China’s power crisis: Long-term goals meet short-term realities

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Power outages in China were widely expected this year after the country had experienced some rationing in December 2020 and then again over the summer. In early September, a handful of localities were seeing shortages but by October, just in time for the national holiday, over 20 Chinese provinces were curbing or rationing power supplies for end users. Large industrial users have seen their power disconnected for long stretches while others have had to limit their use. In China’s North-eastern provinces, the power shortages have also led to cuts in residential use, a rare occurrence for a country aiming to prioritise household energy supply.

The reasons for these outages are widely covered but also highly debated: is it high coal prices or the “dual control” policies—the cap on provincial energy consumption and the energy intensity reduction target set by the central government? While there are a number of factors contributing to the power outages, the mixed signals from the central government, combined with pricing distortions in China’s power market are at the heart of this crisis. A strong rebound in export-oriented manufacturing activity led to high industrial demand and therefore rising electricity consumption. But the growing emphasis on limiting energy use and reducing energy intensity has sent local officials mixed signals. Provinces, coal importers and generators may be using these power outages to highlight their disarray. What is more, due to the domestic power pricing mechanism, coal generators and importers have had few incentives to stock up and import coal when international costs are rising.

So, while some of the outages are due to a fundamental supply-demand imbalance, the severity of the power shortages reflects the clash between the unstoppable force of the market and the immovable object of the state and its plan. This comment briefly reviews the causes of the power outages, their near term market impact on oil and gas as well as the outlook for power pricing reform and the extent to which they are changing the thinking in China about the 2030-2060 goals.

**The worst of both worlds**

China’s “dual control” policies have been seen as a key contributor to the power crisis, but the curbs are more likely a culmination of factors including soaring fuel prices and coal shortages in the context of strong manufacturing activity, heightened by pricing policies and mixed signals from the central government.

China’s “dual control” policy dates back to 2016 when it was introduced in the 13th Five-Year Plan. Policies to reduce energy intensity have been in place for much longer and have historically been a higher policy priority compared to efforts to control total energy consumption. This focus on energy intensity has borne fruit due to a combination of improvements in energy efficiency in the industrial sector alongside the expansion of the service sector in the Chinese economy. But the strong economic recovery following the COVID-19 pandemic has upended this trend, bringing power demand soaring (see Figure 1).

In early 2021 the government set a target for energy intensity to decline by around 3 per cent during the year, a goal that was then broken down to provincial targets and assigned to the respective governments. But for the first half of the year, the NDRC found 12 provinces lacking on both counts (see Figure 2). Provinces including Guangdong, Zhejiang and Jiangsu proceeded to ration power supplies in order to meet these goals. But if economic and manufacturing activity is indeed strong, curbing power supplies will only stall growth for a while. When the switch is flicked back on, it would lead to even stronger demand. What is more, the NDRC stated that the “dual control” mechanism can be adjusted according to local circumstances. That said, the NDRC’s clarification on the “dual control”

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3 The NDRC list can be found here https://www.ndrc.gov.cn/xwdt/tzgg/202108/P020210817567136519542.pdf

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targets, issued in mid-September⁴, seems to continue with the mixed signals: It gives provinces more flexibility in setting their targets and allowing them to include renewables in their energy consumption goals, while also stressing the need to strictly control “dual high” projects (projects with high energy consumption and emissions).

Figure 1: Electricity demand, TWh and y/y change (%)

![Graph showing electricity demand](image)

Source: China Electricity Council

Some of the commentary in China suggests, however, that local officials were rationing supplies as a means of accelerating their industrial restructuring toward higher-value add manufacturing, squeezing out energy-intensive activities, also in response to the country’s environmental targets. Clearly, the government’s strong climate agenda has been a contributing factor, exacerbating the imbalance between supply and demand.

Lower on supplies

On the supply side, an anti-corruption campaign in Inner Mongolia⁵ last year has strained coal supplies while heightened safety inspections at coal mines in China⁶ and tighter environmental controls have meant that mines have been reluctant to produce beyond nameplate capacity as they would have done in the past. Even applications for expansion of domestic coal production have been slow to get approved and ramp up⁷. The NDRC’s own calls to ramp up supplies have also had limited impact.

