

Energy Transition: Thermal Coal Will Remain Important In Asia-Pacific

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Editor's Note: This report is one in a five-part series providing insights on developments in the energy transition.

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Key Takeaways

- Demand for thermal coal is set to decline after peaking in 2024 as coal-fueled power is increasingly replaced with renewables in Europe and the U.S.
- However, transitioning away from coal is complex and slow for countries like China and India, which account for 70% of global coal demand and are facing a steep rise in power demand, with a fairly new coal fleet ensuring affordable power.
- The success of meeting net zero goals for countries like China, India, and Indonesia hinges significantly on the future economic and technical feasibility of carbon capture, usage, and storage (CCUS) technology.

The reduction of coal demand will be slow and uneven across regions. Currently, coal accounts for about 25% of primary energy globally (and about two-thirds of the power sector's generation), but is set to reduce to 21% by 2030 and trend down thereafter according to S&P Global Commodity Insights (Platts)' reference scenario. China and India together account for 70% of the world's coal demand. The steep rise of power demand expected in those two countries as their economies expand implies that coal generation is not being displaced by renewables, which are not sufficient to meet higher demand, unlike in the U.S. and Europe. Other industrial sectors like cement and steel are also slower to transition but the focus on decarbonization is increasing.

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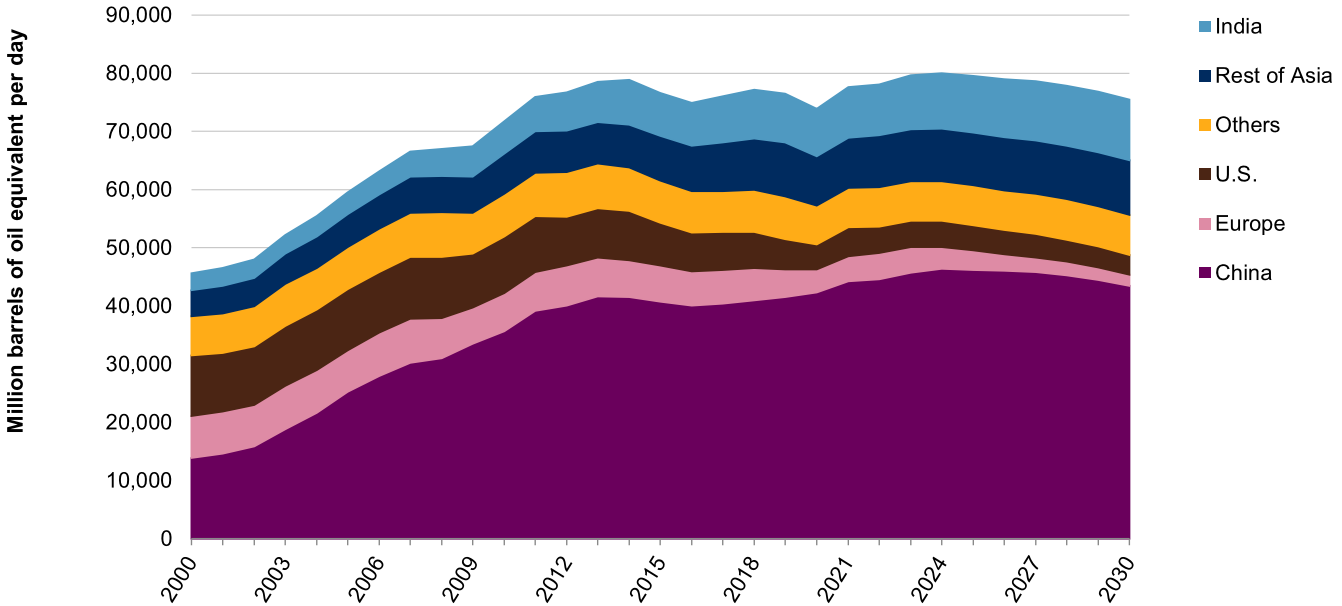
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Chart 1

Global Coal Demand



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In Europe And U.S., Rising Renewables Leads To Falling Coal Use

In the U.S., the share of coal in power generation is set to fall to 12% by 2030 under S&P Global Commodity Insights (Platts)' reference scenario, from close to 20% a few years ago. However, the U.S. is also paying increased attention to the reliability of power, which could lead to deferrals of some coal retirements as recently announced by the mid-continent region operator, MISO, to help mitigate the risk of blackouts, with diversity of the power mix playing a key role.

In Europe, climate and emission-reduction policies are the key reasons for an abrupt drop of coal-fired power to less than 5% of the mix in 2030 from 15% in 2020. The risk of Russian gas interruptions has however temporarily delayed the retirement of certain coal plants, with some destined to act as a reserve and therefore stay active for a short while longer than expected. The German government, for example, is considering setting up a 10 gigawatt (GW) coal-fired power generation capacity reserve, while many Eastern European countries are currently still high users of coal, with limited prospects for renewables development.

