Australia-China Relations Institute
澳中关系研究院

Perspectives

The PRC's path to carbon neutrality: Bright future, tortuous road

October 19 2021

Wei Li and Lei Zhang

Dr Wei Li is a Lecturer in International Business at the University of Sydney Business School.
Dr Lei Zhang is CEO at Yancoal International Holding.

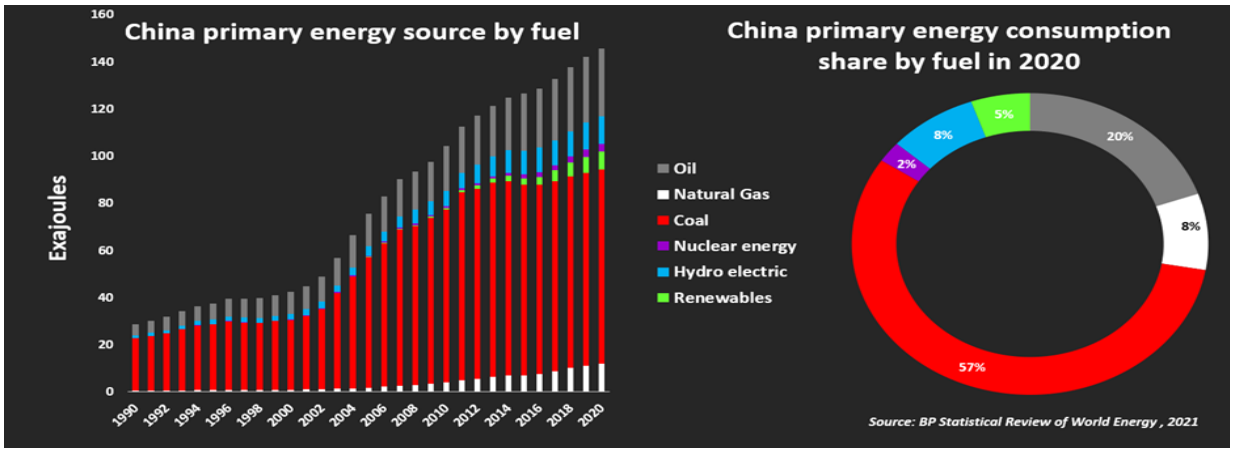
At the end of September this year, reports surfaced that two-thirds of provinces in the People's Republic of China (PRC) rationed power, plunging hundreds of millions of people into rolling blackouts. Based on publicly available information, factories are not running at full capacity, many of which are told to open five days a week. This has slowed down international order delivery times by at least 20 percent. Multinational companies in the PRC are also affected. The European Union Chamber of Commerce in China last week urged local governments to provide 'clear, transparent and predictable' power plans to avoid production and supply chain disruption.

While the current round of power cuts have had less impact on the PRC's overall manufacturing output as compared with the 2020 winter power shortage crisis that affected eastern and central China, the power shortage situation will only get worse as the winter season draws near.

Why is the PRC short on power this year?

With the PRC's economy coming back to life this year, demand for electricity has been on the rise. Between January and August, exports increased by 33.7 percent, year-on-year. According to the latest data published the PRC's National Energy Administration, between January and September, total electricity consumption increased by 12.9 percent to 6165.1GW, with residential consumption having increased by 7.0 percent to 908.8 GW. This placed a heavy strain on the power supply. Further complicating matters is the fact that, due to

Figure 1. The PRC's primary energy source and primary energy consumption by fuel



Source: BP Statistical Review of World Energy, 2021 via *Reuters*[1]

1 Muyu Xu and Shivani Singh, 'China liberalise s coal-fired power pricing to tackle energy crisis', *Reuters*, October 12 2021 <https://www.reuters.com/world/china/china-liberalise-thermal-power-pricing-tackle-energy-crisis-2021-10-12/>.

challenges presented by the COVID-19 pandemic, Christmas production orders from Thailand, Vietnam, India and Indonesia were transferred to the PRC in recent months, further driving up industrial electricity demand.

Coal supply has not been able to catch up with this increase in demand. Coal is used as a major energy source for electricity production in the PRC. Since 2016, China has been shutting down small and inefficient domestic coal mines and starting to diversify coal imports. From January to August, domestic coal production increased by only 4.4 percent year-on-year. And since August, production in the PRCs coal supply regions has been affected by extreme weather. Shanxi province (which produces 33 percent of the national coal supply), for example, this summer suffered from historic heavy rain and floods.

Internationally, the PRC seriously ramped up its coal import diversification efforts last year. Coal imports from Indonesia, for example, increased by 62.5 percent to 14.66 million tonnes. However, supply tensions in the Asia-Pacific region increased during the pandemic period. The PRC's overall coal imports fell by 10.3 percent year-on-year (accounting for seven to eight percent of coal supply). Thermal coal imports from Australia, South Africa and Colombia fell by 2.1 percent to 146 million tonnes, by 12.5 percent to 40.88 million tonnes and by 38.7 percent to 38.73 million tonnes, respectively. Meanwhile, thermal coal imports from Japan and India increased by three percent to 102 million tonnes and by 3.9 percent to 72.7 million tonnes.

