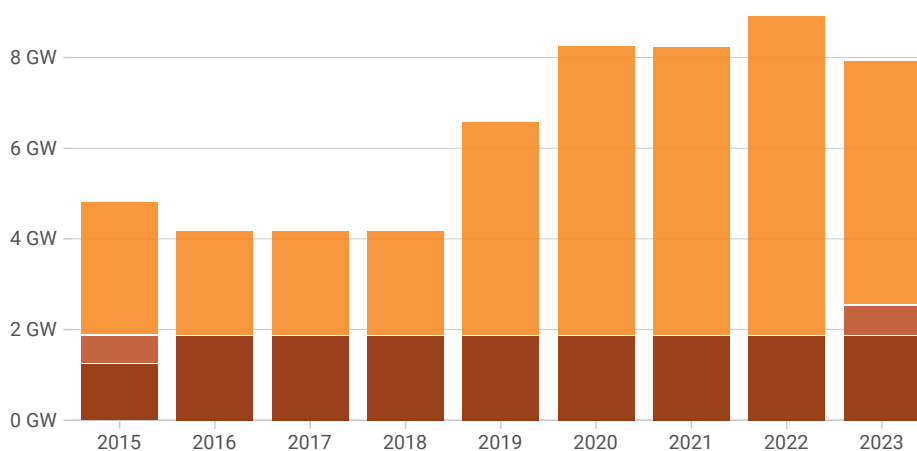
Cooperation on coal with other Southeast Asian countries is also ongoing. Laos already exports much of its electricity generation to Vietnam, and, as of December 2023, Vietnam's Ministry of Industry and Trade was [seeking](#) a new system to import coal from Laos for use in Vietnam's coal-fired power stations. In June 2023, Vietnam's Quang Tri Province [proposed](#) building the world's longest conveyor belt to transport coal from Laos to Vietnam. The [Hongsa power station](#), the only operating coal plant in Laos, was financed by nine Thai banks before it began operating in 2015, and it has shares owned by a mix of Lao, Thai, and Singaporean companies. Thailand is another major importer of electricity from Laos.

A coal plant was under construction in Laos in 2023 for the first time since 2015 (Figure 35). The [Nam Phan power station](#) is being [implemented](#) by China

Figure 35: Construction started on first new coal plant in Laos since 2015

Coal-fired power capacity in Laos by status, in gigawatts (GW)

● Operating ● Construction ● All pre-construction (announced, pre-permit, permitted)



Source: Global Coal Plant Tracker, January 2024



Western Power and is slated to be commissioned in 2025. Power generated at the plant was expected to be exported to Vietnam. Additional capacity is proposed in Laos across five different power stations, including an expansion of Hongsa power station. However, just one project, the [Phonesack Xekong power station](#), had a known progress update in 2023. The other four projects may be shelved or stagnated by a lack of funding.

Laos does not have a planned coal phaseout date. The country [stands out](#) for its substantial proposed

renewable energy capacity compared to the size of its economy, but it faces several threats. Among the gravest concerns is that climate change will exacerbate the variability of hydropower production. As Laos plans for its future energy strategy, foreign [investment](#) in renewable energy projects should be prioritized over the development of coal-fired capacity proposals, or the country risks being locked in to insurmountable fossil fuel commitments to its neighbors.

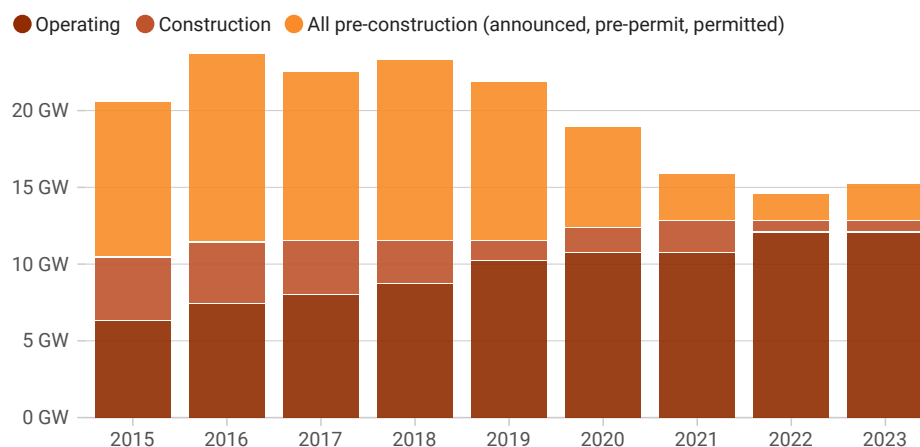
PHILIPPINES

Since 2020, when the Philippine Department of Energy (DOE) declared a moratorium on new coal plants that were not already in the permitting pipeline, the country's proposed pre-construction coal capacity has decreased by about 77% — from 10.3 in 2019 to 2.4 GW in 2023 (Figure 36). For the second year in a row, no new coal proposals were announced or permitted or began construction in the Philippines in 2023. To the contrary, 5.3 GW of proposed coal capacity moved from being considered shelved to cancelled in 2023, due to either a change in fuel type or extended period of inactivity at the proposed [Atimonan](#), [Hanjo](#), [Jose Panganiban](#), [Tagkawayan](#), and [SMC Ibabang](#) power stations.

Much of the country's remaining proposed capacity, which totals 2.4 GW across five projects, appears to be stalled, even though all five projects continue to appear in the DOE's public lists of proposed power projects as either "indicative" or "committed" projects. At the existing [Calaca](#) and [Misamis Oriental](#) power stations, pre-construction expansion units remain on the DOE's list of "indicative" private sector initiated power projects, but neither proposed expansion has made significant progress since 2020 and 2019, respectively. The proposed [Zamboanga power station](#) is emblematic of the challenge new coal faces in the region. Continuous delays in its development have incrementally pushed the planned start date of the

Figure 36: No new coal plants began operating or started construction in the Philippines in 2023

Coal-fired power capacity in the Philippines by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



project from the originally stated 2019 back to 2027. In addition, the project has faced opposition since its inception, including a legal challenge by the Philippine Movement for Climate Justice (PMCJ) due to the project's failure to make use of its environmental permits within five years of beginning the permit process.

Beyond the 2020 moratorium, the central Philippine government has [endorsed statements](#) in its 2023 Investment Plan Report (prepared for the government by the Asian Development Bank, International Finance Corporation, and the World Bank) that responsibility for the country's coal power phaseout will be largely left to the private sector, which houses all but one of the country's coal-fired power plants. While the government approved plans for the early retirement of the publicly owned [Mindanao power station](#) with support from the Asian Development

Bank (ADB), the vast majority of the Philippines' coal fleet has not been assigned a planned retirement date. Of the country's entire operating 12.1 GW coal fleet, only two units with a total of 270 MW at the [Puting Bato power station](#) currently have concrete retirement dates in place. In 2022, that seven-year old plant was at the heart of first-of-its-kind [funding](#) through an Asian Development Bank-inspired Energy Transition Mechanism (ETM) to close by 2040, fifteen years ahead of schedule.

