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King Abdullah Petroleum Studies and Research Center

# Commentary

## Balancing China's Energy Security and Its Transition to Carbon Neutrality

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Dongmei Chen and Mari Luomi

## Introduction

At the United Nations (UN) General Assembly's seventy-fifth session held on September 20, 2020, Chinese President Xi Jinping pledged that China would reach peak carbon emissions before 2030 and achieve carbon neutrality by 2060. This is seen as a significant step in the global efforts to fight climate change, and the goal has swept through China. Carbon peaking and carbon neutralization have become buzzwords across government, academia and the business world. Every provincial and municipal government has begun to make its own plans and to design new initiatives to achieve these targets. In 2021, the State Grid Corporation of China launched its carbon peaking and carbon neutralization plan. The Three Gorges Corporation, a major power company, has also defined its timeline for reaching these goals, and China Bao Steel has announced its goal of achieving a 30% carbon reduction by 2035. Even social and community groups have started to roll out communication and education activities on carbon peaking and neutralization.

Two years after this announcement, another speech delivered recently by President Xi has triggered widespread discussion and debate regarding China's commitments and efforts to address climate change. This speech was made on January 25, 2022, during the thirty-sixth collective study session on issues related to carbon peaking and carbon neutralization within the Politburo of the Chinese Communist Party, China's highest decision-making body (Xinhua 2022a). In addition to stressing the importance of achieving China's 'dual carbon' goals, that is, its medium- and long-term emissions targets for 2030 and 2060, President Xi highlighted several important short-term issues, including securing the supply of energy, materials and food. He further emphasized avoiding 'one size fits all' measures for provinces, but to consider the differences among regions and sectors. He also encouraged taking rational steps to achieve progress in the near and medium term and enhancing the integration of market-based and government-oriented approaches.

Two days after this speech, President Xi visited a coal-fired heat and power supply company in Shanxi Province, his third visit to an energy enterprise since September 2021. This was widely seen as an indication of the Chinese leadership's concern with ensuring the country's energy supply (Xinhua 2022b).

These recent developments seem to signal that China is increasingly emphasizing domestic energy supply security and economic stability. From a climate change policy perspective, the obvious concern is whether this might weaken China's commitment to reaching its climate targets or complicate the implementation of these targets. Simultaneously, a successful net-zero energy transition will require balancing several priorities to sustain economic growth. In light of this, we explore the following questions in this Commentary:

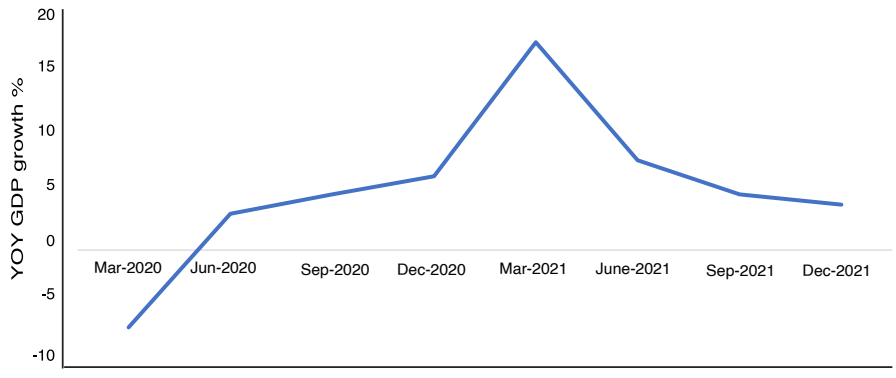
- What are the factors driving China's increased emphasis on energy security?
- Is China backing away from its commitment to reduce carbon emissions?
- Will China's new balancing strategy endanger its climate goals?
- What is Saudi Arabia's role in balancing China's energy security with its climate goals?

**China is increasingly emphasizing domestic energy supply security and economic stability**

## What are the factors driving the increased emphasis on energy security?

China has grappled with daunting economic challenges since the beginning of the COVID-19 pandemic. In 2020, China was one of the few major economies in the world to expand, with gross domestic product (GDP) growth of 2.2% (NBS 2021). In 2021, China was also in a leading position among major global economies, with year-round GDP growth of 8.1% (NBS 2022). However, this figure is underpinned by uneven growth rates throughout the year: After double-digit growth rates in the first half of 2021, economic activity in China cooled rapidly in the second half of the year (Figure 1). This slowdown led the World Bank (2021), the International Monetary Fund (IMF 2022) and the OECD (2021) to adjust their economic forecasts for China in 2022 from around 8.0% to 4.8%-5.1%. Daily forecasts of China's economic activity by ISI Emerging Markets show GDP growth falling to 4.1% in January 2022 (CEIC 2022).

