

COVID-19 China Energy Impact Tracker

How is China's energy sector faring in the
economic recovery?

ANALYSIS

DECEMBER
2020

#2

Agora
Energiewende



Preface

The novel coronavirus (COVID-19) pandemic has precipitated the most severe global recession since the 1930s. On October 7, the International Monetary Fund projected that the global economy could contract by 4.4 percent year-over-year (YOY) in 2020. Though China witnessed the first ever economic contraction in more than four decades during the first quarter (Q1) of 2020, a subsequent speedy recovery is set to make China the only major economy to grow this year – a 2.0 percent increase relative to 2019, according to Agora's most recent estimate. This is a 0.3 percentage point lower than in the previous issue of this COVID-19 impact analysis.

The European Union's December 2019 pledge to achieve climate neutrality by 2050 briefly put Europe at the forefront of climate action. But in September 2020, China announces a carbon neutrality agenda for 2060. Since then, Japan, South Korea, and Canada have rolled out climate neutrality pledges for 2050. The USA is expected to follow soon after President-elect Joe Biden is inaugurated in January 2021.

China's ambitious plan will help move the climate agenda forward in developed and developing country blocs. In addition, China's unique status as the first hybrid superpower in the modern era means that Beijing can play an important bridging role between the blocs, especially when it comes to "common but differentiated responsibilities."

Agora Energiewende's COVID-19 China Energy Impact Tracker provides quarterly updates on how the COVID-19 pandemic has affected China's energy sector, from energy supply and consumption to carbon emissions and other key indicators. It also features a series of reports to better inform the international community and Chinese audiences alike about COVID-19's effects on the Chinese energy economy.

Dr. Patrick Graichen,
Executive Director
Agora Energiewende

Key findings at a glance:

- 1 Chinese President Xi Jinping's pledge on September 22 that the country would reach peak national carbon emissions before 2030 and achieve carbon neutrality before 2060 sent positive shock waves through the climate policy world.**
As both current and future Chinese administrations will need to take President Xi's climate pledge seriously, the announcement is expected to make a real difference in China's energy transition, especially in the long run.
- 2 Clean energy and climate targets set for the 14th Five Year Plan (FYP) period between 2021 and 2025 are expected to be more ambitious than would otherwise be the case in the absence of a carbon neutrality pledge.**
The Chinese energy policy community's recent revisions to draft 14th FYPs for energy and climate indicate that the impacts are likely to be not only positive but also substantial.
- 3 The short-lived COVID-induced climate benefits call for greener 14th FYPs for energy and climate.**
China's monthly carbon emissions have exceeded pre-crisis levels. Greener 14th FYPs for energy and climate are urgently needed to steer the Chinese energy economy in a more sustainable direction.

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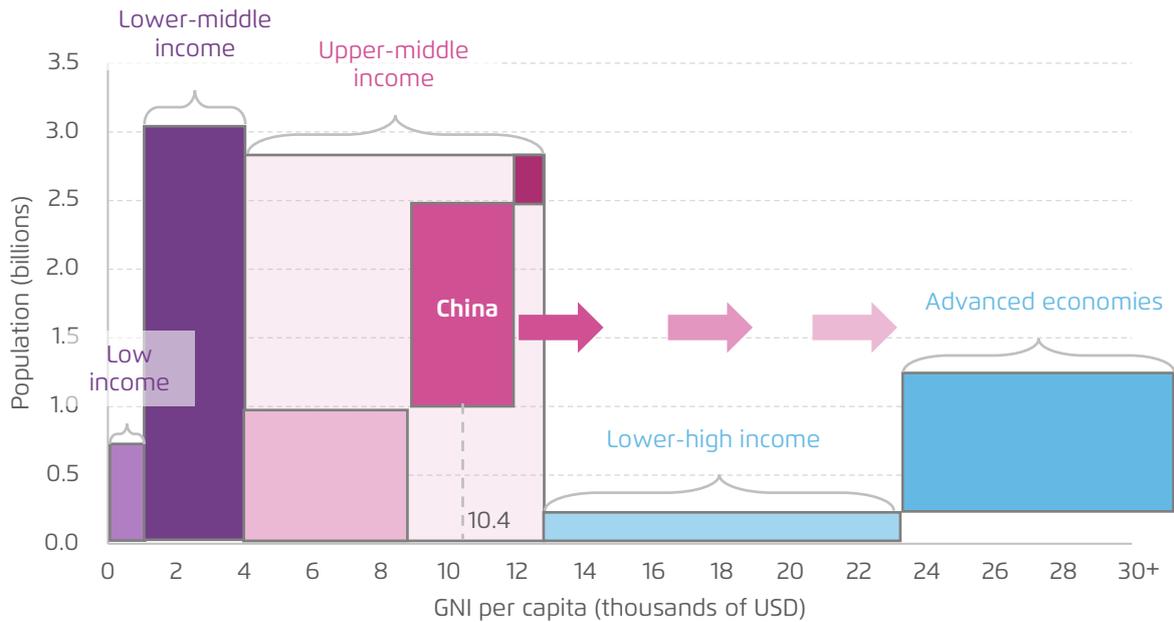


1 | 2060 climate neutrality

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New climate pledge

Figure 1 | China is the first hybrid superpower in the modern era

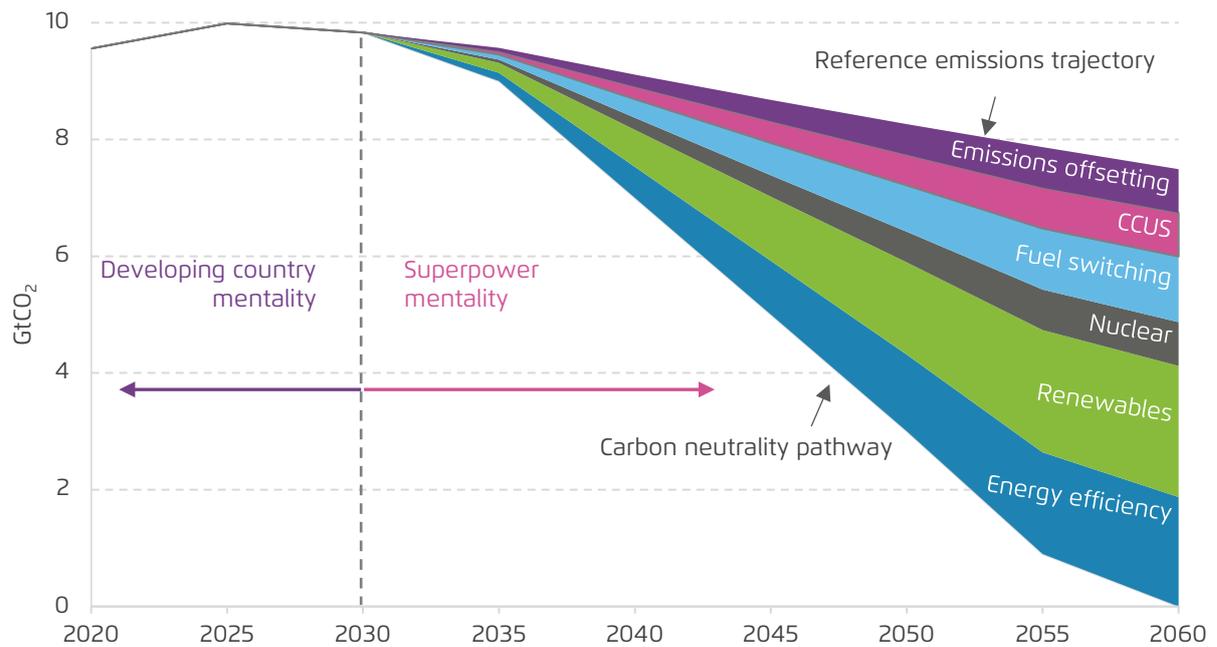


Source: Adapted from Benoit and Tu (2020)

- ▶ China’s phased climate pledge needs to be understood from its unique status as the first “hybrid superpower” in the modern era.
- ▶ China aims to reach peak national carbon emissions before 2030 and achieve carbon neutrality before 2060.
- ▶ The amount of carbon reduction required for China to fulfill its climate pledge is unprecedented, the equivalent of decarbonizing the entire French economy annually for 30 consecutive years.
- ▶ China’s economic recovery since Q1 2020 has been coal- and carbon- intensive. But China is planning a greener and cleaner 14th FYP, and the recent carbon neutrality pledge is likely to help.

New climate pledge (cont.)