While several of the Philippines' provincial governments have joined the Powering Past Coal Alliance and announced coal phaseout commitments at the subnational level, the Philippines has yet to commit to a national phaseout strategy that will ensure the success of its pledge to reduce greenhouse gas emissions by 75% by 2030.

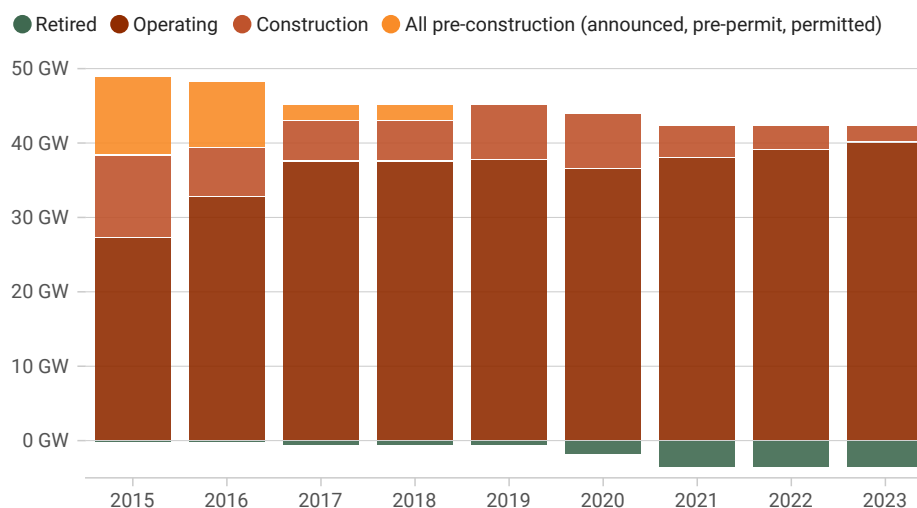
SOUTH KOREA

South Korea announced an official 2050 coal exit year in 2021, but the country has yet to develop any concrete plans to execute a Paris-aligned coal phaseout. According to the 10th Basic Plan for Electricity Supply and Demand (2022–2036), Korea plans to have 41 coal units operating in 2030 with a total capacity of 31.7 GW. This

is only 8.4 GW less than the current operating capacity of 40.1 GW, or a 21% reduction, and is completely out of line with the country's Nationally Determined Contribution (NDC) under the Paris Agreement, which aims to reduce 40% of total national greenhouse gas emissions by 2030 compared to 2018.

Figure 37: South Korea's operating coal fleet has grown each year since 2020

Coal-fired power capacity in South Korea by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



Despite the strong demand for a coal phaseout, Gangneung's [Anin units 1 and 2](#) started operating in 2022 and 2023 (Figure 37) and [Samcheok's units 1 and 2](#) are scheduled to go online by 2024. However, the [Samcheok](#) project continues to face various business risks and delays in operation. And as the financial market is increasingly turning away from coal businesses and its credit ratings downgraded, a KRW 1 trillion (US\$750 billion) bond, which issued after 2021, has mostly remained unsold by institutional investors. In addition, new coal power is concentrated in remote areas along the coast, and the connecting grid system has not been built smoothly, which is a major obstacle to business continuity.

Various stakeholders are also pushing false solutions to address the financing difficulties and business risks of coal power in the country. Legislation has been amended to allow transmission-constrained coal plants to sell power directly to nearby demand allowing off-grid coal plants to receive guaranteed revenues, and [government plans](#) encouraging the co-firing of ammonia at coal plants are [expected](#) to lock in coal power utilization. In 2023, news about ammonia co-firing plans and demonstrations at various coal plants continued to emerge, including at the [Yeongheung](#), [Samcheok](#), and [Shin Boryeong](#) power stations. Such a turn towards ammonia as a key to transition away from coal, as opposed to shutting down and replacing coal with solar and wind, runs the risk of prolonging the plants' lifetimes and thus the country's dependence on coal.

In fact, the financial risks of coal dependency are already manifesting at a national scale. Due to its high coal exposure, the recent global energy price increase from the Russian invasion of Ukraine has

directly contributed to the financial crisis Korea Electric Power Corporation (KEPCO) is facing. Since 2022, the majority-state-owned utility has suffered a total 50 trillion KRW (US\$37.5 billion) deficit, around 30% of which was directly attributable to coal power. KEPCO's power purchases from coal-fired power generation increased by KRW 10 trillion (US\$7.5 billion) in 2022 and KRW 5 trillion (US\$3.75 billion) in 2023, respectively, compared to 2021. In addition, as gas prices continue to rise, KEPCO's financing through bonds and short-term financial markets to sustain its deficit management is monopolizing the demand for financing, causing instability in financial markets and making it difficult for private companies to get financing.

As risks to the business viability of coal power and the negative impacts on national economies grow, mechanisms to compensate operators and ensure a just transition continue to enter policy discussions. According to a [March 2023 study](#) by SFOC, the cost of compensating operators for the early retirement of all coal plants that started operation after 2014 using public financing is estimated to be KRW 1.8 trillion (US\$1.3 billion) by 2035, and the cost of retirement by 2030 is estimated to be KRW 6.6 trillion (US\$5 billion). It is also estimated that about 8,000 workers will lose their jobs if 30 coal plants are shut down by 2034 as planned by the Korean government. Chungcheongnam-do, which has a large share of coal plants, has established a KRW 10 billion (US\$7.5 million) just transition fund at the provincial level and has [called](#) on the central government to establish a more substantial fund. Concrete plans to facilitate the transition for operators, workers, and communities are necessary in South Korea and around the world.

JAPAN

Japan has the fourth-largest operating coal fleet in the world behind China, India, and the United States, narrowly outpacing Indonesia for likely the last time in 2023. The country commissioned 2.5 GW of new coal capacity in 2023, for a total operating capacity of 55.1 GW. There are no longer any coal plants under construction in Japan, with units at the [Kobe](#), [Saijo](#), and [Yokosuka](#) power stations brought online in February, June, and December 2023 respectively. Proposals for new coal plants have steadily decreased over the last decade, down 97.6% since 2015 (Figure 38). Still, however, Japan maintains one active “[coal zombie](#)” power station proposal.