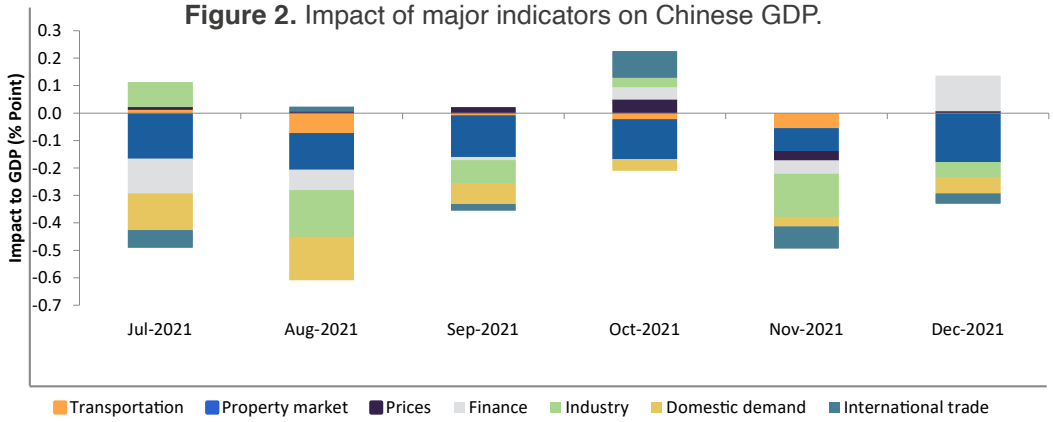
**Figure 1.** China's quarterly GDP growth (2020-2021).




Source: NBS (2022).

This slowdown reflects a less-favorable base effect: an abnormally high figure a year ago that will make China's most recent growth lower when GDP is measured year-on-year. The slowdown also presents an unprecedented challenge for China's government as it attempts to shift the economy from external to domestic demand, and from investment and industry-led growth to a greater reliance on consumption and services. As shown in Figure 2, sporadic COVID-19 outbreaks and a zero-tolerance approach have exerted downward pressure on domestic consumption throughout the year. A continued downturn in the property sector has had the most significant contribution, dragging down GDP growth by 0.17%. International exports have shown their vulnerability to disruptions in global maritime transport and turbulence triggered by United States (U.S.)-China tensions in the areas of geopolitics, economics and technology. Furthermore, China's traditional playbook for boosting growth through infrastructure investment has run its course.

**Figure 2.** Impact of major indicators on Chinese GDP.




**The slowdown in China's GDP presents an unprecedented challenge for China's government as it attempts to shift the economy from external to domestic demand, and from investment and industry-led growth to a greater reliance on consumption and services**

Source: CEIC (2022).

Furthermore, and more importantly, a large-scale power crunch has been unfolding in China since September 2021 (Lee 2021; Orient Securities 2021), which adds to the existing challenges for its economic recovery.

This power crunch can be explained first by the imbalance between China's ambitious long-term goals and its immediate short-term needs. China is a clean energy powerhouse and has played a leading role in many of the world's success stories in terms of market investment and technology development. Seven of the top ten solar panel manufacturers and six of the top ten wind turbine manufacturers with the largest global market share in 2020 are Chinese (Chen 2021). The installation of renewables in China also continues to break records, with a total capacity exceeding 1,000 gigawatts (GW) in 2021, accounting for 44.8% of the country's total power generation capacity (Government of China 2022). Under its long-term carbon neutralization goals, China expects to meet 80% of its primary energy consumption needs with non-fossil fuels by 2060. However, non-fossil fuels accounted for only 28% of the total power generated in the country from January to August 2021 (Lee 2021). Coal remains the main power source in China, accounting for more than 60% of its power generation and 57% of its total energy consumption (IEA 2021; He 2020). The transition toward net-zero carbon emissions will require major structural changes and time, and the short-term reality is that China must rely on coal to meet its power demand.

China's power crunch can also be attributed to the long-standing conflict between market-oriented coal prices and government-controlled electricity rates. Despite the central government's efforts to step up its reforms in recent years, a market-based pricing mechanism for the power sector has not yet been fully implemented. As China's economy recovered quickly from January to August 2021, domestic demand for electricity increased dramatically. However, there was no growth in coal output because of climate and environmental policies limiting coal production and investment. This has led to a continued rise in thermal coal prices, nearly double their 2020 levels. However, tariffs for power generation and electricity prices paid by end-users are regulated by the government, with little room for adjustment. When power generators cannot afford the continued mounting costs, power rationing and outages occur. More than two-thirds of China's provinces have imposed strict power rationing measures (Orient Securities 2021). Energy-intensive sectors, including steel, aluminum, cement and chemicals, are among those most affected. Heat and electricity supply have become prominent issues, especially for people living in the northern region, during the cold winter season. This is leading to the fear of social instability.