Figure 2 | Wedge analysis of China's potential path to carbon neutrality



Source: illustrated by the authors

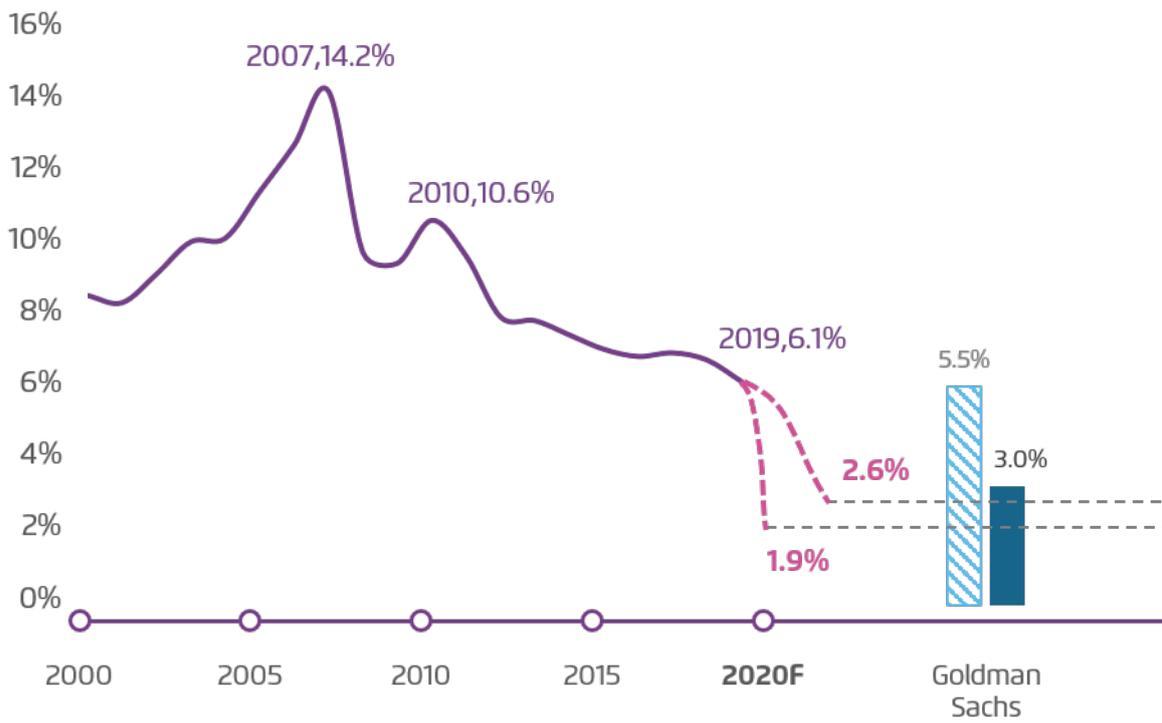
- ▶ The Chinese energy economy is full of contradictions. For instance, though the size of the Chinese economy is larger than the world's third, fourth, and fifth largest economies (i.e. Japan, Germany, and United Kingdom) combined, nearly one in three of the country's population lives in a household without access to clean cooking technologies.
- ▶ While China is not yet an advanced economy, it is debatable whether it is still a developing country. In fact, it would be more accurate to call China a

"hybrid superpower," a unique status between a developing and developed country.

- ▶ Because the current generation of decision-makers still has the mentality of growing up in a developing country, China has only agreed to ensure that carbon emissions peak before 2030. Beyond 2030, a rising superpower mentality among younger generation leadership is expected to make China's climate ambitions increasingly compatible with those of advanced economies.

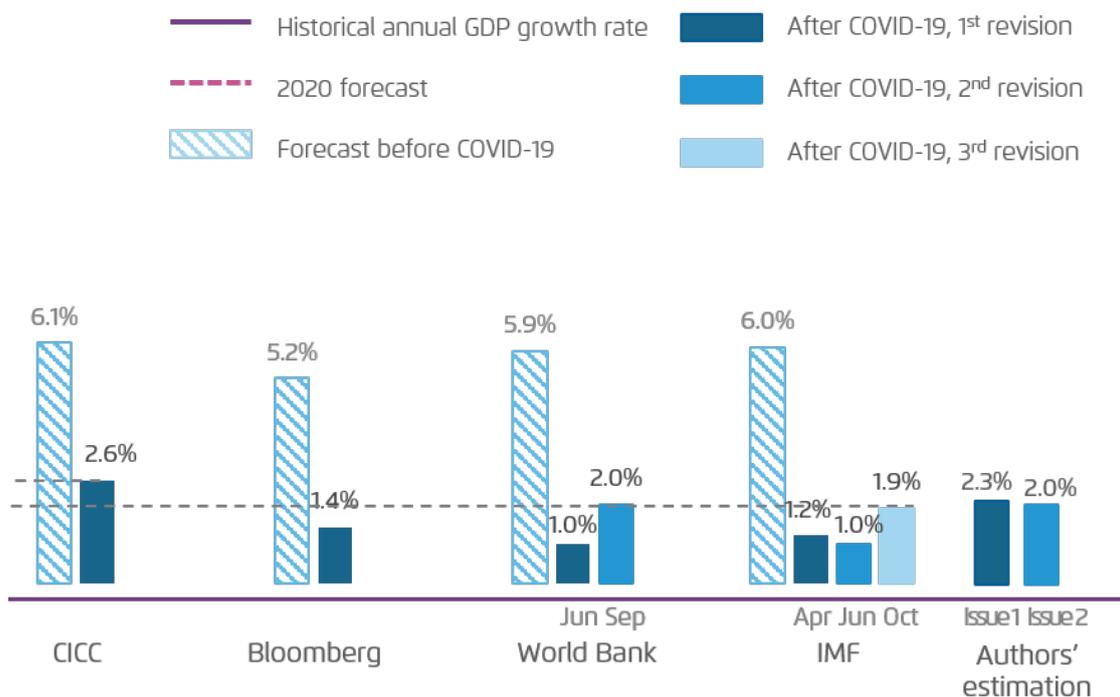
2020 Outlook: Economy

Figure 3 | China's projected economic growth in 2020



2020 Outlook: Economy (cont.)

Figure 3 | China's projected economic growth in 2020 (cont.)



Source: Tu (2020a), National Bureau of Statistics (NBS, 2000-2019), World Bank (2020), IMF (2020), et al.

- ▶ Forecasters significantly downgraded their growth projections for China's economic growth after the COVID-19 outbreak.
- ▶ After the release of China's economic data from Q2 and Q3, the International Monetary Fund (IMF) and the World Bank have since revised their forecasts of China's GDP growth in 2020 to 1.9 and 2.0 per cent, respectively.
- ▶ China is in the process of bringing its economy back to life.
- ▶ To adapt to an increasingly unstable and hostile outside world, the Chinese economy has decided to take a "dual circulation" approach. Starting from Q3 2020, Beijing plans to place more focus on the domestic market instead of international trade.

2020 Outlook: Carbon emissions

Figure 4 | Monthly carbon emissions from fossil-fuel combustion, 2019 vs. 2020



Source: Authors' estimation

Figure 5 | Quarterly carbon emissions from fossil fuel combustion, 2019 vs. 2020

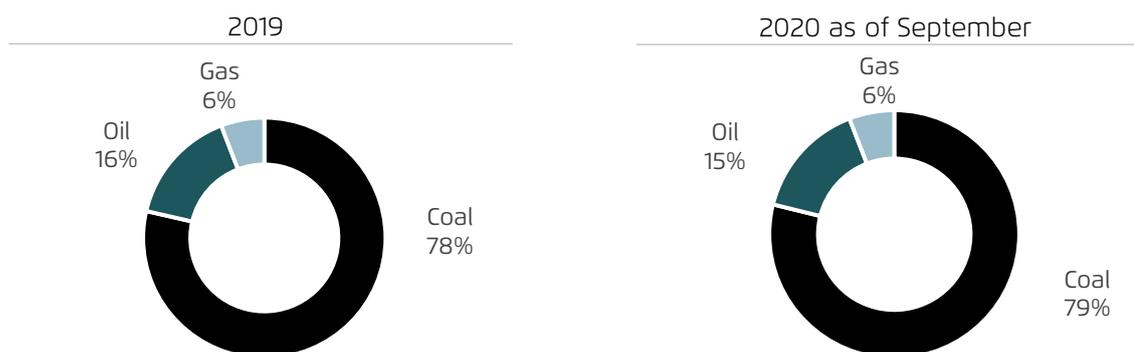


Source: Authors' estimation

- ▶ Since April 2020, China's monthly carbon emissions from fuel combustion have exceeded 2019 levels.
- ▶ The coal-intensive economic recovery in Q2 and Q3 has led to a strong uptick in national carbon emissions.
- ▶ In Q3, the growth rate of cumulative carbon emissions flipped positive, offsetting earlier reductions caused by the coronavirus crisis.
- ▶ China's carbon emissions rebounded along with its economic recovery, an indication that China's economic growth and carbon emissions are still tightly interlinked.
- ▶ With the current recovery trend, China's national carbon emissions are estimated to increase by about 2 per cent YOY in 2020.