Coal imports, meanwhile, have been constrained by floods in Indonesia⁸, by China’s ban on Australian coal, as well as new Covid-19 outbreaks in Mongolia⁹. Renewables in China too were lower than last

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⁴ “the National Development and Reform Commission issued a notice on improving the energy consumption and “dual control” measures” (Chinese), 11 September 2021, https://www.ndrc.gov.cn/xgk/zcfb/tz/202109/t20210916_1296856.html?code=&state=123
⁵ “China’s Inner Mongolia to probe corruption of 20 years in coal industry”, Global Times, 4 March 2020, https://www.globaltimes.cn/content/1181502.shtml
year, with droughts in Yunnan constraining hydroelectricity supplies to Guangdong province while poor wind conditions in Liaoning province in Northeast China limited the supplies available to the grid. China is increasingly facing higher-than-expected demand during non-peak periods, and even stronger demand during peak periods. That said, even during the current peak period, thermal plants in many provinces are operating at low utilisation rates. The average utilisation hours for coal-fired plants in China over the period January to September 2021 was just 3,450 hours (52 per cent)\textsuperscript{10}. Though marginally higher than over the same periods of 2019 and 2020, it is significantly below the 63%, or 5,500 hours per year, that is seen as economically viable under the fixed on-grid tariffs\textsuperscript{11}.

**Figure 2: NDRC scorecard for H1 2021**

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<tr>
<th>Region</th>
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Note: Red indicates that a region’s actual energy consumption was more than 10 per cent higher than its target. Orange signifies a less than 10 per cent difference between a region’s actual and target volume. Green, “third-level pre-warning” – means the target was achieved.

Source: NDRC


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By September 2021, thermal coal prices had reportedly doubled from a year ago. In late September 2021, an estimated 220 GW of coal-fired power capacity in the region of the State Grid Corporation was not operating; about 20 per cent of the nation’s total installed coal-fired capacity. Around half of this idle capacity was under maintenance, while the rest was unable to obtain coal supplies. But the root cause of the maintenance is that policymakers had demanded coal-fired power tariffs remain on par with on-grid benchmarks, which were calculated during much lower coal price periods. Moreover, the tolerated 10 per cent fluctuation above benchmark tariffs was effectively scrapped after the pandemic in order to help the economic recovery and limit inflationary pressure. Coal generators have therefore been reluctant to operate their plants and have also reduced their on-site inventories to a week or less. In some of the North-eastern provinces, coal generators may be saving their low stocks for winter heating, preferring to ration supplies to industrial users now but avoid a shortage in heating fuel in the colder months.

The shortages are also exacerbated by limited inter-regional power connectivity and logistical bottlenecks. Any potential surplus capacity in one province is unlikely to be exported to another, either because of the “dual control” objectives or potential financial losses, or simply because the networks are not in place. To this effect, the NDRC also called in late September\(^2\) on railway companies to “strengthen transportation in key areas to ensure stable supplies”. Finally, lower supplies have coincided with strong industrial recovery from the pandemic, alongside rising activity in export-oriented sectors such as textiles, computers and electric machinery related to reduced output in other manufacturing countries. Combined with heatwaves in some regions, China’s power demand has been skyrocketing.

Yet this demand surge and limited supplies should not have come as a complete surprise to Chinese coal importers or more broadly, to macroeconomic and energy planners. Their inaction may in part be a signal that they need clearer marching orders from the government. And much like the fuel shortages in 2005—when the oil companies were incentivised to export rather than sell into the domestic market because of price dislocations—the power outages acted as a catalyst for deeper price reform.

**What now?**

The government’s immediate response has been to tackle some of the underlying issues with a focus on increasing supplies while also accelerating the long-stalled power price reforms. The country’s state-owned assets regulator required that the relevant companies prioritize coal output and supply while the largest state-owned utility company, State Grid, promised it would strengthen the distribution of power across the entire network while monitoring consumption. Indeed, the well reported order to secure supplies at “any cost”\(^3\) was first and foremost a domestic call to increase production and ensure supplies, even at a (greater) financial loss, alongside higher imports of both coal and gas.

On 8 October, Premier Li Keqiang at a meeting of the State Council, issued six specific orders to deal with the power shortages including\(^4\):

1) Ensuring supplies for winter heating, including coal and gas, with provisions to be made for gas from the South of the country to reach the North as needed.