Furthermore, climate policies have contributed to this power crunch. On August 12, 2021, the National Development and Reform Commission of China (NDRC 2021a) published a rating list of all 31 provinces based on their mid-year progress in reaching the dual energy control targets: energy consumption by GDP (i.e., energy intensity) and total energy consumption. Nine provinces received a first-level warning for increases in their energy intensity; ten provinces received a second-level warning for failing to reach their energy intensity reduction targets. Eight provinces, including the major industrial provinces of Guangdong, Jiangsu, Fujian and Yunnan, failed to meet their total energy consumption control targets. Provinces that fail to meet their dual control targets will face consequences, such as losing new project approvals. Failure to meet their targets will also affect the performance appraisals of government officials. For many local authorities, power rationing has become a solution to both reducing financial losses from power generation and achieving the dual energy-control targets.

As the country faced difficulties in driving growth through domestic consumption during the COVID-19 outbreak, the large-scale power crunch also significantly impacted the growth of the industry sector. Tens of thousands of industrial enterprises have been affected, with production halted or reduced as a result of power rationing. This has not only caused massive losses to Chinese industrial sectors, but it has also exacerbated the disruption of the global supply chain and, to some extent, slowed the global economic recovery.

**China's power crunch can be explained by the imbalance between China's ambitious long-term goals and its immediate short-term needs**

**To drive the change toward a net-zero carbon society, China has a mature, top-down political system in place to coordinate and integrate its resources. China also has an effective working mechanism, the five-year plan (FYP) target setting and appraising system, to lead the way to its long-term goals**

### Is China backing away from its commitment to reduce carbon emissions?

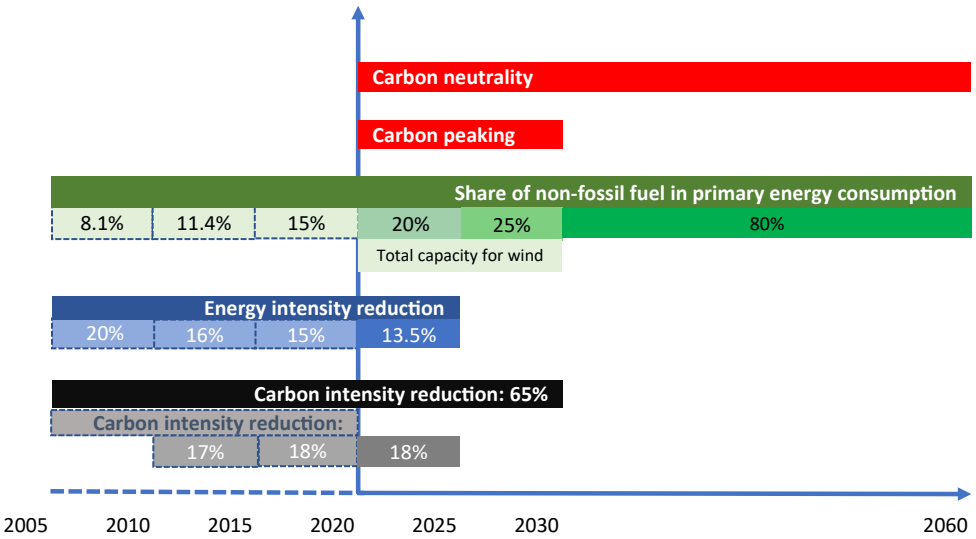
Given the energy supply crunch and the Chinese leadership's signaling of an added emphasis on domestic energy supply security and economic stability, is China going to change its commitment on climate change targets?

The 2021 update to China's nationally determined contribution (NDC) enhanced its previous targets from 2015. It is now committed to reducing its carbon dioxide (CO2) emissions per unit of GDP (i.e., carbon intensity) by over 65%, reaching peak emissions before 2030 and ensuring non-fossil fuels account for a primary energy share of around 25% by 2030. The NDC also mentioned a target of achieving carbon neutrality before 2060, which was originally announced by President Xi in September 2020 (Government of China 2015, 2021; Xinhua 2020).

To drive the change toward a net-zero carbon society, China has a mature, top-down political system in place to coordinate and integrate its resources. China also has an effective working mechanism, the five-year plan (FYP) target setting and appraising system, to lead the way to its long-term goals. The targets established in each FYP are usually disaggregated from the central government to provincial and municipal levels and are used as performance appraisal indicators for officials in charge. This target system also covers and evaluates major state-owned enterprises. This is how the country translates its long-term vision into actionable and approachable targets within a specific period. This is also how it works to ensure implementation and progress tracking, especially for mandatory targets.