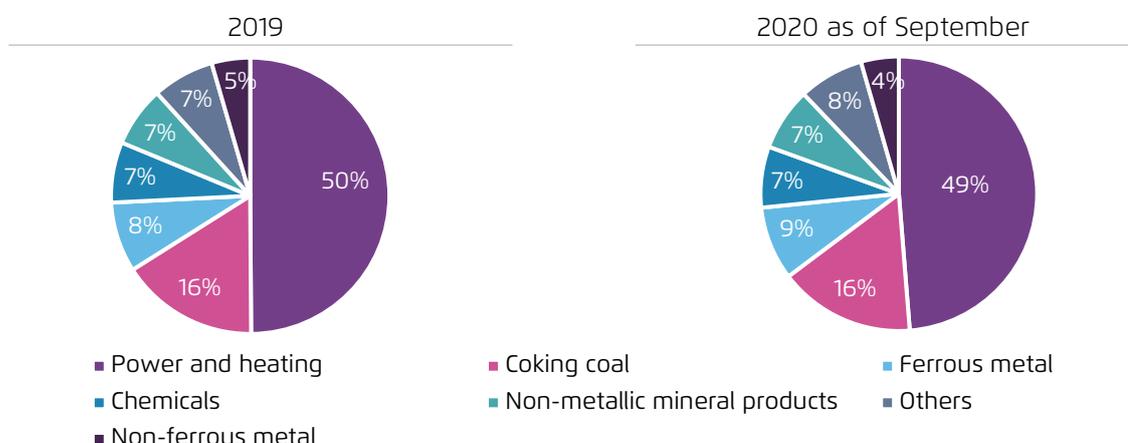
2020 Outlook: Carbon emissions

Figure 6 | Breakdown of energy-related carbon emissions by fuel type, 2019 vs. 2020



Source: Authors' estimation

Figure 7 | Breakdown of energy-related carbon emissions by sector, 2019 vs. 2020



Source: Authors' estimation

- ▶ Despite the fact that the COVID-19 pandemic drastically reduced carbon emissions during the nationwide quarantine in Q1, emissions have since rebounded faster than expected.
- ▶ The primary reason is that both the national energy structure and coal consumption patterns have not differed significantly from 2019 to 2020.
- ▶ Reduction in carbon emissions in Q1 was caused more by the coronavirus-induced economic slowdown than by structural economic change.
- ▶ The industry-led recovery made Q2 and Q3 more carbon-intensive than the same period last year.

2060 climate neutrality

Speaking via video link to the United Nations General Assembly on 22 September 2020, Chinese president Xi Jinping announced that China aims to reach peak national carbon emissions before 2030 and achieve carbon neutrality before 2060.

President Xi's climate neutrality pledge needs to be taken seriously by current and future Chinese administrations. It will require significant carbon reductions – the equivalent of decarbonizing the entire French economy annually for 30 consecutive years. In view of the enormity of the undertaking, Chinese decision-makers urgently need to address two critical challenges.

First, the pledge is not yet a legally binding international commitment yet. China has only marginally increased its climate commitment under the Paris Agreement: peak national carbon emissions before 2030 instead of around 2030. Beijing may thus be tempted not to take immediate climate action

to reach peak national carbon emissions within the 14th Five Year Plan (FYP) period (2021 and 2025). If so, the overall economic and social costs of achieving carbon neutrality in China might increase significantly. Translating the 2060 carbon neutrality goal into tangible climate actions in the short term is the stickiest issue Chinese leaders need to tackle.

China is the world's largest energy producer and consumer, the biggest power generator, and the leading importer of coal, oil, and natural gas. Achieving carbon neutrality before 2060 will require an unprecedented deployment of clean energy technologies at a massive scale, and some of the needed technology is not yet market-ready. Another related critical challenge is whether the Chinese government can create an appropriate regulatory and investment framework that encourages domestic innovations to make the Chinese economy more knowledge-oriented and protect intellectual property rights while maintaining the competitiveness of its manufacturing industry.

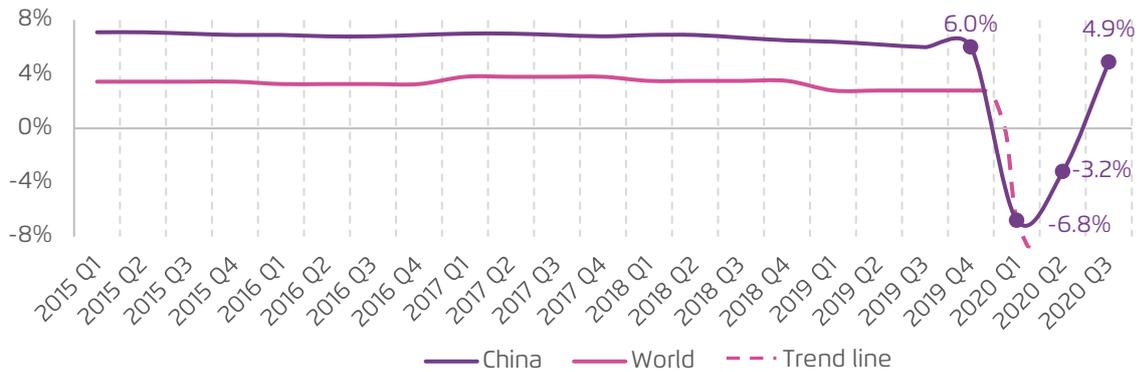


2 | Economy and the power sector

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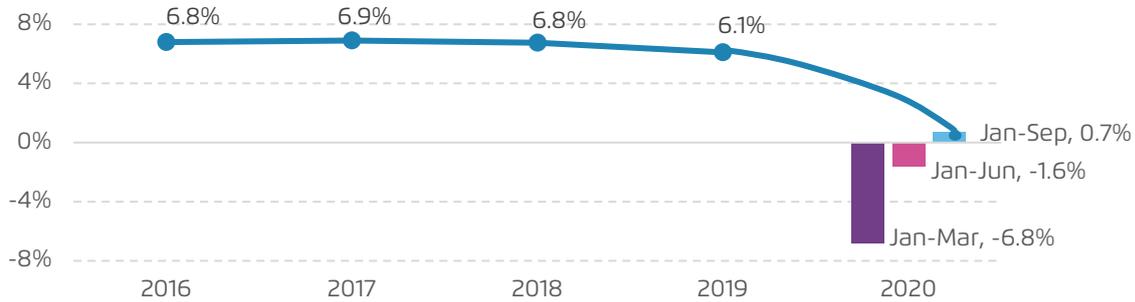
Q3 2020: Economy

Figure 8 | Quarterly YOY GDP growth rates, China vs. the world, 2015–2020



Source: NBS online database, IMF (2020)

Figure 9 | China’s cumulative GDP YOY growth rates, 2016–2020

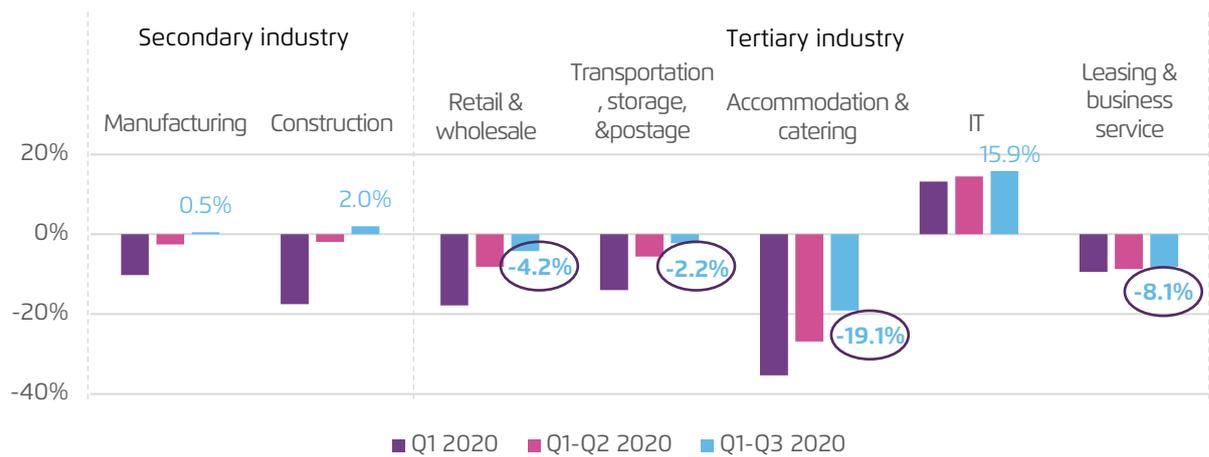


Source: NBS online database, NBS (2020)

- ▶ China’s GDP grew by 4.9 per cent YOY in Q3. China has mounted a V-shaped recovery with a steadily-growing second leg. It is expected to complete the rebound in the first half of 2021.
- ▶ Assuming that GDP growth rises to 5.4 per cent YOY in Q4, the size of the Chinese economy is expected to increase by 2.0 per cent YOY in 2020.
- ▶ With many parts of the world still suffering from the coronavirus outbreak, China faces risk of infection from contaminated imported goods, especially frozen food and packaging during the winter season.
- ▶ Q3 is an important turning point, with several key economic indicators flipping positive for the first time in 2020.
- ▶ The recovery has moved the cumulative GDP growth into positive territory, at 0.7 per cent YOY, despite the fact that the recovery in Q3 was lower than the market expected.
- ▶ Because the pandemic remains out of control in large parts of the world, Beijing has proposed a dual circulation economy to spur domestic demand and reduce dependence on overseas markets and technology in the long term.