2) Ramping up production at existing coal mines and accelerating the commissioning of approved coal mines. The Ministry of Transport is also tasked with prioritising coal transport to ensure winter supplies.

3) Supporting coal-fired generators financially by offering them tax deferments and support from financial institutions.

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13 “Ensuring safe and stable energy supplies for residential heating in the winter and stable operations of the society and economy”, (Chinese), State Council, 14 October 2021, http://www.gov.cn/xinwen/2021-10/14/content_5642492.htm
14 “Li Keqiang presided over an executive meeting of the State Council to make arrangements for the supply of electricity and coal this winter and ensure the smooth operations of the society and economy (Chinese), State Council, 8 October 2021, http://www.gov.cn/premier/2021-10/08/content_5641406.htm

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4) Improving the coal and power pricing mechanisms through power price reforms (see below for more details).

5) Accelerating the construction of wind and solar capacity as well as emergency backup and peak shaving power sources; Improving the emergency reserves of oil, natural gas and coal.

6) Limiting the development of “two highs” projects (namely, projects that are high in energy consumption and high in emissions); Improve the “dual control” mechanism; promote energy savings and carbon reductions.

The measures cover both the short-term need to fill the supply gap as well as medium- and longer-term measures to ensure reliable energy supplies and a more market-based approach, with a recognition that the “dual control” measures were inadequately implemented. The following day, Li Keqiang also chaired a meeting of the National Energy Commission (NEC)\(^\text{15}\), a high level body that has only met four times since its creation in 2010.

The full details of the meeting are not available, but the official readout highlighted “energy security” and the expectation that energy needs will continue to grow as the country develops, suggesting a focus on supplies even as the country pursues decarbonisation. This has been taken by some commentators as a sign that the government is rethinking its climate targets and pledges\(^\text{16}\). Li stressed, however, the need to promote the “green and low-carbon transformation of energy” while also warning against a “one size fits all approach” and a “campaign style carbon reduction”, which the Politburo had warned against already at the end of July. In short, the government has been stressing the need to “establish new rules before breaking old ones” meaning that the development of renewable energy should be expanded and used as a basis for phasing out fossil fuels, but warning against an overly rapid curtailment of fossil fuels.

**Power price reform**

Following the State Council meeting, on 12 October 2021, the NDRC announced major changes to the power pricing arrangements for coal-fired power, as well as the way in which commercial and industrial power customers buy power. The notice\(^\text{17}\), effective 15 October 2021, includes four major changes:

1) All coal-fired generators are now required to sell power into the wholesale market. The ‘on grid’ pricing for coal-fired power will be set according to the ‘base + float’ coal price mechanism. Renewable energy will likely continue to be linked to the base price for coal.

2) The on-grid price of coal-fired power will be allowed to fluctuate more: The ‘float’ component may now rise or fall by 20 per cent relative to the base price. Although there will be no upward cap for energy intensive industries. This policy does not apply to the spot market.

3) All commercial and industrial users will now buy electricity in the wholesale markets: The previous ‘catalogue’ tariff for commercial and industrial (C&I) users is cancelled. They must now buy electricity through the market, either via direct participation or through aggregators/retailers. Power consumers that have not identified a power supplier will continue to be linked to the ‘on grid’ price.

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\(^\text{15}\) The NEC was created as a steering committee that allows multiple stakeholders to coordinate directly on energy policy matters, but in reality seems to have been convened at critical times for the country’s energy development in order to steer the industry in the right direction. “Li Keqiang presided over a meeting of the National Energy Commission”, CCTV, 11 October 2021, https://tv.cctv.com/2021/10/11/VIDEIh9Skz7SlBJv5wq8MMi7211011.shtml


\(^\text{17}\) “The NDRC notice on further deepening the market-oriented reform of coal-fired power generation and on-grid tariffs” (Chinese), 14 October 2021, https://www.ndrc.gov.cn/xggl/zcfb/tz/202110/t20211012_1299461_ext.html?mc_cid=e378e0a2ae&mc_eid=1f5ebaac4b
4) Residential and agricultural users are exempt from this policy and will continue to use the listed catalogue tariffs.