Consequently, there is significant continuity and consistency in China's climate targets. As shown in Figure 3, China's targets and commitments related to climate change have been consistent across the last three FYPs. The target of reducing carbon intensity by 17% compared with its 2010 level was first introduced as a mandatory target in the twelfth FYP (2010-2015) for national economic and social development. Since then, the targets for non-fossil fuel development, energy intensity reduction and carbon intensity have become integrated into the FYP target system. The pledge made in 2020 on carbon peaking by 2030 is the same as that announced in 2015. The 40%-45% carbon intensity reduction target by 2020, which was set in 2010, has been the basis for China's targeted 65% reduction by 2030. The only significant change was in the share of non-fossil fuels in primary energy consumption, which increased from 20% when it was first announced in 2015 to 25% in the 2020 pledge.

**Figure 3.** China's target system for achieving carbon neutrality.

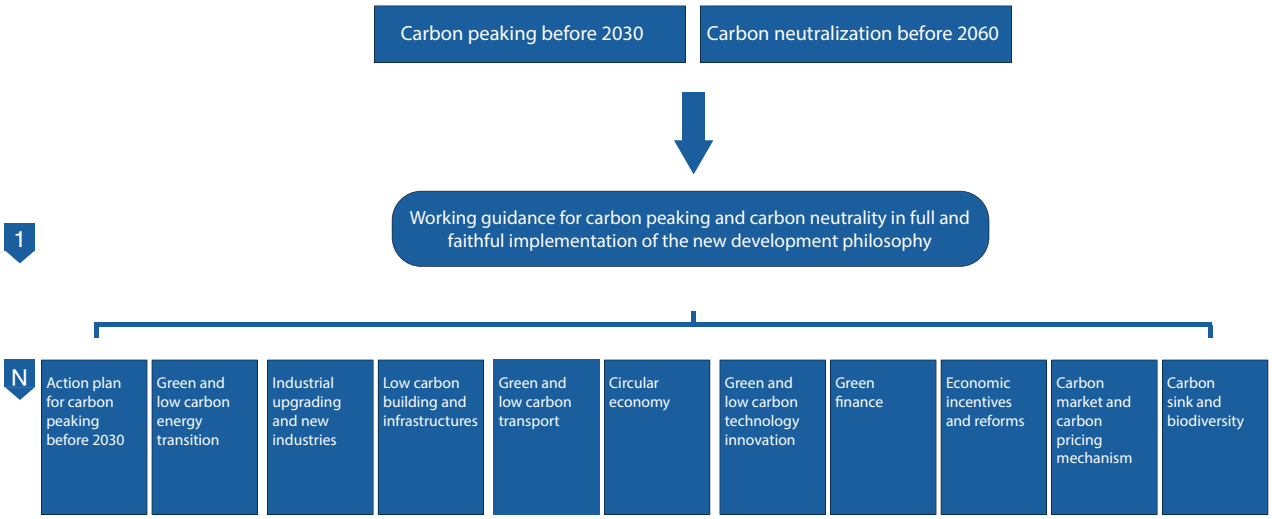



Source: Authors, based on Chinese government plans.

Following President Xi's pledges on carbon peaking and carbon neutrality, Chinese governments at different levels have been moving swiftly to roll out various plans and measures. The most significant progress made toward putting into place mechanisms for implementing these pledges is the establishment of the "1+N" policy framework. Here, "1" refers to the document "Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy," which was published on October 24, 2021 (State Council 2021a). It provides overall guidance on long-term targets, main instruments, and key actions for achieving the dual carbon goals. The "N" stands for the detailed action plans for each sector, including energy, industry, building and transport, and supportive plans in areas such as technology innovation, financial incentives and pricing mechanisms (NSCS 2021), as shown in Figure 4. The first "N," the "Action Plan for Carbon Dioxide Peaking Before 2030," was released on October 26, 2021 (State Council 2021b), and many others are still underway. Behind each of these plans, every central government department, along with its vertical counterparts at the provincial and municipal levels, has a specific role to play.

The pledge we see today on carbon peaking and carbon neutrality is a long-term decision supported by a solid planning system based on past progress. It is not an impulsive decision made under short-term pressure. The pace at which climate actions are taken could potentially change. However, it would be very difficult to step back from this well-established system, or from China's commitment to the international community and its own strategic choices for a green economic transition (Gao 2021; Xinhua 2022a).

**Figure 4.** 1+ N policy framework for carbon peaking and carbon neutrality.




Source: Authors, based on Chinese government announcements.