The Transition Is Taking A Different Trajectory In Asia-Pacific

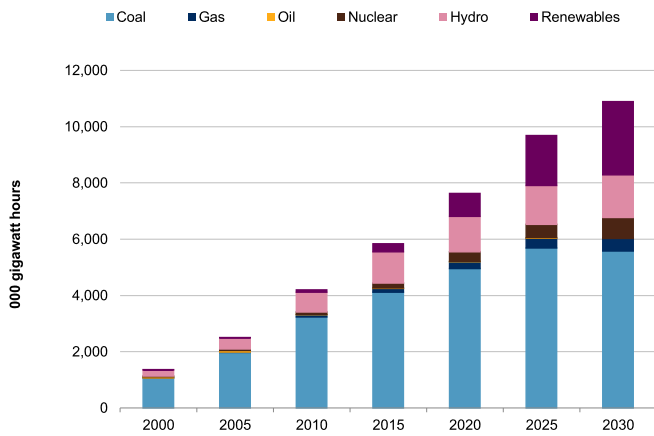
Economic realities in the Asia-Pacific region mean that any significant reduction of coal consumption will prove challenging. Large Asian economies are experiencing a strong rise in

Energy Transition: Thermal Coal Will Remain Important In Asia-Pacific

electricity demand, which is set to continue over the coming decades to sustain economic growth. When it comes to meeting new demand, coal is still seen as the most affordable option for base-load power. At the 26th U.N. Climate Change Conference (COP26) in November 2021, China and India were the two major hold-outs on coal, agreeing only to phase down rather than phase out this fossil fuel. In China for instance, coal-fired generation will remain relatively flat and elevated this decade, although its share is set to reduce to 51% of power generation by 2030 from two-thirds today, with faster growth in renewables. In India, coal-fired generation will still expand substantially this decade to meet soaring demand. This is despite over 40 countries pledging to phase out coal at COP 26.

Chart 2

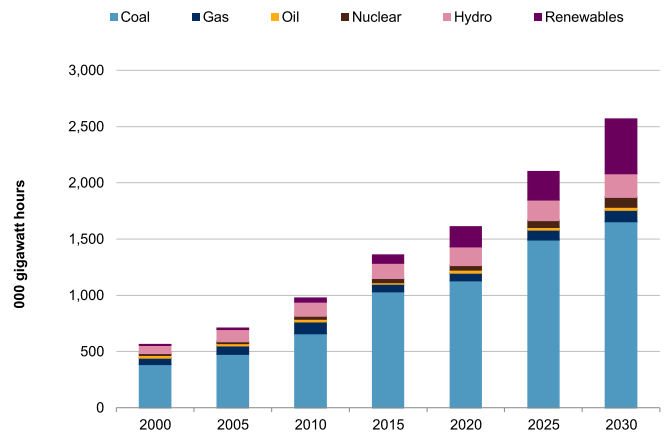
Coal In China's Power Mix



Source: S&P Global Commodity Insights - Global Integrated Energy Model
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Chart 3

Coal In India's Power Mix



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Asia's fairly new coal-fired generation fleet is another reason for its reluctance to turn away from coal. The average age of a coal plant in the U.S. and Europe is between 40 years and 50 years, and most are now approaching the natural end of their useful life spans. In Asia, much of the fleet has been built in the last 10 years, making significant plant closures unlikely before 2030 at the earliest.

The energy transition is also now more complex because of security of supply and geopolitical considerations, exacerbated by the ongoing Russia-Ukraine conflict. China, for instance, has declared that, although its decarbonization efforts will continue, energy security is its first priority.

Carbon Capture And Storage May Hold The Key To Long-Term Coal Usage In China

For now, without strong carbon pricing or policy mandates, CCUS technology is unlikely to be applied in power generation. That said, according to China's official "CCUS annual research report," carbon capture is China's indispensable "strategic choice" for reducing carbon-dioxide (CO₂) emissions and ensuring energy security in the future. China's emissions reduction from CCUS could be 0.6 billion tons-1.4 billion tons in 2050. The success of meeting net zero goals for countries like China, India, and Indonesia hinges significantly on the future economic and technical feasibility of CCUS technology.

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According to the research report, CCUS technology would add Chinese renminbi (RMB) 0.26 per kilowatt hour (/kwh) to RMB0.4/kwh (roughly \$40 per megawatt hour (/MWh) to \$60/MWh) to the cost of coal-fired power generation. This is almost the same as China's historical coal-fired power tariff of RMB0.35/kwh-0.40/kwh, and compares to current power prices of RMB0.50/kwh-0.60/kwh. Put differently, for CCUS technology to be competitive, it would require a carbon price of \$40 per ton-\$60 per ton of CO₂, whereas Chinese carbon prices currently trade at less than \$10 per ton. For reference, according to the International Energy Association, the cost of CCUS technology varies widely between \$40 per ton and \$120 per ton of CO₂.

Policy Approaches Differ Between China And India

China has pledged to achieve peak carbon emissions by 2030 and may well meet this target earlier, given its track record of overdelivering on its five-year renewables targets. Carbon emission growth in the country has started slowing since 2012, when larger rollouts of wind and solar capacity began. The lingering impact of COVID-19, which is still leading to lockdowns in Asia, could help make targets more attainable, since energy demand is currently somewhat lower than anticipated, although coal use has also rebounded faster than expected.

S&P Global Ratings believes that, India, on the other hand, will likely miss its 2022 renewable energy capacity targets, and its ambitious 2030 targets would be even harder to achieve with the country set to continue increasing coal use until 2050.

China's policy approach is multi-faceted, serving to discourage coal-fired generation while encouraging renewables. With the launch of China's carbon market in the summer of 2021, coal-fired power plants will need to comply with emissions targets. By contrast, India's policies are aimed at making renewables and other alternatives more attractive rather than penalizing coal use. In our view, India still lacks comprehensive energy transition policies and a clear commitment to phase out coal.

Coal-Related Sectors Face Mounting Credit Risks And Financing Costs

Financial markets are independently taking action on the energy transition, and often ahead of policymakers. The pool of funding for coal projects is shrinking, with an increasing number of governments, financiers, and investors devoting more attention to climate risks. Although leading rich and developing nations have agreed to stop financing overseas coal-fired power plants, the current focus on energy security and higher energy prices is creating some hesitation.

Domestic bank funding is still available in China and India but, like all other funding channels, is steadily decreasing. With investor appetite diminishing, some coal projects are struggling to refinance, with access to capital--and not just its price--increasingly becoming an issue, heightening the risk that some assets may become stranded, or even default.

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