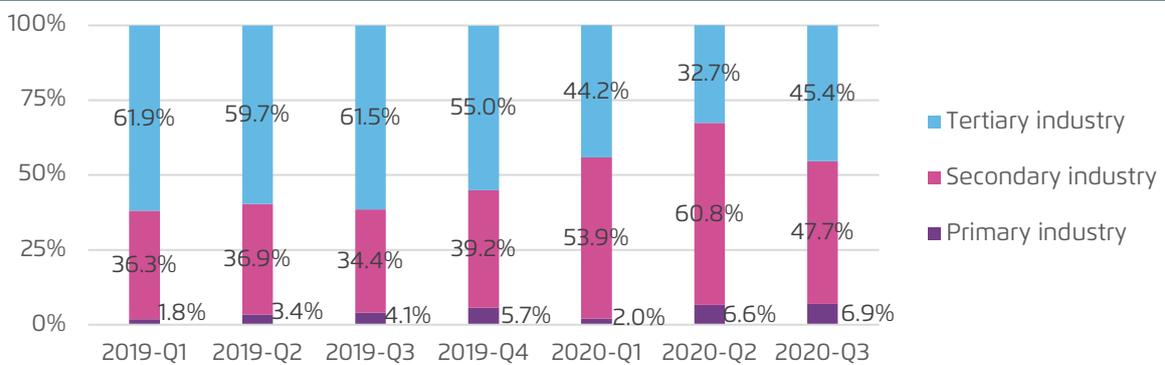
Q3 2020: Economy

Figure 10 | Breakdown of economic growth by sector



Source: NBS (2020)

Figure 11 | Contribution to the economy by industry



Source: NBS online database

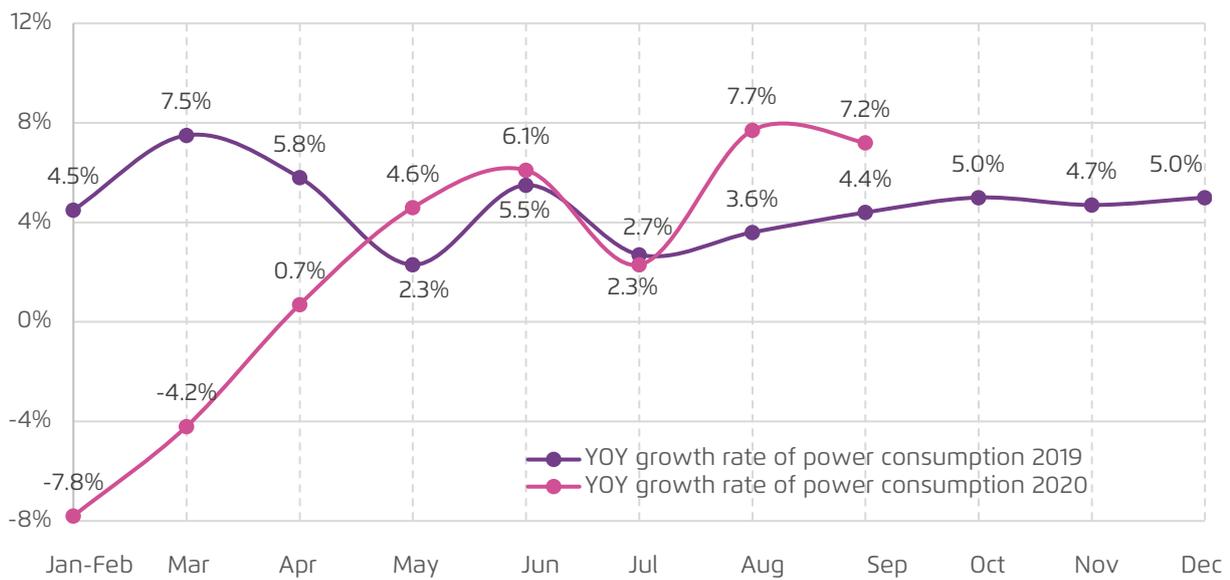
- ▶ Major sub-sectors of the secondary industry finally flipped into positive territory in Q3, while growth of four sub-sectors in the tertiary industry still remains negative.
- ▶ COVID-19's impact on the tertiary industry remains the most severe.
- ▶ The secondary industry has waded through the pandemic better than the

tertiary industry, though the rebound of Chinese industrial activity has been carbon-intensive.

- ▶ In Q3, the contribution of the tertiary industry returned to a level similar to Q1, which indicates that consumer confidence in China is recovering – along with the carbon intensity of the Chinese energy economy.

Q3 2020: Power sector – demand

Figure 12 | YOY growth of monthly power consumption, 2019 vs. 2020



Source: China Electricity Council (CEC, 2019 & 2020)

- ▶ Power consumption has been growing steadily YOY since April.
- ▶ Since May 2020, China's monthly power consumption has grown faster than the previous year except for July.
- ▶ In the first three quarters, Chinese cumulative power consumption grew by 1.3 per cent YOY.
- ▶ Assuming a 6.5 per cent YOY growth in Q4, China's national power consumption is expected to increase by around 2.6 per cent YOY in 2020.

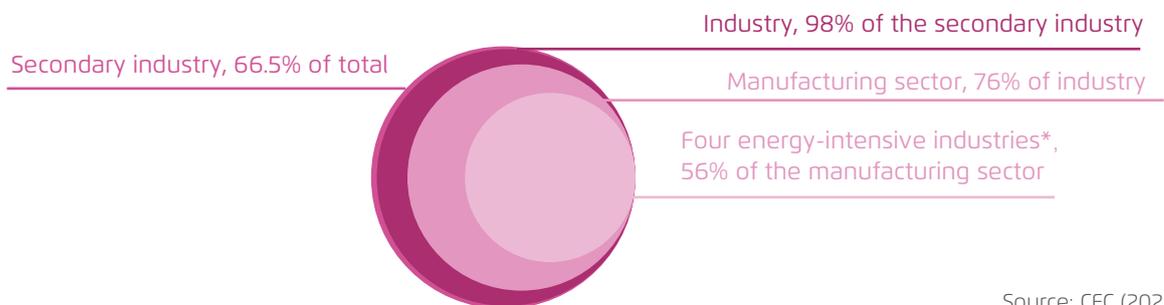
Q3 2020: Power sector – demand

Figure 13 | Breakdown of power consumption by industry



Source: CEC (2019 & 2020)

Figure 14 | Breakdown of power consumption by secondary industry as of September 2020



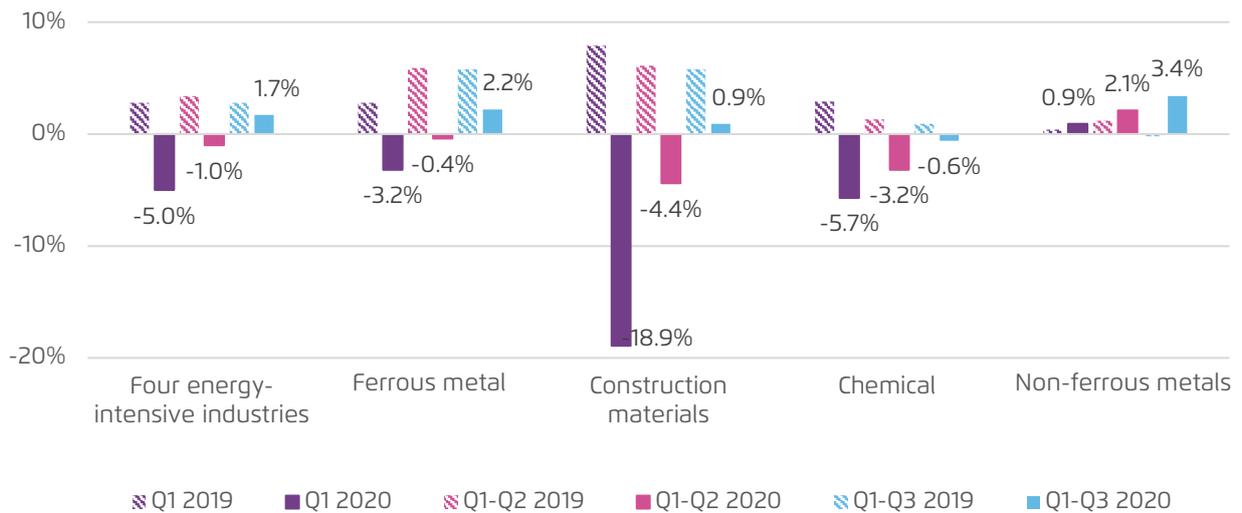
Source: CEC (2020)

* Four energy-intensive industries include ferrous metal, construction materials, chemicals and non-ferrous metals

- ▶ China's power consumption structure is becoming increasingly service-oriented.
- ▶ Despite the coronavirus-caused disruption, shares of both the service and the residential sector in the national power consumption mix have rebounded and are now above pre-pandemic levels. With YOY power demand growing by 26.5 per cent in the first three quarters, the IT industry is a key contributor to the power consumption growth of the tertiary industry.
- ▶ Working from home and virtual meetings are expected to remain common in the post-coronavirus world, with profound implications for transport and power consumption patterns.
- ▶ The secondary industry remains the largest power consumer. Its four energy-intensive sectors are key driving forces underlying China's ongoing economic recovery.