Based on China's NDC update in 2021, China has thus far been on track to achieve its medium-term climate targets. By 2019, China had slashed its carbon intensity by 48.1% compared with 2005 levels and increased the share of non-fossil fuel energy sources in its energy mix to 15.3% (Government of China 2021). China's CO2 emissions growth has slowed significantly over the past decade, and experts generally believe the country will be able to achieve peak carbon emissions by 2030 (WRI et al. 2021; Carbon Brief 2021).

## Will China's new balancing strategy endanger its climate goals?

**Although China has ambitious policy targets and a holistic governance system, there are concerns that a stronger emphasis on energy security and domestic supply could impact the speed of the country's transition away from coal**

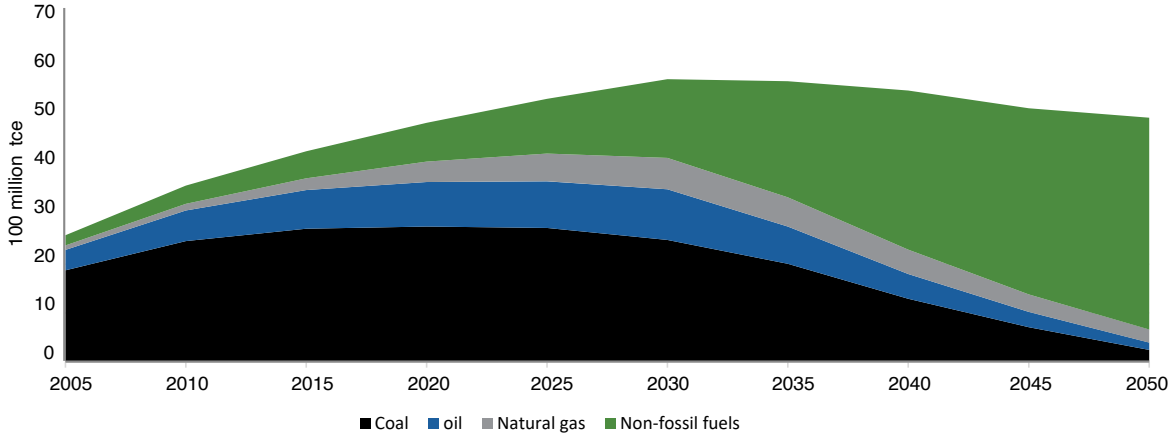
Given the fact that coal accounts for more than half of China's energy consumption, and nearly all of this is supplied from domestic sources, coal's role in China's energy mix is predominantly determined by domestic policy. Although China has ambitious policy targets and a holistic governance system, there are concerns that a stronger emphasis on energy security and domestic supply could impact the speed of the country's transition away from coal.

Below, we illustrate what reaching carbon neutrality before 2060 would entail, based on an influential scenario led by Tsinghua University (He 2020). We then explore how a boost in China's consumption of coal or in the number of new coal-fired plants would interact with the country's pursuit of its dual carbon targets.

Under Tsinghua University's carbon neutrality scenario, the share of coal in total energy consumption would need to decline from 57% in 2020 to 45% by 2030 (He 2020). The share of natural gas would increase from approximately 9% to 13% over this period and then start a slow decline.[1] Figure 5 shows that reaching the current NDC target of 25% non-fossil fuel sources by 2030 appears to be in line with China's goal of achieving carbon neutrality by 2060 (He 2020).

[1] Given its lower carbon content, natural gas can help mitigate emissions if it replaces coal. China's national oil companies currently have ambitious expansion plans for natural gas production (Downs 2021).

**Figure 5.** Primary energy consumption, by source, in China under a 1.5 degree Celsius (°C)-compatible net-zero emissions scenario.




Note: tce = tonnes of coal equivalent.

Source: He (2020).

However, beyond 2030, the share of non-fossil energy in China's primary energy consumption would need to increase more rapidly. Based on Tsinghua University's scenario work, more than 85% of the total energy mix would need to be generated by renewable and nuclear energy by 2050 (Myllyvirta 2020). Coal in the power sector would be effectively phased out, and electrification would enable the replacement of a large share of the coal and oil currently consumed by industry, transport and heating.[2]

The fourteenth FYP (2021-2025) climate targets include a 20% share of non-fossil energy and an 18% carbon intensity reduction between 2020 and 2025. The annual GDP growth targets have not yet been announced for the entire period, but the government's target for 2021 was 6%. Based on an estimate by Myllyvirta (2021), an average GDP of 6% over the current FYP period would cause China's coal consumption to increase by up to 0.9% per year, and its CO2 emissions could increase by up to 1.7% per year. For comparison, based on Enerdata estimates, China's average CO2 emissions growth rate for the period of 2016 to 2020 was 1.3% (Enerdata 2020).