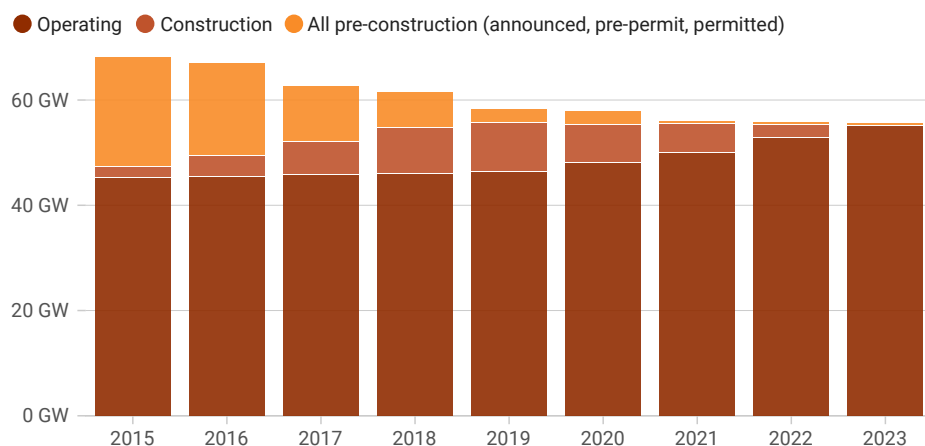
Though the focus in Japan remains largely on the use of fossil fuels for electricity generation, alternative energy development is simultaneously on the rise. Overall power demand in the country [decreased](#) by 3.7% in 2023, and the country’s thermal coal imports reportedly dropped by 17.1%. Operations were [restarted](#) at two units of the [Takahama nuclear power plant](#) in July and September 2023, and the

recommissioning of the [Kashiwazaki Kariwa nuclear power plant](#) was [approved](#) in December 2023. The nuclear capacity, which had been offline since the Fukushima disaster in 2011, would reportedly reduce Japan’s utilization of both coal and gas plants.

One of the only remaining coal plant proposals in the Group of Seven (G7) countries is in Japan. As of October 2023, environmental impact assessment procedures for the 0.5 GW integrated gasification combined cycle unit at the [Matsushima power station](#), dubbed GENESIS, were underway, and J-POWER [planned](#) to begin construction in 2026. The GENESIS project is representative of Japan’s favor for technologically infeasible plans for “clean” coal innovation rather than the retirement and replacement of coal-fired power stations with renewable energy alternatives. The unit is intended to co-fire biomass, ammonia, and hydrogen throughout its lifetime. The site would also be used to test and demonstrate carbon capture and storage technology. These tactics, which Japan also hopes to use strategically at other coal plants, could yield

Figure 38: Japan increased its coal power capacity in 2023, and a coal plant proposal remains under consideration

Coal-fired power capacity in Japan by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



limited emissions reductions if robustly implemented, while ultimately increasing the lifetime emissions of the power stations from the deliberate delay of their retirement. Japan is similarly [promoting](#) the scheme for continued coal use across Southeast Asia, pursuing the international legitimization of the strategy despite the technology being immature, inefficient, expensive, and unlikely to scale.

Japan does not have a planned coal phaseout target. A meager 1.9 GW of operating capacity (3.4%) has a future planned retirement date. According to Ember, coal [represented](#) over one-third of total electricity generation in Japan in 2022, and coal and gas together accounted for a substantial 68.6%. The country has had continued tensions on the future of the renewable energy transition compared to the other G7 countries and [maintained](#) strong opposition to the proposition that G7 should adopt 2030 as a formal unabated coal plant phaseout date in April 2023.

Japan's Green Transformation (GX) policy, which was formally announced in February 2023 following a public comment period that began in December 2022, [pursues](#) methods for [ensuring](#) stable energy supply and reducing emissions from existing fossil fuel power plants rather than scaling up renewables. In October 2023, Japan [hosted](#) its third International Conference on Fuel Ammonia, further evidencing the country's

commitment to the energy transition distraction. A May 2023 report from the Centre for Research on Energy and Clear Air [demonstrates](#) that co-firing coal and ammonia can substantially increase both greenhouse and particulate matter emissions in Japan. Greenwashing from the Japanese government has been a concern, with Prime Minister Fumio Kishida's COP28 announcement that Japan will not build any more unabated coal plants, which the country already had no plans for, [labeled](#) as a "smokescreen" to shift focus away from plans to keep operating coal plants online.

While the country has not yet shifted towards an authentic fossil fuel phaseout, Japan has the economic and technical potential for a true renewable energy transition. In July 2023, BloombergNEF's New Energy Outlook report [suggested](#) that renewables could account for 79% of Japan's energy mix by 2050. Even more promising is the projection that 90% renewable energy is [achievable](#) in Japan by 2035. Further research [shows](#) that Japan could produce all of its electricity from wind and solar at competitive market prices and that coal must be [phased out](#) by the end of the decade. The findings of these analyses, combined with the recommissioning of Japan's [existing fleet](#) of nuclear capacity and Japan's position as a leading global economy, indicate that a swift pivot towards a Paris-aligned energy transition by 2030 is within reason.

AUSTRALIA

With an operating coal fleet of 22.4 GW, Australia remains off track from meeting a complete coal power phaseout by 2030, as is required for advanced countries in order to meet the goals of the Paris agreement. In 2023, 4.7 GW of proposed coal plant capacity moved from being considered shelved to cancelled, and Australia is left with a single three-unit coal plant under development.

The proposed [Collinsville \(Shine Energy\) power station](#) has been touted by its owners as a “high efficiency, low emissions” (HELE) coal project, but it would be a massive sink for government subsidies and the region’s carbon budget. If the proposed project were to be built and commissioned, it would be the first new addition to Australia’s operating coal capacity since 2012, adding almost 1 GW of new capacity to the country’s operating coal fleet in 2028–2031 at a time when coal must be phased out.

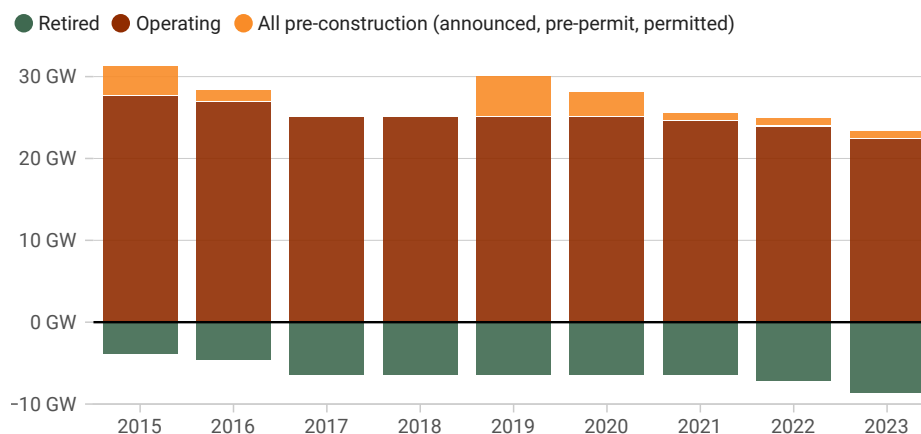
In 2023, Australia retired 1.5 GW of coal capacity (Figure 39), including the three remaining units at the [Liddell power station](#) in favor of a replacement renewable energy hub and battery storage system. Unit 1 of the [Worsley Refinery power station](#) was converted to gas in late 2023, with the plant’s second coal-fired unit expected to follow suit in 2024. While energy companies

continue to develop and announce plans for the retirement, conversion, or replacement of coal plants, less than a third (6.6 GW) of Australia’s operating coal fleet is currently scheduled for retirement before 2030.