The new power pricing mechanism is hugely significant as it will end the guaranteed offtake for coal-fired power in China—which has enabled and even incentivised the approval of coal-fired capacity—while also supporting the use of renewables as these are likely to become the cheapest power source on the wholesale market. And since there will be greater pass through of costs to end users, industrial and commercial users will see more volatility in prices which, over time, should introduce greater efficiencies in power use. Over time, this new pricing mechanism should enable power consumers to influence the supply and pricing of power products by making economic choices, and power generators will subsequently invest in new capacity based on the demands of power consumers.\(^\text{18}\)

Even though the measures were introduced quickly following the surge in power outages, they have long been in the works and come as a continuation of policies issued in 2015. But the severity of the power crunch and the challenges of navigating between the market and the State highlighted the need to move forward. While this is a positive step forward, much will depend on implementation. Of particular importance will be the degree to which local governments interfere with the functioning of the wholesale markets in order to protect local industries from rising power prices. An additional consideration will be the extent to which electricity can be readily transmitted across the country – another issue that has faced local protectionism. It will also be important to see how often on-grid prices are revised and how the emissions-trading system will factor in to these costs.

In the near term, higher power prices and greater pass through to end users will help the ailing coal-fired power generators. But decision makers hope that the revision of the power pricing mechanism will not raise inflationary pressure given the increase in supplies alongside improved efficiencies in consumption. Nonetheless, the short-term drive for more coal, gas and oil, suggests that supply security remains a top priority even though the long-term targets remain.

**The dash for gas**

The power outages and the calls to secure supplies at “any cost” have reverberated through commodity markets. And with global gas prices spiking, China’s rush to import is a key contributor. But gas flows into China have been consistently high in 2021, well before the power crunch. Indeed, gas can offer only modest relief for the power crunch given that it accounts for 6 per cent of the installed power capacity nationwide, compared with 66 per cent for coal. In terms of power generation, its share is even more limited, at 4 per cent. Even in Guangdong, the province with the largest gas-fired power fleet, gas represents one fifth of the capacity mix while coal accounts for almost half. Moreover, using spot LNG to supply gas-fired power generation could well result in greater financial losses than coal. Reportedly, roughly a third of Guangdong’s gas power fleet was not operating due to shortages of gas and their prohibitive cost.

That said, the strength in gas imports in the year-to-date was due to a combination of factors including the rapid economic recovery in the industrial sector, strong power demand, a cold winter, followed by a hot summer, as well as a final push for the coal-to-gas switching policy in North-eastern China. Restocking has also already begun both at underground storage facilities, with Sinopec starting up a new 10 bcm underground storage facility in North China, and at regasification terminals, including at PetroChina’s recently expanded Rudong terminal. This year, China has added over 7 Mtpy of new regasification capacity and another 5 Mtpy set to come online in November.

In the year-to-September, Chinese implied gas demand reached 285 bcm (a staggering 21 per cent y/y increase, Figure 3), exceeding 30 bcm a month, suggesting that the National Energy Administration’s forecast that demand in 2021 will total around 370 bcm could be a realistic estimate. Of that, LNG imports are on track to hitting and even exceeding the 100 bcm mark.

The state-owned majors are now reportedly confident that the supply shortfall this winter will be limited to 2-4 bcm, given that they have stocked up on gas and are increasing efforts to raise production

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throughout the winter. While China may need additional gas supplies during the Winter Olympics as it looks to ensure blue skies, in the event of extremely cold weather and shortages, the government will curb industrial use in order to ensure heating demand. The strong pull on LNG will continue but flows from the Power of Siberia pipeline alongside higher imports from Central Asia will limit the increase, especially since in September, given the oil-indexation and time lag, piped gas (at the border) cost on average $6/MMBtu less than LNG imports.

In 2022, as economic activity is set to soften, industrial demand growth as well as incremental LNG requirements are set to slow, even as residential and commercial users continue to phase out coal and replace it with gas.

Figure 3: China’s gas supplies, bcm

Note: Data for 2021 is Jan-Sep
Source: NBS, China Customs, OIES

But the government’s call to arms has been well received by the gas majors who will use this also to lobby for more regasification terminals and seek to improve their market share at the expense of the independents. The NDRC, for instance, approved construction of Sinopec’s 6 Mtpy Longkou facility in September, although it is unclear if this brings the construction timeframe forward from the original 2024 completion date. But by announcing its intentions to import more LNG, Sinopec and the other majors will be able to use up import slots at PipeChina’s terminals, potentially limiting access for independent buyers which are also more reliant on spot purchases. Moreover, by concluding new long-term agreements with US sellers, they are looking to tick a number of political boxes.