While detailed quantitative targets for coal under the fourteenth FYP have not yet been announced, President Xi has stated that China will "strictly control coal-fired power generation projects and limit the increase in coal consumption" over this period (Carbon Brief 2021; Xinhua 2021). China will also reduce its coal consumption over the next five-year period. In addition, in early 2021, the China Coal Industry Association announced it would cap the annual coal output to approximately 4.1 billion metric tonnes and limit total coal use to 4.2 billion tonnes by 2025 (China Coal Industry Association 2021). This would translate into an annual growth rate of 1%.

[2] Clean energy installation rates would need to double between 2020 and 2050 compared with the installation rates over the past five years (Myllyvirta 2020). In addition to power generation capacity additions, increasing the share of clean energy will also require scaled up storage and transmission capacity (Liu et al. 2021).

**Another potential source of concern is the new regulations released by the government at the end of 2021, which gave local governments the flexibility to manage their energy intensity and carbon intensity targets**

Observers have also been worried about the continued growth in coal demand and generation capacity. In 2020 alone, China saw a net increase of 29.8 GW in its coal power capacity. Additionally, the country is reportedly planning to build 200 new coal-fired power plants in the coming years. These plants would need to be retrofitted with carbon capture and storage (CCS) to make them compatible with carbon neutrality (Liu et al. 2021) and to prevent them from becoming stranded assets. With the option of CCS currently appearing costly, a surge in new coal-fired capacity in the near term could arguably endanger the achievement of China's 2030 peak target.

Another potential source of concern is the new regulations released by the government at the end of 2021, which gave local governments the flexibility to manage their energy intensity and carbon intensity targets. These include the removal of caps on energy consumption for provinces that have achieved their set energy intensity targets (NDRC 2021b). In addition, the use of coal as feedstock will no longer be considered energy consumption when assessing the achievement of energy and carbon intensity targets (Ma 2021). This change in accounting and monitoring methods could lead to an increase in coal use. Although the use of coal as feedstock might not result in increased emissions, the energy required to convert coal to chemicals, along with various upstream activities, including the production and transportation of coal to chemical plants, could increase overall CO2 emissions.

**Any possible negative impact on the speed of scaling up cleaner energy sources caused by potentially higher-than-expected expansions in coal power capacity and generation remains to be seen**

In the short term, stabilizing the supply and cost of energy could also support China's clean tech industries. In 2021, power shortages faced by the country's polysilicon industries drove a surge in global solar panel prices and led to a slowdown in domestic installations (Copley 2021; Shaw 2021). However, any possible negative impact on the speed of scaling up cleaner energy sources caused by potentially higher-than-expected expansions in coal power capacity and generation remains to be seen.[3]

## Balancing China's energy security with climate goals — A role for Saudi Arabia

China's energy security also has a significant external dimension related to oil, its second most important source of energy. Below, we first examine the role of oil in China's energy mix and the country's crude oil import needs under carbon neutrality pathways. We then highlight the role that China's main oil trading partner, Saudi Arabia, could play in supporting both China's energy security and its climate targets.

[3] A further major potential challenge China could face in achieving its climate targets relates to its growing energy consumption, which to date has cancelled out the significant advances it has made in scaling up clean energy. Under the Tsinghua University-led carbon neutrality scenarios, China's total energy demand would peak between 2030-2035. Continued improvements both in energy efficiency and intensity will be crucial to curb demand growth. Part of this will depend on whether China succeeds in shifting its industrial production away from heavy industries (IEA 2021). This shift is part of the government's broader aim to transition away from energy-intensive industries and to higher-value-added sectors and services (IEA 2021). As such, an emphasis on domestic energy and economic security does not conflict with these structural transformation goals. The longer-term success of China's carbon neutrality ambitions will also depend on a number of other factors, including its ability to achieve industrial transformation, leverage sufficient investments for the energy transition, ensure just workforce transitions, deploy negative emissions technologies at large scale, and maximize electrification in the transport, industry and heating sectors. The IEA estimates that the scale of the investments required would be "well within [China's] financial means" (IEA 2022, 14).

China's recent energy crunch has mainly focused on the coal and power sectors. Oil does not compete with coal in the country's power sector as it is primarily used in the transportation sector (Liu et al. 2021). Meanwhile, oil is the second-largest source of China's CO2 emissions, so its share in the energy mix is therefore expected to decline in the long term. Transitioning China's massive vehicle fleet to electric and other low-emission vehicles is expected to take time (Climate Action Tracker 2021). Even under the carbon-neutrality pathways developed by Tsinghua University, China's oil consumption is not expected to decrease significantly over the next decade, with a faster decline beginning only in the late 2030s (He 2020).