Without a nationally committed coal phaseout plan, some coal plants’ previously announced retirement dates have been quietly postponed without penalty or consequence to power station owners. Throughout 2023, the New South Wales government continuously pressured Origin Energy to keep the [Eraring power station](#) in operation beyond its announced 2025 retirement date, offering a “rescue bid” to use public funds to cover the costly extended operation of the plant. This is despite the fact that, as advocates have [highlighted](#), the Australian Energy Market Operator has shown that unreliable and risky coal-fired generators can be replaced. In some parts of the country, Australian state governments also continue to funnel public money into aging coal mines, as is the case with Western Australia’s continued [spending](#) of millions of dollars to keep the [Griffin \(Ewington\) coal mine](#) in business. As public and private sector proposals for renewable energy projects and battery storage systems expand, the federal and state governments must ensure that financial incentives for coal production and generation do not interfere with Australia’s transition to clean energy.

Figure 39: Australia is gradually retiring its coal fleet, but new capacity still under consideration

Coal-fired power capacity in Australia by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



CENTRAL ASIA

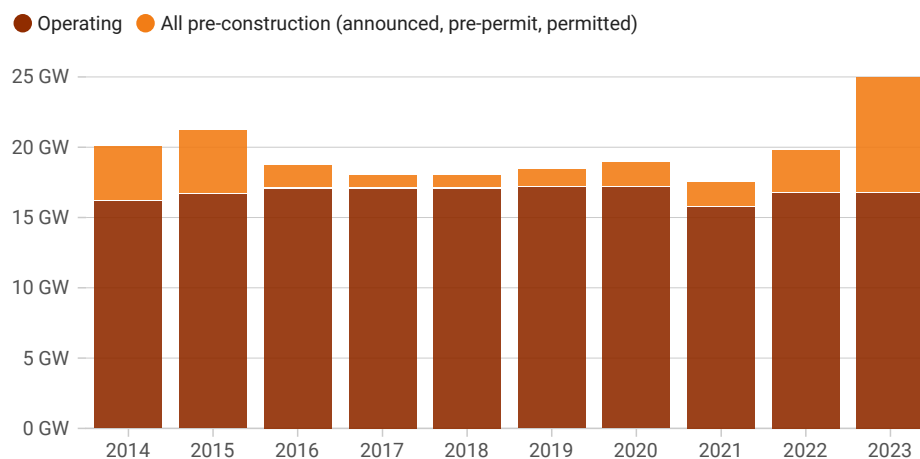
Proposed coal capacity in Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan threatens to leave Central Asia behind in the global energy transition. Two out of the eight countries in the world to propose new coal plants in 2023 are in Central Asia. These future coal-fired power stations would pose stranded asset risks and unnecessary socioeconomic and environmental costs. As of the end of 2023, the proposed coal capacity in the four countries is equivalent to 45% of the region's current operating capacity, revealing that Central Asia plans to balloon its new coal power generation while most other regions are plateauing or decreasing proposals. Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan are trending in the wrong direction, with proposed coal capacity nearly doubling in 2022 and more than doubling in 2023 (Figure 40). Central Asia's share of the total global proposed capacity is 2.5 times greater than its share of the total global operating capacity. Further, none of these four Central Asian countries has a planned coal phaseout year, and three out of the four countries do not have a Paris-aligned carbon neutrality goal.

Should this proposed capacity be built, the future burden of the coal plant development would be exacerbated by the region's dated operating coal fleet. 10.2 GW out of 16.8 GW (61%) of operating capacity in the region is older than 40 years old, which is the generally understood [lifetime](#) of a coal plant. Operating coal plants beyond their designated lifetime incites serious risks, especially for combined heat and power (CHP) plants that are also providing heat in Central Asia's frigid winters. A 2023 technical audit of Kazakhstan's thermal power stations [revealed](#) an average degree of wear-and-tear of 66%, with some of the coal-fired power stations depreciated by 80% and in dire technical condition. South Africa, which operates 16 GW of capacity that is 40 years or older, should serve as a [case study](#) to the fact that operating coal plants in this decrepit age profile leads to unit breakdowns, supply interruptions, and cost risks.

In Kazakhstan, the February 2023 [Carbon Neutrality Strategy](#) stands in opposition to the 4.6 GW of new coal capacity that was proposed throughout the year.

Figure 40: Central Asia has more than doubled its proposed coal capacity in the last decade

Operating and pre-construction (announced, pre-permit, permitted) coal-fired power capacity in Central Asia, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



Kazakhstan proposed the third-most new coal capacity in the world in 2023, behind only China and India, and over 70% of the total coal capacity proposed in Central Asia is in Kazakhstan (Figure 41). The two largest projects are planned in Ekibastuz, including an expansion of the [Ekibastuz-2 power station](#) and an entirely new [Ekibastuz-3 power station](#). The country's proposed capacity is equal to 44% of its operating capacity. No coal plants in the country have an official planned retirement date, and just 1.3 GW of capacity in the country is in discussion for retirement or conversion; with that in mind, the proposals cannot be framed as replacement capacity for the aging coal fleet. There is nearly 4.5 times more capacity proposed than is in discussion to retire.

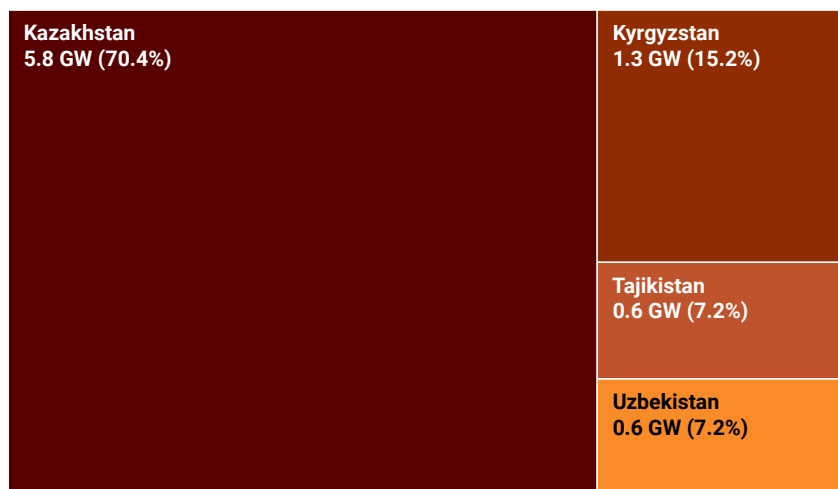
The end of 2023 marked the progression of several projects in the pre-construction phase in Kazakhstan, with the signing of cooperation agreements with Russian companies to build units at the Ekibastuz-2 power station and three smaller CHP plants. Financing from

Russian banks was also anticipated for these units. At the [Kokshetau power station](#), which was seeking bidders outside of Russia, an international tender was held in early 2023. Several Turkish companies initially expressed interest, but the tender ultimately did not [attract](#) investors due to insufficient returns offered and [concerns](#) about the project being coal-fired. Ultimately, in late 2023, a memorandum was signed with a Russian company, with construction expected to begin in 2024.