Q3 2020: Power sector - demand

Figure 15 | YOY growth of power consumption by key industrial sectors, 2019 vs. 2020

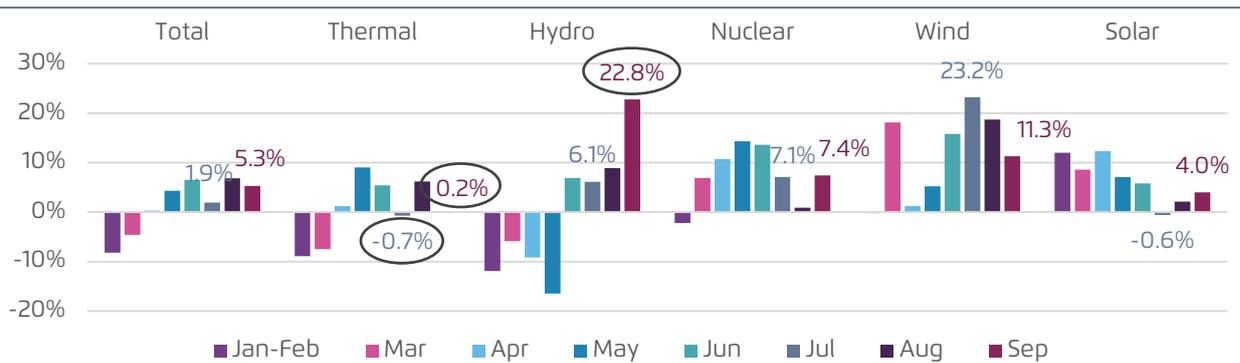


Source: CEC (2019 & 2020)

- ▶ YOY growth of cumulative power consumption by four key energy-intensive industries turned positive in Q3.
- ▶ Among the four energy-intensive industries, the chemical industry is so far the only sector with negative YOY cumulative power demand growth.
- ▶ Non-ferrous metals is one of the sectors least affected by the coronavirus.

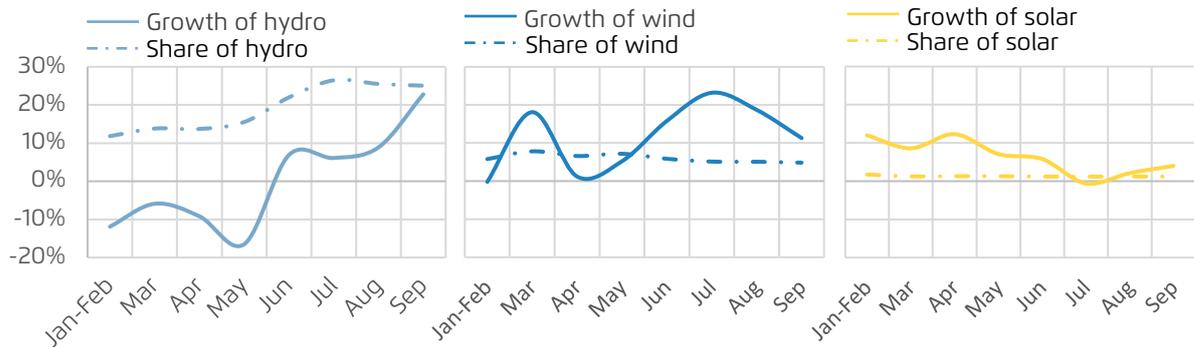
Q3 2020: Power sector – supply

Figure 16 | Breakdown of power generation by fuel type, 2020



Source: CEC (2020)

Figure 17 | YOY growth rate and share of renewable power generation, 2020



Source: CEC (2020)

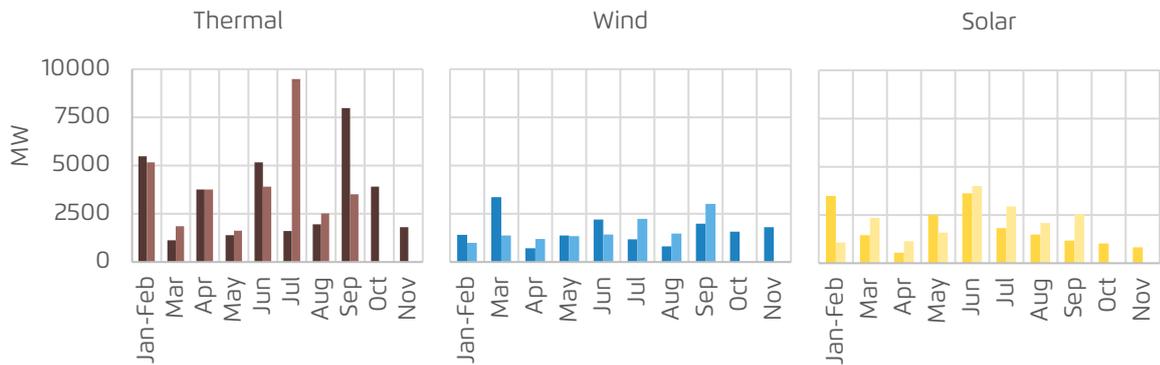
- ▶ Variable renewables, wind in particular, have performed better during the pandemic.
- ▶ Despite a sizable addition of coal-fired power capacity during the first half of 2020, the growth of thermal power generation was negative in July, indicating both weak demand and more competition among different generation types.
- ▶ Hydro generation increased sharply in September, which could be largely explained by preferential dispatch during the rainy season in order to make up for

lost production during the previous months.

- ▶ Growth of hydropower generation has a strong positive correlation with its share in the national generation mix.
- ▶ Despite the better-than-expected performance of both solar and wind, non-hydro renewables have not significantly increased their share in the national power mix. This can be explained largely by the relatively small share of solar and wind power supply within China's gigantic power system.

Q3 2020: Power sector – supply

Figure 18 | Thermal and renewable capacity addition by month, 2020



Source: CEC (2020)

Figure 19 | Thermal and renewable capacity addition by year, 2015–2020



Source: CEC (2015–2020)

- ▶ As of September 2020, additions to greenfield power capacity seem to be disrupted less by the pandemic than by power generation and demand.
- ▶ Coronavirus-induced supply chain disruptions, especially in overseas market, have had a negative impact on the supply of key components and equipment, delaying installation of some solar and wind projects until 2021.
- ▶ Though China is the world’s largest renewable market, researchers at Tsinghua University recently estimated that it must nearly double the amount of added annual solar and wind capacity compared with the 2016–2020 period to achieve carbon neutrality.
- ▶ Additions of thermal power capacity are growing faster than those of variable renewables.
- ▶ Starting in September 2020, incremental additions of thermal power capacity have exceeded those of both wind and solar by 11 per cent during the same period in 2019.

Economy and the power sector

In Q3 2020, the growth rates of China's cumulative GDP and national power demand finally flipped positive.

The 4.9 per cent YOY economic growth in Q3 was largely driven by a continued rebound in manufacturing and construction, together with a surge of foreign trade. The tertiary industry (i.e. services), where small- and medium-sized enterprises were hit the hardest, finally started to catch up in Q3.

Prior to the COVID-19 outbreak, with sustained efforts on economic restructuring, the Chinese economy had become more service-oriented. The share of the secondary industry was surpassed by that of services for the first time in 2012. The coronavirus-induced economic downturn changed the pattern of growth. The contribution made by services to economic growth shrank to 30.5 per cent in the first three quarters, a level last seen in the 1990s.

China's National Bureau of Statistics (NBS) reports that the service production index has growing constantly over the past few months. The contribution made by services to economic growth rose to 45.4 per cent in Q3, up from 32.7 per cent in Q2. Though rebounding at a slower pace than the secondary industry, the service sector is expected to pick up the pace. The Golden Week national holiday (early October) saw a surge in domestic tourism, which brought October's service production index up to 2019 levels. The normalization of the service-oriented economy structure has reduced the carbon intensity of the Chinese economy. In general, economic recovery in Q3 is less carbon-intensive than in Q2.

When it comes to the energy-intensive sectors, power consumption is always a revealing indicator. Due to increasingly high levels of electrification across the Chinese economy, monthly power

consumption has generally followed economic growth. A strong rebound was witnessed in August, with a YOY growth rate of 7.2 per cent, exceeding last year's record. Similarly, the power demand growth in the secondary industry also reached a record level this year. More than 40 per cent of power consumption by the secondary industry comes from four key energy-intensive sectors – ferrous metal, construction materials, chemicals, and non-ferrous metal industries. Save for the chemical industry, the power consumption growth in the other three energy-intensive industries was positive in September.

On the power supply side, generation is showing increasing growth. Of them, hydro and wind performed the best in Q3. While wind has enjoyed rapid growth since May, solar power encountered seasonal fluctuation in the summer, including the unprecedented floods in southern China. By contrast, hydro power benefitted from the exceptionally rainy season. A rapid YOY surge of 22.8 per cent in hydro power generation in September depressed thermal power output by five percentage points in the national power generation mix.

In China's coal-dominated power system, hydro is the most important source of clean power. Despite record wind power generation, its share in the national power mix still pales in comparison with that of coal power, and more thermal power capacity has been commissioned each month throughout the pandemic.

In sum, while the COVID-19 pandemic has created changes in the Chinese power sector, they have not produced the structural adjustments needed for a clean transformation of the power sector. As a result, concerted efforts should be made by the Chinese government to encourage investment in low-carbon technology.