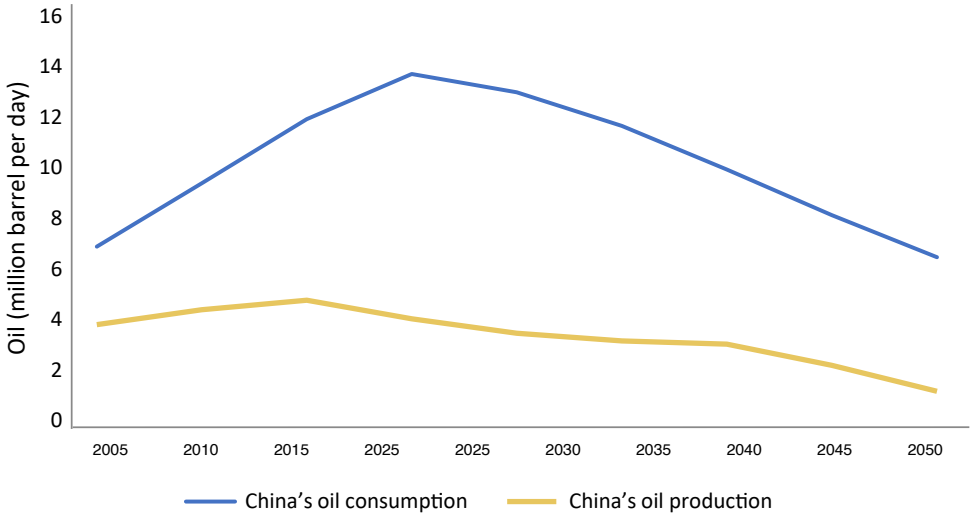
**China's oil consumption is not expected to decrease significantly over the next decade, with a faster decline beginning only in the late 2030s**

Saudi Arabia is China's leading oil trading partner. Saudi Arabia's ability to help stabilize global oil prices could be one way to contribute to China's economic stability. Saudi Arabia also shares China's emphasis on energy security and the need to ensure economic development while pursuing the goals of the Paris Agreement. Moreover, Saudi Arabia has recently stressed the need to address these priorities "in a holistic manner without compromising one for the sake of another" (Al Saud 2021).

The most direct way that Saudi Arabia can support China's energy security is in supporting China's oil import needs, both in the medium and long term. There is a sizable gap between Chinese oil production (3.66 million barrels per day [MMb/d] in 2020) and its domestic consumption (14.23 MMb/d in 2020, based on BP [2021]). Faced with declining production, Chinese national oil companies have embarked on a shift "from 'oil and gas' to 'gas and oil' companies" (Downs 2021). In the medium term, and possibly beyond, China is expected to continue importing a large share of its domestic oil demand. As illustrated in Figure 6, under the "well below 2°C" scenario developed by BP, there will be a gap of 5.30-9.69 MMb/d between China's domestic production and consumption. This would need to be filled by imports from the international market between 2025 and 2050.

**In the medium term, and possibly beyond, China is expected to continue importing a large share of its domestic oil demand**

**Figure 6**. China's projected crude oil production and imports under a <2°C scenario.




Source: Authors, based on BP (2020).

**Both countries could strengthen their engagement in joint projects and experiment with new financing models so as to reduce the financing barriers for the large-scale deployment of CCUS**

Focusing on oil imports with the lowest carbon intensity is an effective way for China to reduce its emissions. Saudi Arabia ranks among China's top oil suppliers. Apart from its strong export ties with China, it also has the lowest carbon intensity and second lowest flaring intensity in crude oil production among the world's top-20 oil producers (Luomi, Yilmaz, and AlShehri 2021). In the paper "Pathway and Measures to Cap China's Oil Consumption," the Energy Research Institute of the NDRC analyzed China's future oil demand and the policy instruments it could use to cap its use of oil. Under the ERI's 1.5°C scenario, oil consumption by China's transport sector is expected to rapidly decline, while oil demand from the petrochemicals sector will only show a slight decline from a peak of 3.8 MMb/d by 2035 to 3.6 MMb/d by 2050 (ERI 2019). Oil used in the petrochemicals sector has a much lower carbon intensity than coal. Therefore, strengthened cooperation between Saudi Arabia and China along the petrochemicals value chain through investment and trade would serve the interests of both parties (Chen 2021).