Kyrgyzstan, Tajikistan, and Uzbekistan are going down the same path as Kazakhstan, though at a smaller scale (Figure 42, on the next page). In Kyrgyzstan, an agreement was [signed](#) with Russian partners for a new 0.7 GW [Jalal-Abad power station](#) in October 2023, putting Kyrgyzstan on the short list of countries still announcing new coal plant proposals. Another 0.6 GW project, the [Kara-Keche power station](#), is proposed in Kyrgyzstan, but reporting as of September 2023 indicates that enriched coal from the Kara-Keche coal field may be used to supply the

Figure 41: Kazakhstan has the majority of Central Asia's proposed coal capacity

Coal-fired power capacity in development (announced, pre-permit and permitted) in Central Asia, by country



Source: Global Coal Plant Tracker, January 2024



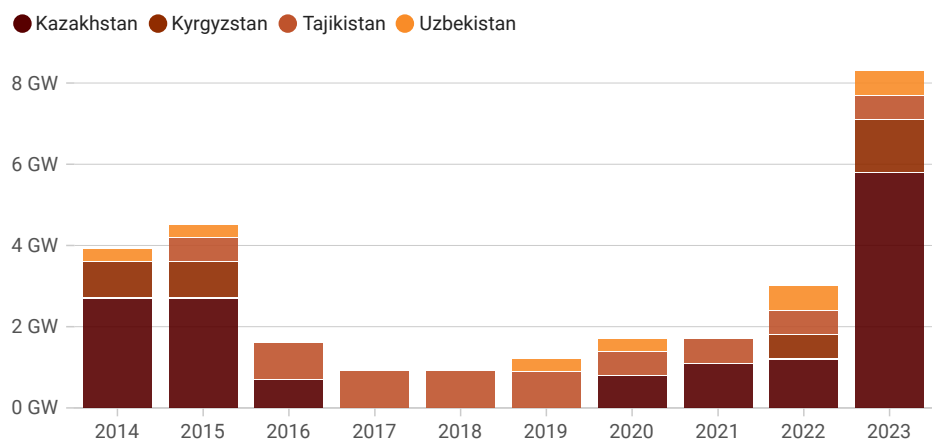
existing [Bishkek power station](#) rather than a new coal plant. In Tajikistan, electricity is generated largely by [hydropower](#). However, the announced [Fon-Yagnob power station](#) would increase the country's operating coal fleet by 1.5x. As of November 2023, the project was expected to start a "phased commissioning" in 2025. In Uzbekistan, two new units are proposed at the nine unit [Angren power station](#), five units of which were operating as of December 2023.

Coal production is also ramping up in these countries. In Uzbekistan, production [increased](#) by 14.5% between 2022 and 2023, and it was expected to [grow](#) by a further 77.8% by 2025. The region's largest coal producer, [Bogatyr coal mine](#), similarly aims to increase its annual capacity by 25% in 2024.

Betting on new coal capacity is a risky strategy for Central Asia. All Central Asian countries, and especially Kazakhstan, ought to [invest](#) in reliable, cost-effective, renewable energy alternatives and avoid treating gas as a "transition" fuel. These countries should also prioritize energy storage, smart grids, and transmission infrastructure. For Kazakhstan and Kyrgyzstan, which have existing climate commitments, following through with the proposed coal proposals will make meeting these commitments more difficult and expensive. The same would be true for the other Central Asian countries should they make coal phase-out or carbon neutrality goals in the future.

Figure 42: Countries in Central Asia have more coal power capacity under consideration now than they did ten years ago

Cumulative pre-construction (announced, pre-permit, and permitted) coal-fired power capacity, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



MIDDLE EAST AND NORTH AFRICA

For a third year in a row, the nations of the Middle East and North Africa (MENA) have no coal power proposals under consideration. Israel and Morocco are the only countries in the region with operating coal capacity, which totals 8.6 GW, and both nations are making plans to exit coal power. In Israel, coal units at the [Orot Rabin power station](#) were slated to retire in 2023 and 2024 following gas conversions, but project delays and the start of war [postponed](#) the planned conversions. In early 2024, the government announced that the plant would [cease](#) burning coal by 2026.

Morocco currently has four operating coal plants, but in late 2023, the country [joined](#) the Powering Past Coal Alliance (PPCA) and pledged to plan an end to coal power. In light of Morocco's commitment to phase out coal, the 2 GW [Jorf Lasfar power station](#) will be one to watch as it recently secured a power supply agreement that extends to 2044. At the [Jerada power station](#), public officials began planning last year to [demolish](#) the older coal units at the site.

The United Arab Emirates also [joined](#) the PPCA last year while presiding over the COP28 climate

conference in Dubai. The country converted its only coal units at the [Hassyan power project](#) in 2022.

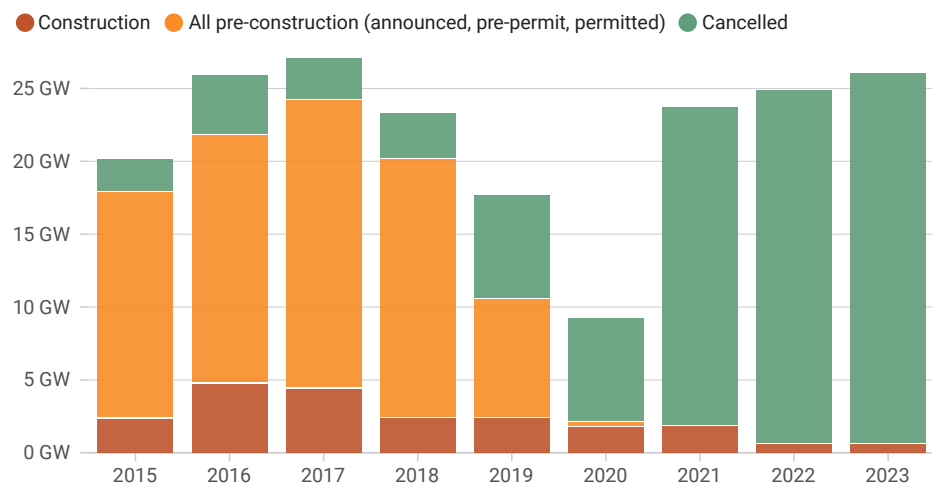
The single coal plant under construction in the region is the [Tabas power station](#) in Iran. Work on the project has been inconsistent since it began in 2000, and it may be stalled again due to a [lack](#) of equipment needed to build coal-fired boilers.

Cancelled capacity in MENA continues to rise, reaching 25.4 GW in 2023 (Figure 43). The 1.2 GW [Al-Duqum Independent Water and Power plant](#) in Oman was presumed to be cancelled last year after the Ministry of Oil and Gas [shelved](#) the project in 2019 in favor of more renewable sources of energy.

In 2023, a Global Energy Monitor report [found](#) that recent renewable energy capacity additions in the region are relatively unambitious compared to MENA's peers and dwarfed by the outsized role of oil and gas, a dynamic that cannot be overlooked when considering how much the region is poised to gain from a true renewable energy transition.