But with gas prices also rising, the use of LNG in road freight is now reportedly less appealing, with sales of LNG trucks falling in the year-to-August by over 50 percent y/y, despite the introduction of tougher tailpipe emissions standards in China. Meanwhile, industrial users are also looking to secure diesel generators in an effort to maintain their activities over the coming months. But the extent of the expected uptick in diesel use remains an open question, as is refiners’ ability to raise runs and meet demand.

The diesel dilemma

Is the market overestimating China’s dash for diesel? Freight users, for instance, can hold off on buying new LNG trucks and opt for diesel trucks in the short-term, but this could take time to filter through to diesel demand, especially given the recent surge in diesel costs and reported limits on supplies at retail

19 “Sales of natural gas trucks fell in August by 83 per cent” (Chinese), First Commercial vehicle network, 25 September, 2021, https://page.om.qq.com/page/OicumxF46pYrET0DZXtVtcv0
stations. Moreover, even though the current power crunch and gas price hike may slow the uptake of LNG in freight, slowing the displacement of diesel, it is unclear how quickly (and if at all) truck drivers can switch from LNG trucking fleets back to diesel trucks. The short-term increase in sales of commercial diesel vehicles is likely to provide an uplift to diesel use, according to the China Internal Combustion Engine Industry Association, sales of diesel engines increased m/m by over 7 per cent, but they were still lower y/y by over 30 per cent. Moreover, truck drivers have reportedly slowed purchases of LNG trucks because of soaring LNG prices but also because environmental restrictions have been weighing on the transport of large bulk commodities. Combined with the slowdown in the real estate sector, there is a broader question for freight about the longer term trajectory. Nonetheless, the outlook for Q4 21 still looks strong due to demand for back up generation but also the winter harvest and the Singles day shopping spree which typically leads to a logistics surge.

Demand for diesel generators is also on the rise, with the China Internal Combustion Engine Industry Association pegging that January-September increase at 24 per cent y/y—but the costs are also increasing and the lead time for diesel generators is anywhere between two to three weeks in light of the surge in demand, suggesting that this spike in sales will not translate to stronger diesel demand before late October/early November. That said, for industrial users—which will see their power supplies curtailed to prioritise industrial users—investing in backup generation will be key to maintaining operations, despite the rising costs of the generators and diesel.

Yet diesel supplies in China are also tight. The consumption tax on blend stocks, introduced in June 2021, has limited the availability of off-road diesel from independent refiners and blenders. Meanwhile, the crackdown on the Shandong independents, alongside power rationing in Shandong, have weighed on supplies. Interestingly, though, the majors did not ramp up their refinery runs or their diesel output to capture market share earlier this summer when the consumption tax came into effect (see Figure 4). Yet according to PetroChina and Sinopec's earning reports, combined runs averaged 8.45 mb/d in Q3 21, marginally lower than the 8.47 mb/d reported in Q2 21.

This rapid tightening of the diesel market, and perhaps the anticipation of even stronger demand over the coming months, has sent prices skyrocketing, prompting the government to announce that it will release product stocks—although the timings and volume are unclear—and asking refiners to raise output. Sinopec, in response, has stated that it will increase its gasoil supply by 19 per cent in November from October, noting also that it has already increased its diesel output by 20 per cent from the average levels seen in the first nine months of the year, and that it will run its refineries at full capacity, adjusting the diesel yield to 29 per cent.

While the majors clearly need to pay lip service to the urgency of the demand situation, they have thus far been slow to adapt to the new demand spike. The higher margins and government mandate will certainly lead to a realignment toward the domestic market. But it remains unlikely that the majors will raise throughputs across the board.

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23 For more on the consumption tax, see OIES Oil Monthly, issue 6, https://www.oxfordenergy.org/publications/oies-oil-monthly-issue-6/
Figure 4: China product output, y/y change, mb/d

Source: China NBS, OIES

Higher runs would allow them to capture stronger diesel margins but would potentially leave an excess of gasoline supplies. What is more, peak travel season is now over after the October national holiday and with new bouts of COVID-19 infections, travel could remain constrained especially ahead of the Winter Olympics. That said, with the Lunar New Year falling in early February in 2022 and the Winter Olympic coming up, refiners will want to stock up on crude and oil products, but the outlook for demand remains a concern.