Another area where China and Saudi Arabia can cooperate to support the clean energy transition is carbon capture, utilization, and storage (CCUS). The Tsinghua scenario cited in this paper indicates that, to achieve carbon neutrality by 2060, China's power sector would need to reach net-zero emissions by 2050 (He 2020). After this date, the sector would need to become a source of negative emissions to offset the emissions still expected to be generated by hard-to-abate sectors, including cement, steel, aluminum and industrial chemicals. Realizing this target would require large-scale investment in and the deployment of negative emission technologies in the power sector. Currently, bioenergy with carbon capture and storage (BECCS) is considered the most likely technology candidate (Myllyvirta 2020). Other options include afforestation, ocean sinks, cement carbonation and direct air capture (Liu et al. 2021).

Saudi Arabia has its own target of achieving net-zero emissions by 2060, and its national oil company, Saudi Aramco, aims to reach net zero by 2050. Combined with the country's significant hydrocarbon resources, Saudi Arabia has an interest in seeing a significant scale-up of CCUS both domestically and worldwide. Both countries could strengthen their engagement in joint projects and experiment with new financing models so as to reduce the financing barriers for the large-scale deployment of CCUS.

Clean hydrogen production is another possible area of cooperation. According to press reports, Saudi Aramco has indicated that China's energy security is a priority for the company. Alongside positioning itself as a reliable source of oil, it is also exploring cooperation in the areas of blue hydrogen and ammonia, synthetic fuels and CCUS (Ratcliffe 2021; Xu and Tan 2021). Technology transfers and investments made today in these areas could secure a zero-carbon future, which would be a win-win for Saudi Arabia and China.

## Conclusion

China's climate change policies and their success are of great international importance. China is currently the single largest carbon emitter globally, and the high share of coal in China's energy mix is a major contributor to its CO2 emissions. Therefore, China's near-term energy policy decisions, and particularly how it tackles coal, will be a major determinant in whether the world achieves the long-term goals of the Paris Agreement, including limiting global warming to 1.5°C or well below 2°C above pre-industrial levels.

China has a significant amount of energy resources that can be drawn on to boost its energy security. Alongside its coal reserves, China is leading the world in renewable energy installations, backed by world-leading solar and wind industries. Moreover, expansions in the domestic gas supply will cover some of the expanding demand for fuel over the next decade. The use of these resources will be primarily guided by domestic energy and climate policy decisions. However, China's energy security relies on stable, international suppliers.

This Commentary examined whether China's growing emphasis on energy security and domestic production could signal a shift away from its current climate targets or complicate their achievement.

On the first question, it was concluded that this is highly unlikely. China's pledges are based on long-term policy and supported by a solid governance system and set plans, which build on a strong track record of meeting past targets or even overachieving them.

A more mixed picture emerges for the second question. China's energy security, as it relates to the country's climate change goals, has two main dimensions. The first relates to its domestic fuel production, which is currently dominated by coal. Managing the massive shift from a coal-dominated power system to a clean energy mix with a high penetration of renewables will thus be largely driven by domestic policy choices and domestic energy resources. A parallel challenge will be to ensure a just transition for the millions of coal sector workers in China.

Oil is expected to remain an integral part of China's energy mix through 2030 and beyond. Here, China's reliance on imports could be a potential vulnerability. However, this vulnerability could be mitigated by fostering partnerships with reliable trade partners that go beyond commodity trading to cooperation around clean technology and energy solutions.

It is too early to predict the exact impact of China's stronger emphasis on domestic economic and energy security on its energy transition. In an optimistic case, the current rebalancing could help China build a stronger foundation for its climate policies by ensuring that these policies and other key priorities are addressed holistically. In so doing, China would be able to reach, and possibly surpass, its carbon-reduction goals.

[4] In 2018, based on the Potsdam Institute's estimates, China accounted for 27.6% of total global greenhouse gas emissions (excluding land use change and forestry) (Climate Watch 2022).

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## About the Project

China's evolving Belt and Road Inititaive (BRI) was first conceived by the Chinese President Xi Jinping in 2013 and officially launched in March 2015. This initiative has become a focal point in the analysis of the impact of Chinese policies on the international community, particularly for the countries along the BRI routes. This research project assesses the implications of the BRI for Saudi Arabia. Specifically, it seeks to answer the following questions:

- Has the BRI ever been defined properly?
- What are its main elements, and why is it controversial at times?
- Will China's future energy demand be affected by the evolving BRI and, if so, in what way(s)?
- How should Saudi Arabia react to China's BRI—are there areas that can deepen the bilateral relationship and are there areas to avoid?

## About KAPSARC

The King Abdullah Petroleum Studies and Research Center (KAPSARC) is a non-profit global institution dedicated to independent research into energy economics, policy, technology and the environment, across all types of energy. KAPSARC's mandate is to advance the understanding of energy challenges and opportunities facing the world today and tomorrow, through unbiased, independent, and high-caliber research for the benefit of society. KAPSARC is located in Riyadh, Saudi Arabia.

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