Figure 43: No new coal in the Middle East and North Africa

Coal-fired power capacity in Middle East & North Africa by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



SUB-SAHARAN AFRICA

Abandoned coal power projects in Sub-Saharan Africa have continued to pile up as international financing dwindles. In 2023, 3.8 GW of coal capacity was newly cancelled, for a total of 54 GW cancelled since 2010. Six countries in the region currently have no operating coal or active proposals, and three more countries without operating coal each have only a single coal plant under consideration. Of the coal projects under development across the region, little moved forward — there was one construction start in Nigeria, and only 0.3 GW of new capacity came online from a single unit in Zimbabwe.

Operational capacity in the region sits at 46.9 GW, and just three countries — Botswana, Zimbabwe, and South Africa — make up 97% of that capacity. The future of coal in Sub-Saharan Africa is still in flux as companies continue to exit coal and proposed projects struggle to secure funding. 13.8 GW of coal power remains under consideration at 59 units across the region, including 1.9 GW of capacity that was newly proposed in 2023, all of it in Zimbabwe. Pre-construction capacity had been falling in Sub-Saharan Africa since 2017, and Zimbabwe's proposals were solely responsible for a slight uptick in 2023 (Figure 44).

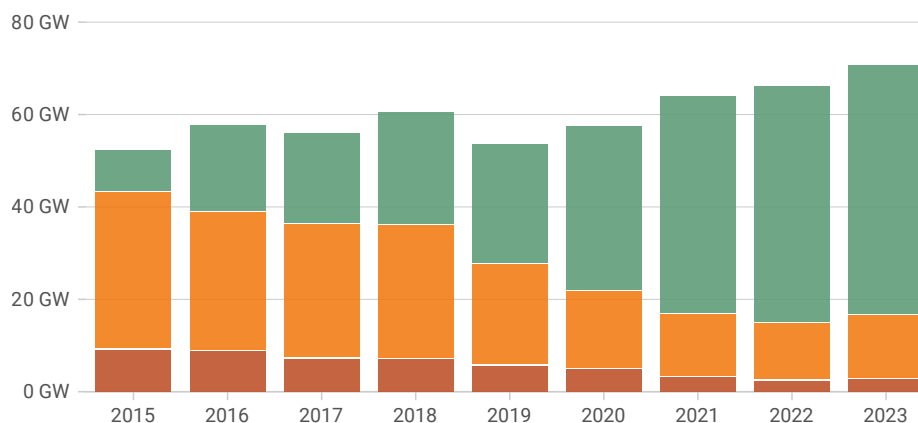
Zimbabwe currently has the most coal capacity under consideration (6.5 GW) in Sub-Saharan Africa, followed by South Africa (3.0 GW) and Mozambique (1.2 GW). The 1.9 GW of new coal in Zimbabwe is the most the country has seen proposed in a year since 2016. Making up the proposed capacity are the [Prestige power station](#) and the [Gweru power station](#), both captive projects slated to supply power to chrome smelters that appear to be backed by Chinese companies. And more coal power proposals in the country may be coming as the Zimbabwe Electricity Supply Authority implemented changes to its energy pricing last year that invited [growing interest](#) from independent power producers. Amid an influx of proposals, Zimbabwe saw only a small bump in operational capacity that had stayed mostly steady for 30 years, as a unit at the Chinese-backed [Hwange power station](#) came online.

In neighboring Botswana, the revived [Mmamabula Energy Project](#) gained more proposed capacity in 2023. The India-backed project is Botswana's only capacity in pre-construction, which has been largely declining since 2016. If completed, the Mmamabula Energy Project would nearly double the current operating capacity in the country.

Figure 44: Abandoned coal power projects pile up in Sub-Saharan Africa, but proposals still trickle in

Coal-fired power capacity in Sub-Saharan Africa by status, in gigawatts (GW)

● Construction ● All pre-construction (announced, pre-permit, permitted) ● Cancelled



Source: Global Coal Plant Tracker, January 2024



South Africa remains the region's coal power giant. The country, representing 93% of total coal capacity in Sub-Saharan Africa, is the most coal-reliant economy among the G20 and runs the sixth largest coal fleet in the world. Despite its enormous installed capacity, South Africa faced a worsening energy crisis in 2023. Equipment breakdowns, maintenance, and repairs took multiple coal units in the country's aging fleet [offline](#) throughout the year. The government [declared](#) a national state of disaster, and load-shedding intensified to make 2023 the [worst year](#) on record for power outages. Residents endured a staggering 335 days of rolling blackouts, up from 205 days in the previous year. None of the coal plants operated by state-owned utility Eskom were meeting the energy availability targets set in the government's Energy Action Plan, [launched](#) in 2022 to address the electricity supply crisis.

There was no change in South Africa's proposed or operating coal capacity in 2023. The [Kusile power station](#) was still not complete fifteen years after construction began, and the proposed [Musina-Makhado power station](#) was still facing uncertainty. Litigation against the Musina-Makhado Special Economic Zone was ongoing, led by the [Centre for Environmental Rights](#) representing community and environmental groups. Developments in South Africa centered around the country's new Integrated Resource Plan and the Just Energy Transition plan.

In early 2024, the South African government publicly [released](#) its much anticipated updated draft Integrated Resource Plan (IRP). The new IRP dramatically reduces the role of renewable energy compared to the previous IRP, and furthermore, includes scenarios that propose delays in retiring the country's existing coal plants and building 6 GW of "clean coal." Civil society leaders and energy analysts alike have [criticized](#) the draft IRP for its reliance on gas and existing coal power, a risky option with Eskom's troubled coal fleet. Coal plant retirement delays are expected to cause South Africa to [miss](#) its 2030 carbon emissions target under the Paris climate agreement. Coal power's appearance in the 2023 IRP is curious alongside the US\$8.8 billion of international climate finance in South Africa's Just Energy Transition Investment Plan, which was [approved](#) by the

government in late 2023. Part of the funding would reportedly provide targeted support for transitioning communities in Mpumalanga province, where several coal plants and coal mines are located.

Coal power plays a much smaller role in the rest of Sub-Saharan Africa, where hydropower, gas, and oil figure more prominently in the energy mix. In West Africa, Nigeria and Niger are regional outliers with coal plants under development, while Côte d'Ivoire, Ghana, and Guinea are now coal free. Nigeria's [Ugboba power station](#) was revived and began construction in 2023. There had been no projects under construction in Nigeria for at least eight years, and there were otherwise no construction starts in 2023 for all of Sub-Saharan Africa. The only other proposed coal capacity in West Africa is in Niger, where the [Salkadamna power station](#) and coal mine have been under development since 2012. Senegal maintains the small captive [Gallen Cement power station](#) and the disputed [Sendou power station](#), which is in the process of being converted to a gas plant.

In East Africa, 3.3 GW of coal capacity is under development, and only 0.6 GW is currently operating. In Zambia, a 0.3 GW expansion of the [Maamba power station](#) is moving forward while seeking funding from the government. Meanwhile, in Kenya, 2 GW of coal power have been cancelled over the last two years under strong local opposition. The small captive [Pokot power station](#) remains the only coal capacity under consideration in the country, and the likelihood of the project moving forward is uncertain, as its owners applied for a generation license in 2023 to build a wind farm at the site. Coal capacity was also cancelled in the past year in Djibouti, Malawi, Mozambique, and Tanzania.