The power outages and China’s growth outlook

The power crunch also raises questions about the macroeconomic outlook for China and more broadly about the guiding policy priorities for China in the coming year. Economic growth forecasts have been cut, with Oxford Economics, for instance, now estimating that Q4 21 GDP growth will slow to 3.6 per cent from 5 per cent and that 2022 growth will come in at 5.4 per cent y/y, compared to an estimated 5.8 per cent previously. The impact is being felt across global supply chains with reduced manufacturing activity leading to shortages of textiles, toys and machine parts ahead of Christmas.

How the power crunch is resolved (or not) will be an important indicator of provincial policy priorities: If the power outages are due to overzealous implementation of the “dual control” policies, they could be reversed given also that the government has indicated that provinces have some leeway in implementation. This, in turn, would point to the importance the government attaches to economic growth. Even then, however, securing supplies through domestic output or imports (even of Australian coal!) will take time and may require further domestic price adjustments (or subsidies) suggesting that power rationing will continue through the winter. Indeed, the government has highlighted the need for ‘orderly’ rationing suggesting that provinces that may have failed to disclose the true extent of demand—for fear of falling afoul of the “dual control” policies—will now be expected to improve their forecasting skills and ensure that industrial users are forewarned of power outages and that residential users are supplied, especially during the cold winter months.

But if some of the power cuts are an attempt to squeeze out inefficient manufacturing industries, or a perceived need to prioritise environmental goals, it would suggest that China’s political economy is changing more fundamentally than previously thought, implying not only slower growth rates but further policy turmoil in the years to come.

Indeed, the change in China’s macroeconomic outlook seems as much policy-driven as it is the outcome of a perfect market storm. A swift succession of regulatory crackdowns has taken place in China this

26 “Ensuring safe and stable energy supplies for residential heating in the winter and stable operations of the society and economy”, (Chinese), State Council, 14 October 2021, http://www.gov.cn/xinwen/2021-10/14/content_5642492.htm
year, suggesting that it might be wise to pay attention slogans such as “Common Prosperity”. Likened to a Red New Deal or flagged as another Cultural Revolution, the agenda remains unclear. The government seems to be promising (once again) that it will deal with the numerous imbalances in the economy, that it will reduce inequality—in part through controlling and regulating the new economy—and make life better for ordinary people. Many of the moves seem to have genuine popular support. But the sort of industrial restructuring that could take place—and is perhaps being pushed by local officials—could lead to unemployment, much like transferring the wealth from the new economic sector (many of which are currently in the eye of the regulatory storm such as education, gaming and technology) is politically challenging. What implementation will look like is unclear and some form of course correction could come, but there are signs that the guiding principles of macroeconomic management are changing.

**Energy security and the 2030-2060 carbon targets**

The changing outlook for economic growth dovetails also with the carbon peaking and neutrality commitments. To be sure, the power crunch and the short-term need for more fossil fuels has cast doubts about China’s long-term commitment to its pledges to peak carbon emissions before 2030 and reach carbon neutrality by 2060 (the 30-60 targets). The expected increase in coal production in China has raised considerable attention in the context of COP26 that hoped to signal a clear end to coal with President Xi Jinping’s failure to attend COP26 in Glasgow casting further doubts about the country’s commitment. Added to this was China’s move with India to water down the commitment to phase out coal.

Despite these, Beijing continues to move forward with its 30-60 targets and in the run up to COP26, Chinese authorities issued a slew of policy documents. While, arguably, these regulations offered few specifics on the way forward, they are still significant as they highlight the government’s continued efforts to produce an overarching and consolidated strategy. On Sunday 24 October, Beijing issued the *Opinions of the Central Committee and State Council on the Complete, Accurate, and Comprehensive Implementation of the Work on Effectively Carrying Out Carbon Peaking and Carbon Neutrality under the New Development Theory* or the “1” of its “1+N” documents. The “1” is the top-level design document, and the N are numerous implementation plans, the first of which—the Action Plan for Peaking Carbon Dioxide emissions before 2030—was published on 26 October.