This lack of supply and increased demand in coal has resulted in surging coal prices in the PRC. We now see a situation where electricity plants are running losses when they produce electricity. To keep up with the electricity demand, power plants in the PRC have purchased more gas and are running gas-fired units for longer. However, the price of imported liquefied natural gas (LNG) has also doubled in the past 12 months. (See, e.g., the Henry Hub Natural Gas Spot Price which increased by 165 percent to US$5.16 in September 2021).

What is interesting is, compared with the 2020 power shortage challenge, local governments in the PRC this time around are not so keen to push electricity plants to keep up with the demand. Instead, measures to control energy usage have been rolled out across key provinces in the PRC since last month. This is attributable to the fact that local governments are facing difficulties meeting a key performance indicator (KPI) of energy consumption control set by the central government, given the PRC's commitment to achieve carbon neutrality by 2060. On August 12, the National Development and Reform Commission (NDRC) published a rating list of all 31 provinces based on their energy consumption by GDP and use of coal – the 'dual-control targets' of the NDRC's plan to 'enhance control on energy intensive activities and total energy consumption'. Seven provinces, including the major industrial provinces of Guangdong, Jiangsu, Fujian and Yunnan failed to meet those targets.

The PRC's immediate policy responses and medium-term trajectory

Reforms on electricity prices to help power companies pass on the high costs of coal have been ongoing. While the coal price was market based, electricity prices were controlled by the central government. On October 8, the PRC's State Council said it would allow coal-fired power prices to fluctuate by up to 20 percent from base levels, an increase on previous limits.

In addition, some domestic coal mines and power plants are supported to release 'advanced' production capacity. Banks and other financial institutions have been told to prioritise lending to domestic qualified mines and power plants so they can increase thermal coal and electricity output, according to a statement by the China Banking and Insurance Regulatory Commission October 5. While the effects will take time to materialise, Inner Mongolia and other provinces have made it clear that they will accelerate the increase in coal production capacity. The NDRC recently announced to increase coal import and pipeline gas for coming winter.

The recent power shortage crisis will put pressure on companies in energy intensive industries, including pulp and paper, metals, cement, chemicals and refining, and iron and steel. Small and medium-sized enterprises (SMEs) will undoubtedly look into diversification into other sectors or re-locating their plants into other countries, if possible. For larger companies, we will see more consolidation and mergers, with an emphasis on efficiency-driving and value-adding activities. The PRC's recent power cuts and restrictions are more targeted at these industries.

Finally, while the energy consumption control KPI target for local governments has not been significantly loosened (a three percent overall reduction in energy consumption intensity) it may be slightly fine-tuned in future. Local governments are required to issue targeted policies to correct the 'one size fits all' stop-limit production measures. Recently, the PRC State Council proposed that renewable energy consumption should not be included in the total energy consumption within a certain period of time, which will also help ease the short-term pressure of energy consumption control policy constraints.

The long-term implications

While the PRC has been quite successful in managing the fallout from COVID-19, the country is not immune to the impacts of the virus on other countries, particularly from a supply chain perspective. On the energy side, it is likely that a focus on the diversification of energy sources will continue. It also means there will be increased demand for a diversified portfolio of energy sources (coal, gas, wind, solar, hydro and hydrogen) and advanced power storage technologies to adapt to the fluctuating nature of new-energy production.

In addition, while natural gas and LNG are among the cleanest fossil fuels and as the PRC looks to lock in an LNG deal with the US, domestic and international investors are increasingly pressuring banks and financial institutions away from investing in any type of fossil fuels. There are internal debates in the PRC regarding the suitability of natural gas as a transition energy source to net zero given the lock-in infrastructure costs are immense. Further, there is a lack of consensus on the transition life cycle, which, depending on which expert source is consulted, can be longer or shorter than one or two decades. The US, the UK and Japan are well prepared to convert to clean energy with gas, with gas in each country accounting for 38.6 percent, 40.1 percent and 35 percent of overall thermal power electricity generation, respectively. At present, gas accounts for 4.5 percent of the thermal power electricity generation in the PRC.

Whether the PRC follows a path of coal-gas-new energy transition, or of coal-new energy transition directly, it is clear that coal is likely to remain a key energy source for the PRC for some time. As Australia is likely to remain the world's largest exporter of coal, there is significant potential for an energy alliance on coal between the PRC and Australia on the path to carbon neutrality.

Authors

Dr Wei Li is a Lecturer in International Business at the University of Sydney Business School. She chairs Business School's Research Ethics Committee. Before joining the university, Dr Li worked in corporates in the UK and China. Her current research looks at the globalisation of Chinese enterprises and Chinese economy. She has also published extensively on sustainability and renewable energy in China. She is the recipient of numerous industry research grants, including the recent National Foundation for Australia China Relations 2021-22 Competitive Grant. Dr Li is a regular contributor to public debate on topical issues linked to Chinese investment, sustainability and renewable energy in China. She appears regularly as an economic commentator for ABC and SBS Radio.

Dr Lei Zhang is Chief Investment Officer at Yanzhou Coal Mining Ltd (SSE: 600188, HKeX: 1171), CEO at Yancoal International Holding, and Masters supervisor at National Accounting Institute in Beijing, China. Previously, he had various senior executive roles with Chinalco Mining International (HKeX: 3883) and multinational companies including SK, Shell, and Siemens. Dr Zhang has a Doctor Degree of Economics from Graduate School Chinese Academy Social Science, an MBA from Peking University Guanghua School Management, and is a CPA from Institute Chartered Accountants Australia.