Local opposition to coal power projects and advocacy in favor of renewable energy remain strong across the region. At the same time, coal-dependent communities are [voicing](#) concerns about the lack of transparent communication on a transition away from coal. Initiatives like South Africa's pioneering JETP must engage closely with community groups and support those whose livelihoods and independence have been closely and complicatedly tied to the coal industry.

LATIN AMERICA

The operating coal capacity of Latin America has been on a gradual decline since 2020, and the incremental retirement of the region's coal plants continued in 2023 (Figure 45). While a growing number of coal plant retirements have begun to reduce the capacity of Latin America's operating coal-fired capacity in recent years, several lingering proposed projects remain in the region. At the end of 2023, 1.4 GW of coal capacity remained under development and construction, representing a 19% decrease from 2022, and a decrease of approximately 86% from the 10.2 GW of coal capacity that was under development in 2015. Brazil's two straggling pre-construction coal plants and Argentina's single coal-fired unit still under construction together comprise the remaining pipeline of proposed coal projects in Latin America. While plans to retire individual coal plants in Brazil, Chile, and Colombia continue to develop, much of the operating coal capacity in Latin America still has not been addressed by concrete and publicly-available retirement schedules, leaving some countries such as Colombia and Mexico lagging behind their energy commitments and emissions reductions goals. In the Dominican Republic, the first coal plant retirement dates have been proposed for the [Punta](#)

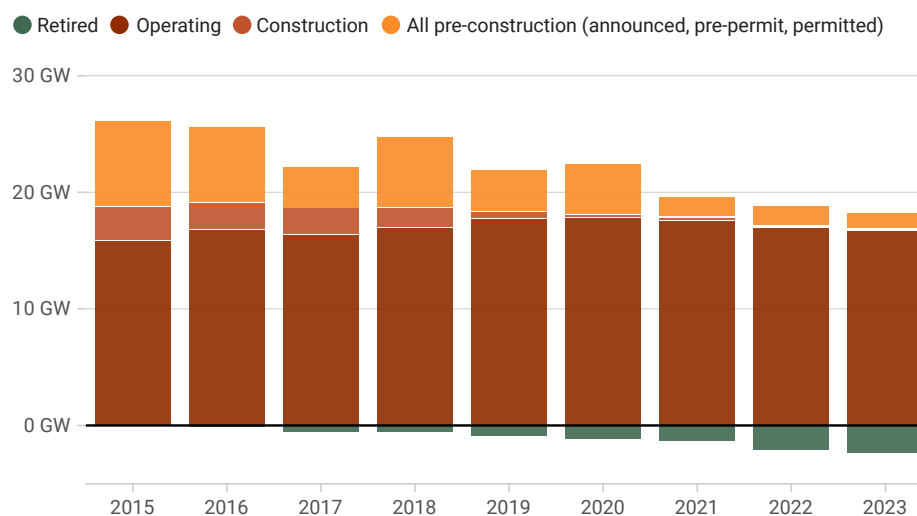
[Catalina power station](#), while neither of the coal plants in Guatemala have announced plans for retirement.

Argentina's [Río Turbio power station](#) is home to the only coal-fired power unit currently under construction in all of Latin America. In late 2023, after years of delays and continuous issues during the power station's development, Argentinian President Javier Milei proposed that the Río Turbio plant be privatized. In an appeal against privatization, the plant's operators submitted a restructuring proposal to the government, but the omission of seemingly fundamental details left both the government and the public dubious of both units' actual operational status.

In Brazil, Latin America's only two remaining pre-construction coal projects — [Nova Seival](#) and [Ouro Negro](#) — are stalled, though not yet officially cancelled. These power stations, both in Rio Grande do Sul state, were originally expected to start operating between 2026 and 2027, but after facing financial and legal obstacles in the pre-construction development phases, neither project showed progress in 2023. The proposed second unit of the [Pampa Sul power station](#),

Figure 45: Latin America's proposed coal power capacity continues to fall

Coal-fired power capacity in Latin America by status, in gigawatts (GW)



Source: Global Coal Plant Tracker, January 2024



whose first unit is operational, has not been mentioned in publicly available documents since the plant's sale to new owners Grafito and Perfin Space X, and the unit is presumed to be cancelled.

As of early 2024, all but two of Brazil's operating coal plants had some kind of proposed retirement date. However, worrying signs remain regarding coal-fired electricity generation in Brazil, including postponements of previously announced retirement dates that threaten the timely phaseout of Brazil's coal fleet. In 2022, Congress approved the continuation of incentives for the [Jorge Lacerda power station](#) in Santa Catarina state, extending the plant's operational lifespan from 2027 to 2040. In late 2023, an offshore wind bill under discussion in Congress included a stipulation to extend the contracts of coal-fired power plants in southern Brazil as reserve capacity until 2050. If passed, the legislation would keep coal plants such as the [Presidente Médici Candiota power station](#) in operation for longer than originally planned.

In December 2023, coal-fired generation and associated mining activities in Paraná state were indefinitely suspended, after COPEL returned its concession for the Figueira power station to the Brazilian government. COPEL had recently invested in modernizing the 20 MW Figueira plant over a four-year period, but appeared to be moving to decarbonize its portfolio. The future of the Figueira plant will now be contingent on determinations from Brazil's Ministry of Mines and Energy.

In 2023, a single coal-fired unit at the [Ventanas power station](#) in Chile was retired. Since the unveiling of Chile's national decarbonization plan in 2019, nine units at Chilean coal-fired power plants have ceased operating, while another eleven units have committed to shut down or convert to other fuels between 2024 and 2025. As of early 2024, owners of Chile's eight remaining coal-fired units at the [Cochrane](#), [Guacolda](#), and [Santa María](#) power stations had yet to make firm retirement commitments; without further action, these units could potentially continue operating until the nationally committed coal phaseout date of 2040, according to the voluntary agreement established in 2019.

Colombia joined the Powering Past Coal Alliance (PPCA) in September 2023 and has since increasingly proposed efforts toward phasing out coal power and production. As an OECD nation, Colombia must phase out all unabated coal power generation by no later than 2030 in order to meet the Paris Agreement. The Colombian Minister of Mines and Energy laid out plans to decarbonize power generation at the [Termoguajira power station](#) with government support from 2024–2028 in the Legislative [Decree](#) 1276 of July 2023. However, the Colombian constitutional court [struck](#) down the decree only months later, declaring the legislation an unenforceable use of public funds. Currently, fourteen coal-fired units located at the [Gecelca](#), [Termoguajira](#), [Termopaipa](#), [Termozipa](#), and [Termotasajero](#) power stations still lack firmly committed retirement plans. Startlingly, ENEL, which had publicly announced a coal phaseout by 2027, was recently awarded a coal capacity subsidy until late 2028. In early 2024, a proposed mining bill [sought](#) to ban new coal exploration and production contracts. As of March 2024, efforts were underway to establish 2035 as the national coal power cutoff date, as called for in the [Just Energy Transition Roadmap](#) published by the Ministry of Mining and Energy. Colombia's two remaining coal project proposals, [La Luna](#) and the [Termobijao](#) power stations, have been shelved after years of inactivity and are most likely cancelled.