In terms of targets, the policy documents reiterate existing commitments to 2025, 2030 and 2060 including:

- Reducing **energy intensity and CO2 emissions per unit GDP** by 13.5 per cent and 18 per cent respectively from 2020 levels by 2025. By 2030, China will “significantly reduce energy consumption per unit of GDP” and reduce CO2 emissions per unit GDP by more than 65% from 2005 levels.

- By 2030, China will steadily decrease **carbon emissions** from their peak

- Raising the **share of non-fossil fuels** in primary energy consumption to around 20 per cent by 2025; 25 per cent by 2030—with the installed capacity of wind and solar power planned to exceed 1,200 gigawatts. The share of non-fossil fuels in primary energy consumption should reach over 80 per cent by 2060.

- Increasing **forest coverage** to 24 per cent (from 23 per cent at the end of 2020) with the accumulated size of forests reaching 18 billion square meters by 2025. By 2030, forest coverage should rise to roughly 25 per cent, or a cumulative 19 billion square meters.

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27 Although China has pledged to end financing for overseas coal
29 In Chinese here http://www.gov.cn/zhengce/content/2021-10/26/content_5644984.htm?mc_cid=be873e023d&mc_eid=1f5ebaac4b and in English here http://english.www.gov.cn/policies/latestreleases/202110/27/content_WS6178a47ec6d0df57f98e3dfb.html
Beyond these high level targets, the documents highlight that the increase in coal consumption will be limited during the 14th Five-Year Plan (FYP) period (2021-2025) and phased out in the 15th FYP (2026-2030) when oil demand will also peak. The documents point to an emphasis on energy conservation and demand side management alongside accelerated efforts to increase supplies of non-fossil fuels as well as innovation in areas including storage, hydrogen, low-carbon transport as well as carbon, capture utilisation and storage. Both documents also note the importance of carbon sinks as well as green finance.

To be sure, all of the above will be required in China’s energy transition and these documents offer little insight into the allocation of funding or further incentive schemes that will likely be determined by industry-specific guidance and local initiatives. Additional “N” documents are now likely to be issued to cover industries including steel, cement, petrochemicals, deepening power sector reform as well as the transport and building sectors.

But beyond the headline targets, the documents are also noteworthy in their emphasis that “endeavours to peak carbon dioxide emissions and achieve carbon neutrality must be incorporated into the overall economic and social development framework” pointing to the need for a broad overhaul of China’s economic and industrial model while also recognising the near term challenges, nothing that “based on China’s energy resource conditions of rich in coal but poor in oil and gas, we must insist on construction before destruction, stabilize the energy stock and expand the energy increment.” In addition, the documents reiterate the leadership of the CCP in this process as well as some of the institutional imperatives including better accounting and verification, an ongoing balance between the role of the State and the market, the need to incorporate the 30-60 targets in local officials’ performance metrics and adapting goals to local circumstances.

The power outages since late September have not changed the overall trend, but have crystallised the need to push forward with these structural adjustments while highlighting the near term challenges. Indeed, the “1” document is dated 22 September, even though it was only officially released in late October. As such, there was no “re-think” of the 30-60 pledges as they are an integral part of China’s wider economic, energy and industrial upgrading. This means that they will remain a top priority for central and local leaders but that these targets will also have to contend with other priorities, such as economic growth and social stability, among others. Over time, the hope is that these goals will be mutually reinforcing but there will be instances when they are at odds and local/central leaders will need to adjust. The mixed signals from the Chinese government this year have not helped matters and policy tensions will continue to plague China’s energy policy making over the course of the 14th FYP.

But the overarching documents released in late October will remain important reference points for China’s long-term trajectory, even though they leave room for interpretation. Looking ahead to 2030, one can imagine two scenarios: In one scenario, deliberate policy actions, combined with unintended consequences such as the power outages, cause the GDP growth rate to fall. If the construction of non-fossil fuel power generating capacity continues, carbon emissions will peak well before 2030. In an alternative scenario, the economy continues growing as before with many local officials looking to build out local capacity and infrastructure ahead of the carbon peak, thereby delaying the time when coal consumption peaks. Despite progress on new non-fossil capacity additions, carbon emissions peak closer to 2030. The reality is likely to lie between these two extremes and be the result of a combination of policy and luck interrupted by crises. Equally, the outlook for achieving carbon neutrality by 2060 has not been altered by recent events. But actions taken over the next five to ten years will be critical for setting the pace toward this objective.