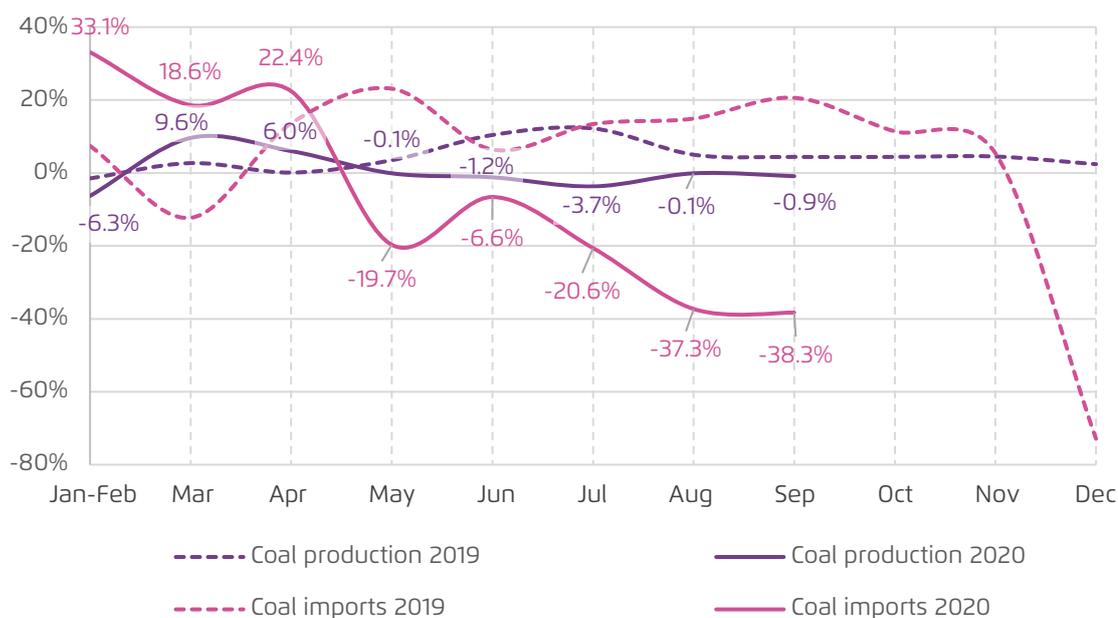


3 | Fossil fuel energy

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Q3 2020: Coal – supply

Figure 20 | Monthly YOY growth of coal production and imports, 2019 vs. 2020

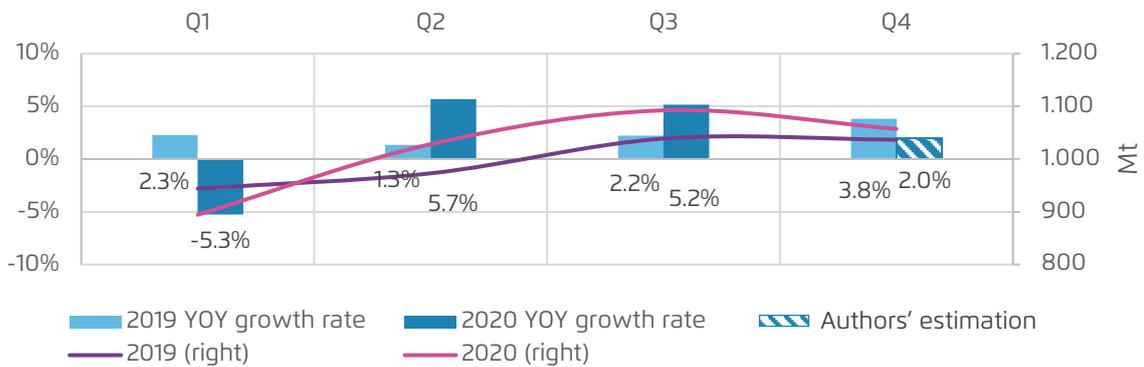


Source: NBS online database

- ▶ Coal imports plunged by 37.3 per cent YOY in August 2020, followed by a more pronounced dive in September and October. The major driving forces were as follows:
 - ▶ Restrictions imposed on coal imports since May have not been eased.
 - ▶ China's newly announced "dual circulation" approach tends to favor domestic supply.
 - ▶ Rising China-Australia trade tensions: China's coking coal imports from Australia slumped in October to 26 per cent of total imports, compared with 30 per cent in September and 78 per cent in March.

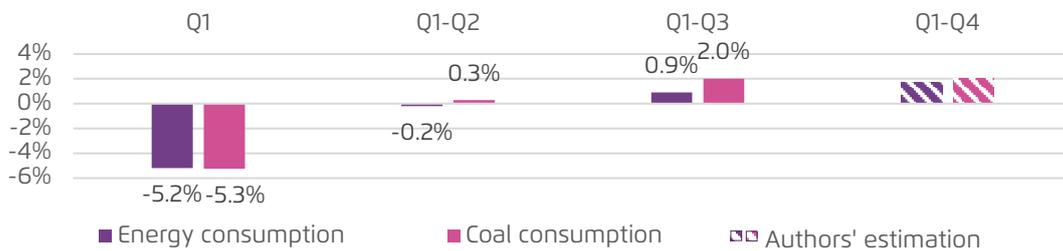
Q3 2020: Coal – demand

Figure 21 | Quarterly coal consumption, 2019 vs. 2020



Source: Authors' calculation and estimation based on data from NBS

Figure 22 | Cumulative energy and coal consumption in 2020

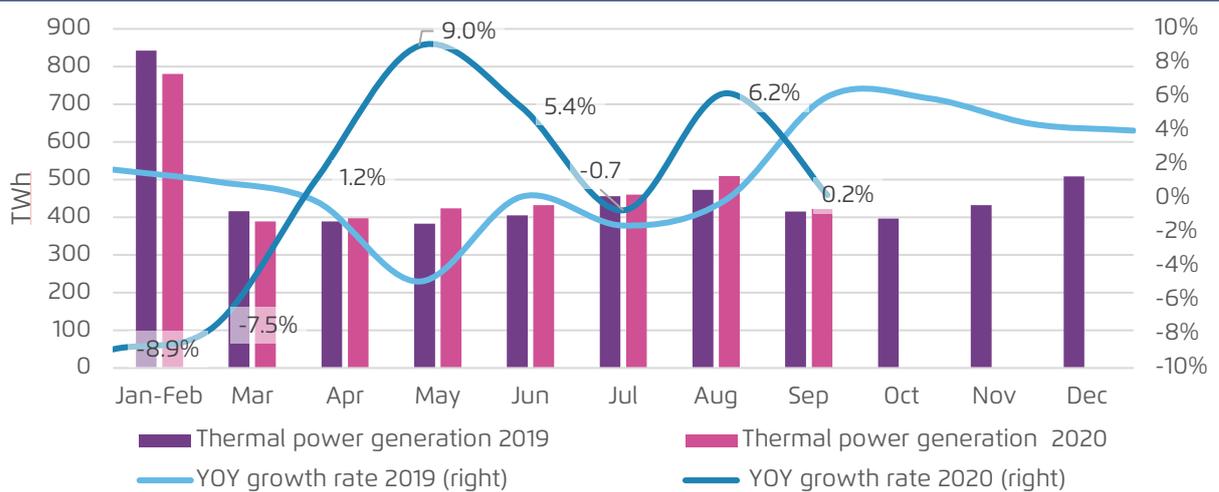


Source: Authors' calculation and estimation based on data from NBS

- ▶ Monthly coal consumption exceeded 2019 levels in Q2 and has continued to grow ever since.
- ▶ Cumulative coal consumption in 2020 flipped positive by the end of Q2.
- ▶ National coal consumption in the first nine months exceeded the levels of the same period last year.
- ▶ In the first three quarters of 2020, YOY growth rates of national coal demand are estimated to be -5.3, 5.7, and 5.2 per cent, respectively.
- ▶ Q2 has been the most carbon-intensive quarter by far, with a YOY growth rate of coal consumption more than four times that of 2019 levels.
- ▶ We estimate that national energy and coal consumption will see positive growth in 2020.
- ▶ To reverse the upward coal demand trajectory over the past several years, China must keep the YOY growth rate of national coal consumption in Q4 below -2 per cent, which seems impossible.
- ▶ Our projections come with the caveat that statistical reporting for coal will not undergo significant revision in the near future. Nevertheless, as suggested by the first issue of this series of trackers, we expect that NBS needs to substantially adjust China's historical coal statistics again.