In keeping with its November 2021 national pledge to halt the expansion of its national coal fleet, Mexico has no active coal plant proposals beyond the shelved [Coahuila power station](#), which has been omitted from recent years' planning documents. However, Mexico's existing coal fleet continues to operate without evident plans to phase out coal at the national or individual plant level in the near term. While the country's power sector development plan for 2018–2032 proposed that the [Carbón II power station](#) be decommissioned in 2029, there has been no further mention of the scheduled retirement of Carbón II or any other coal plant in subsequent editions published between 2019 and 2023.

In late 2023, after the controversial extension of the Canadian-owned Cobre Panamá copper mining contract, Panama's Supreme Court [deemed](#) the mining

contract to be unconstitutional. By the end of the year, the president of Panama announced that the government had begun the process to close the mine but did not address the associated [coal-fired power plant](#). While the Panamanian government had previously

committed to phasing out all coal-fired power plants by the end of 2023 and affirmed its decarbonization goals by joining the PPCA in September of that year, there was no news of the coal units' decommissioning by early 2024.

APPENDIX

Table 1: Coal Power Capacity in Development and Operating by Country (megawatts)

Country	Announced + Pre-permit + Permitted	Construction	Shelved	Operating	Cancelled 2010–2023
Albania	0	0	0	0	800
Argentina	0	120	0	495	0
Australia	945	0	0	22,403	13,436
Austria	0	0	0	0	800
Bangladesh	7,220	3,900	1,670	4,775	28,285
Belarus	0	0	0	0	1,400
Belgium	0	0	0	0	1,100
Bosnia and Herzegovina	1,350	0	350	2,090	3,500
Botswana	600	0	1,800	732	5,550
Brazil	1,326	0	340	3,177	4,990
Brunei	0	0	0	220	0
Bulgaria	0	0	0	4,569	2,660
Cambodia	0	315	0	1,405	5,580
Canada	0	0	0	4,577	1,500
Chile	0	0	0	4,103	9,527
China	267,903	139,794	55,370	1,136,731	600,647
Colombia	0	0	1,585	1,646	1,250
Côte d'Ivoire	0	0	0	0	700
Croatia	0	0	0	217	1,300
Czech Republic	0	0	0	7,445	1,380
Denmark	0	0	0	1,560	0
Djibouti	0	0	0	0	150
Dominican Republic	0	0	0	1,064	2,040
DR Congo	0	0	500	0	0
Egypt	0	0	0	0	15,240
El Salvador	0	0	0	0	370
Eswatini	300	0	0	0	2,100
Ethiopia	0	0	90	0	0
Finland	0	0	0	1,365	385
France	0	0	0	2,507	180
Georgia	0	0	0	0	300
Germany	0	0	0	40,362	20,413

(continued on next page)

Table 1: Coal Power Capacity in Development and Operating by Country (megawatts) – Continued

Country	Announced + Pre-permit + Permitted	Construction	Shelved	Operating	Cancelled 2010–2023
Ghana	0	0	0	0	2,100
Greece	0	0	0	2,885	1,250
Guadeloupe	0	0	0	64	0
Guatemala	0	0	0	439	300
Guinea	0	0	0	0	330
Honduras	0	0	0	105	0
Hong Kong	0	0	0	6,110	0
Hungary	0	0	0	944	3,080
India	46,033	30,710	11,775	237,148	589,881
Indonesia	6,220	9,435	3,300	51,557	49,930
Iran	0	650	0	0	0
Ireland	0	0	0	915	0
Israel	0	0	0	4,325	1,260
Italy	0	0	0	5,526	6,795
Jamaica	0	0	0	0	1,140
Japan	500	0	0	55,123	12,177
Kazakhstan	5,840	195	0	13,063	2,260
Kenya	64	0	0	0	2,676
Kosovo	0	0	0	1,290	830
Kyrgyzstan	600	0	0	812	0
Laos	5,376	660	1,300	1,878	0
Latvia	0	0	0	0	435
Madagascar	30	0	0	120	0
Malawi	900	0	0	0	3,220
Malaysia	0	0	0	13,280	4,900
Mauritius	0	0	0	195	110
Mexico	0	0	1,400	5,378	1,850
Moldova	0	0	0	0	0
Mongolia	1,550	350	5,280	945	3,410
Montenegro	0	0	0	225	1,664
Morocco	0	0	0	4,257	1,670
Mozambique	1,200	0	150	0	4,670
Myanmar	0	0	0	190	21,225
Namibia	0	0	0	120	550
Netherlands	0	0	0	3,500	1,311
New Zealand	0	0	0	500	0
Niger	200	0	0	0	500
Nigeria	0	600	30	285	5,579
North Korea	0	0	0	3,250	300
North Macedonia	0	0	0	824	730

(continued on next page)

Table 1: Coal Power Capacity in Development and Operating by Country (megawatts) – Continued

Country	Announced + Pre-permit + Permitted	Construction	Shelved	Operating	Cancelled 2010–2023
Oman	0	0	0	0	1,200
Pakistan	4,010	732	0	7,638	24,203
Panama	0	0	0	306	0
Papua New Guinea	0	0	52	0	0
Peru	0	0	0	0	135
Philippines	2,390	735	0	12,082	17,216
Poland	0	100	0	28,510	22,923
Portugal	0	0	0	0	0
Romania	0	0	0	2,310	5,705
Russia	4,380	285	1,048	37,857	10,871
Senegal	0	0	0	155	850
Serbia	0	350	1,350	4,435	1,445
Slovakia	0	0	0	494	885
Slovenia	0	0	0	1,069	0
South Africa	2,955	1,600	2,580	43,624	14,330
South Korea	0	2,100	0	40,134	7,500
Spain	0	0	0	2,946	800
Sri Lanka	0	0	0	900	5,900
Sudan	0	0	0	0	600
Sweden	0	0	0	0	0
Syria	0	0	0	0	0
Taiwan	0	0	0	19,156	14,000
Tajikistan	600	0	0	400	650
Tanzania	800	0	120	0	1,445
Thailand	600	0	0	6,138	10,726
Türkiye	4,808	145	4,820	20,473	89,068
Ukraine	0	0	660	11,138	2,060
United Arab Emirates	0	0	0	0	5,470
United Kingdom	0	0	0	2,172	9,968
United States	800	0	0	200,090	28,168
Uzbekistan	600	0	0	2,493	300
Venezuela	0	0	0	0	2,800
Vietnam	3,960	3,933	5,890	27,239	57,535
Zambia	300	0	0	330	1,940
Zimbabwe	6,490	605	950	1,335	7,240
Total	380,850	197,314	102,410	2,130,119	1,797,648