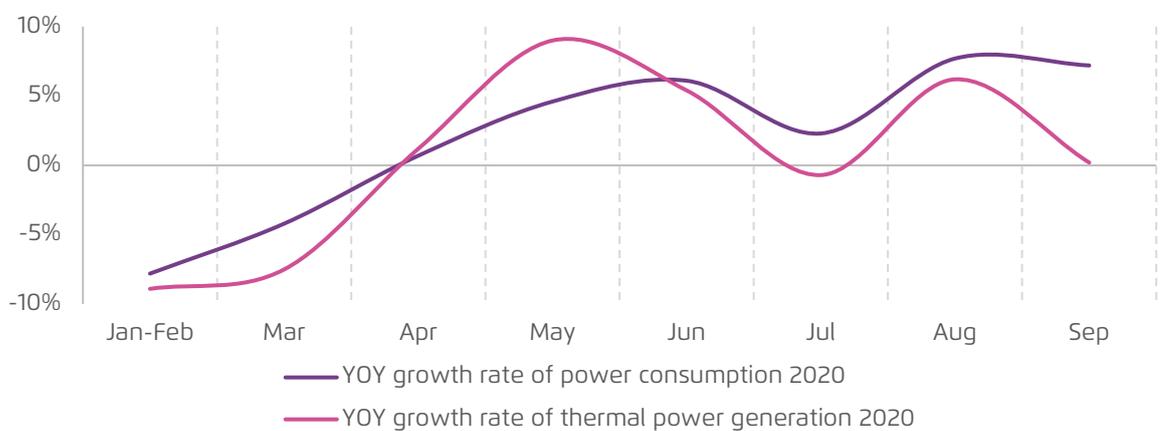
Q3 2020: Coal – demand

Figure 23 | Monthly thermal power generation, 2019 vs. 2020



Source: CEC (2019 & 2020)

Figure 24 | Monthly YOY growth rates of power consumption and thermal power generation, 2020



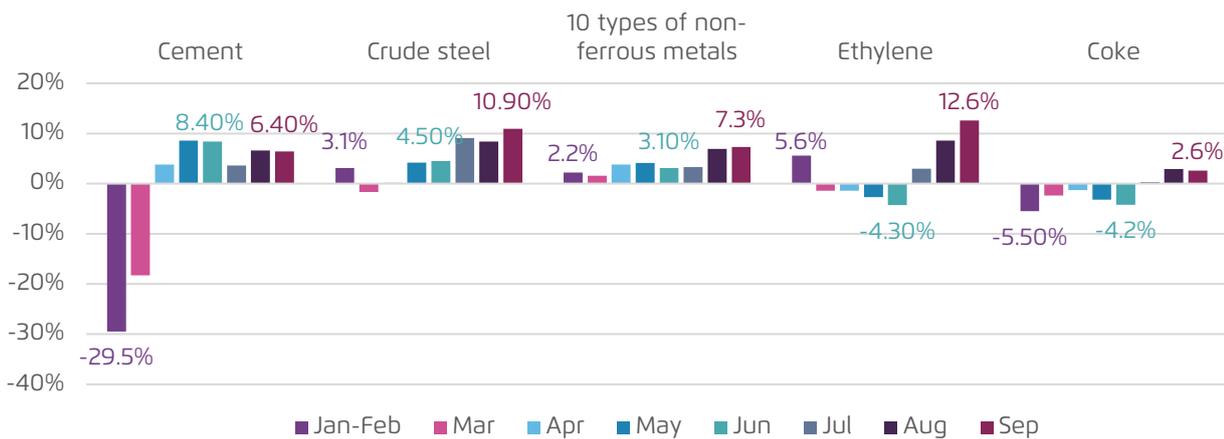
Source: CEC (2020)

- ▶ Since April, China's thermal power generation has exceeded 2019 levels for every month except September.
- ▶ Thermal power generation generally follows power demand. But the amplitude of thermal power generation is

wider than that of national power demand, possibly because more and more grid operators prefer the flexibility of coal-fired power plants so as to accommodate more variable renewables.

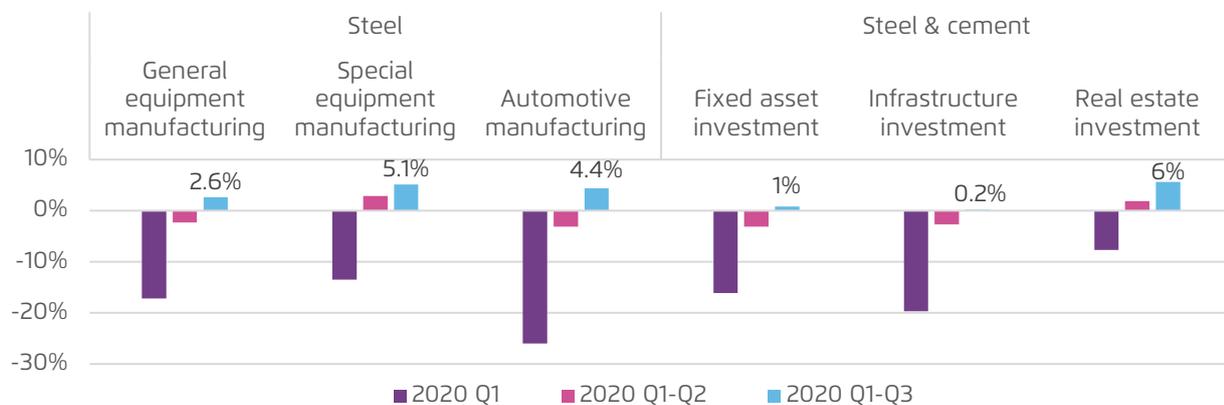
Q3 2020: Coal – demand

Figure 25 | YOY output growth of selected coal-intensive industrial products in 2020



Source: NBS online database

Figure 26 | Downstream demand-side recovery of steel and cement manufacturing in 2020

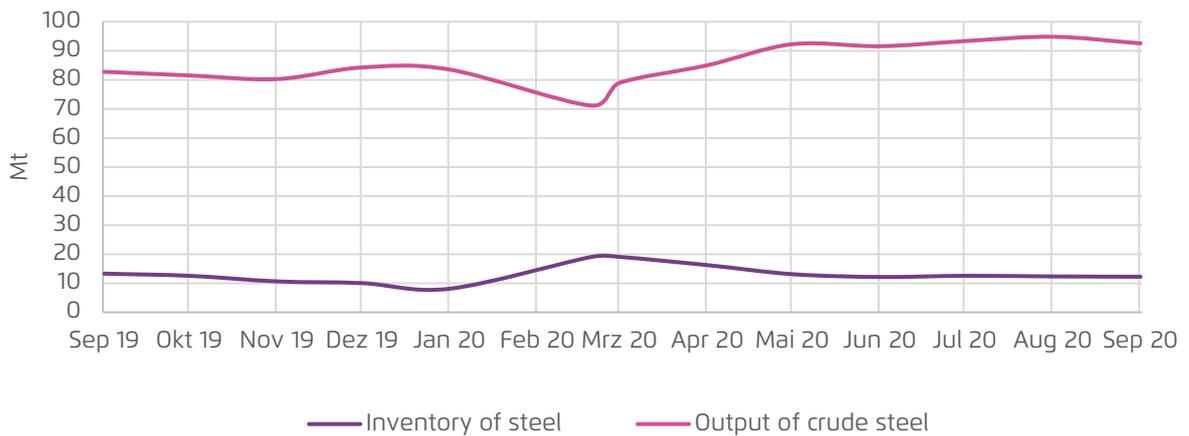


Source: NBS online database, NBS (2020)

- ▶ Monthly output growth rates of selected key coal-intensive industries all turned positive in Q3. Among them were the ethylene and coke manufacturing industries, which saw continued output contraction in the first half of 2020.
- ▶ As of September 2020, the growth rates of key downstream sectors of steel and cement manufacturing all turned positive.
- ▶ The reduction of coking coal output in the first seven months is inconsistent with the steel production trend. The continued decline of coking coal output could be the outcome of policy enforcement in key provinces as part of supply-side reform, which might contribute to another round of coal statistical under-reporting across China.

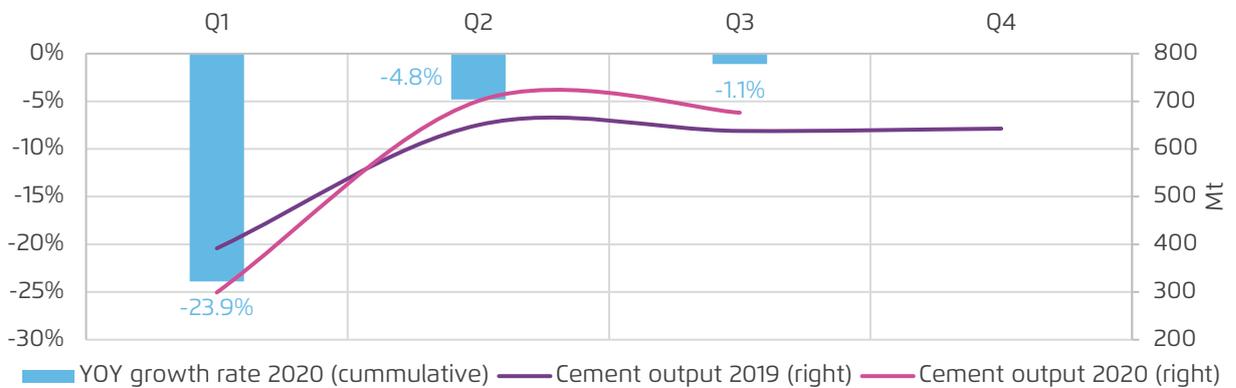
Q3 2020: Coal – demand

Figure 27 | Monthly output and inventory of crude steel



Source: National Development and Reform Commission (NDRC, 2019 & 2020)

Figure 28 | Quarterly output and YOY growth rate of cement, 2019 vs. 2020



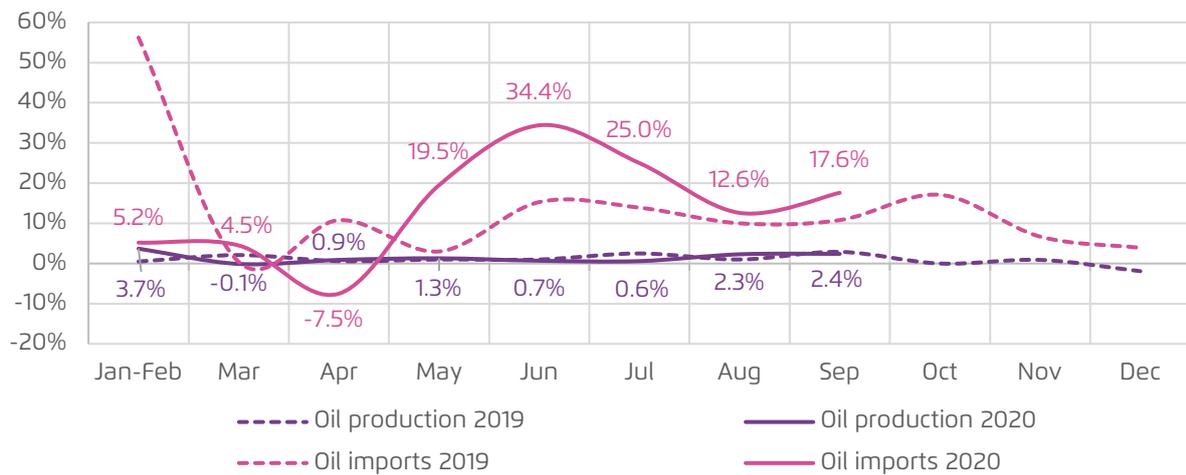
Source: NBS online database

- ▶ Steel inventories reached a record high in March due to weak demand during the nationwide lockdown.
- ▶ Since April, steel output has grown steadily and inventories have started to fall again, indicating a rebound in downstream demand.
- ▶ In the first three quarters, cumulative cement output was nevertheless lower than 2019 levels.
- ▶ The cement industry was hit hard by

- control measurements in Q1. Construction activities were interrupted again by unprecedented floods in the summer, reducing demand for cement.
- ▶ With the end of flooding season and the recovery of construction activities, the cement industry expects demand to grow in Q4.
- ▶ The annual cement production growth rate is expected to turn positive by the end of 2020.

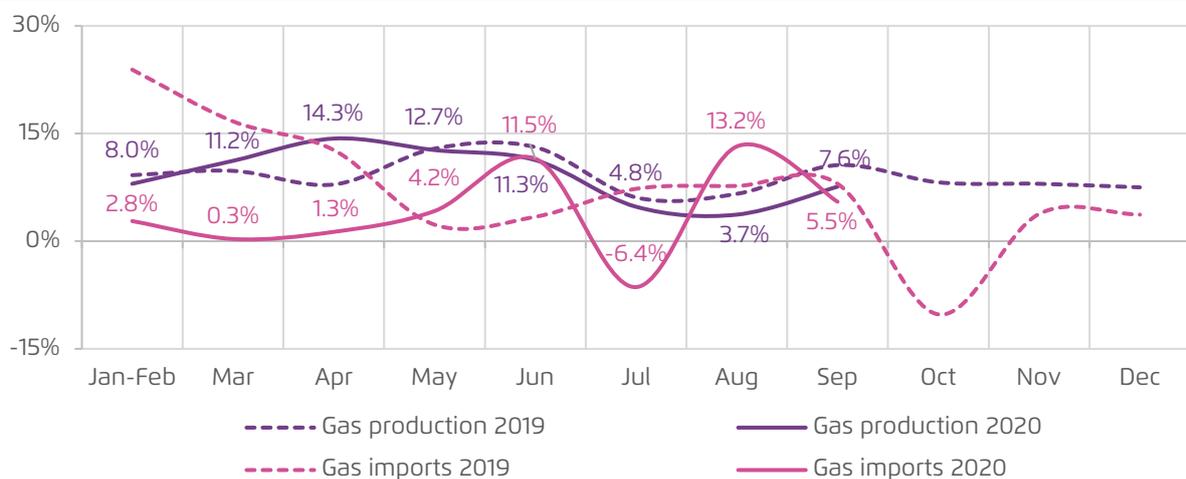
Q3 2020: Oil and natural gas – supply

Figure 29 | Monthly YOY growth of oil production and imports, 2019 vs. 2020



Source: NBS online database

Figure 30 | Monthly YOY growth of natural gas production and imports, 2019 vs. 2020

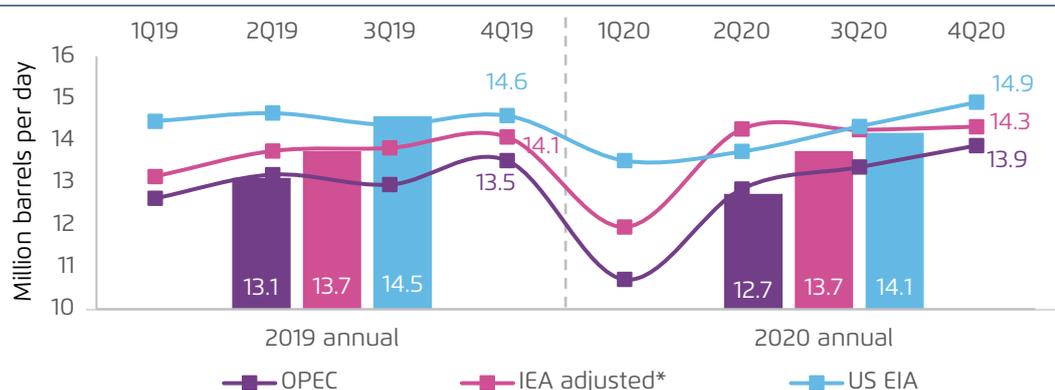


Source: NBS online database

- ▶ Oil imports started to fall from their record high in June.
- ▶ Monthly YOY growth rate of oil imports in Q3 is still higher than similar level in 2019.
- ▶ With the heating season approaching, the surge in natural gas demand is expected to be met with growth in domestic production as well as overseas imports.

Q3 2020: Oil and natural gas – demand

Figure 31 | Quarterly oil demand in 2019 and 2020



Source: OPEC (2020), IEA (2020), and U.S. EIA (2020)

*Data was adjusted by authors based on IEA's Oil Market Report – September 2020

Figure 32 | Estimated apparent natural gas consumption in 2019 and 2020



Source: NDRC (2019 & 2020), authors' calculations based on NDRC data

- ▶ Oil consumption in Q3 rebounded, reaching 2019 levels.
- ▶ Estimations by OPEC, IEA, and U.S. EIA all expect China's oil consumption in Q4 to exceed 2019 levels.
- ▶ Estimates for annual oil consumption in 2020 ranges from -4 per cent YOY (OPEC) to slightly higher than 2019 (IEA). The wide range indicates the importance of further improving the transparency of China's oil stockpiling reporting.
- ▶ Natural gas consumption has steadily increased, and is expected to be the fossil fuel with the fastest annual growth in 2020.
- ▶ China Natural Gas High Quality Development Report (2020) projects national natural gas consumption in 2020 to expand to 320 billion cubic meters (bcm).

Fossil fuel energy

Against the current backdrop of difficult international relations and in particular the growing Sino-US trade tensions, the Chinese energy economy and its vast fossil fuel industry are facing an increasingly uncertain future.

In the supply segment, cumulative national coal output during the first three quarters has already returned to 2019 levels. By comparison, amid rising concerns for energy security, Chinese authorities have increasingly favored domestic oil and natural gas production, leading to a 1.7 and 8.7 per cent YOY increase of oil and natural gas output, respectively.

In the energy trade segment, monthly coal imports have been declining as China has favored domestic production, leading to a 4.4 per cent reduction of cumulative coal imports during the first three quarters. By contrast, China, attracted by depressed international oil prices, has imported 420 Mt of crude oil during the same period, the equivalent of 17.6 per cent YOY growth. Meanwhile, cumulative natural gas imports reached 73.7 Mt, 3.7 per cent higher than in 2019.

China's "dual circulation" strategy, announced in May, is meant to hedge against deglobalization and

the worldwide economic slowdown. In general, China aims to find a balance between the international market and its domestic economy in order to strengthen its resilience against external risks. As for the energy sector, the "dual circulation" strategy means more emphasis on energy self-reliance and a pick-and-choose approach when it comes to selecting trading partners.

In the demand segment, continuous growth in coal consumption accompanied the economic uptick in Q3. We estimate that coal demand growth in Q3 slowed relative to that of Q2. Over the first three quarters, cumulative national coal consumption was estimated to be higher than in 2019, while oil consumption is still recovering. NBS might report either a YOY demand growth or contraction for coal and oil in 2020, the actual numbers are rather uncertain to tell, and will largely depend on China's real oil stockpiling levels and efforts made by NBS to fix inconsistencies in statistical reporting for coal. Otherwise, the discrepancy between supply- and demand-based estimations of China's national coal consumption in recent years cannot be easily resolved. By contrast, national natural gas consumption in 2020 is estimated to grow by around 4 per cent YOY.



4 | Concluding remarks

Concluding remarks

The rapid spread of the coronavirus could make 2020 a pivotal year in history. The effects of the pandemic extend far beyond public health and economic development. It has sent shock waves around the world, roiling national governments, international relations, social and culture coherence, and energy and climate policy.

For China, 2020 is also particularly important as the last year that Beijing can take stock of its 13th FYP targets. Furthermore, 2020 will be the baseline year for setting new targets for the 14th FYP.

China's prompt and relatively strong economic rebound starting in Q2 is widely expected to make the country the only major economy to see positive economic growth this year. But how the Chinese economy rebounds – and what energy and climate decisions China makes – will have profound implications, not only for China's energy transition but also for the global climate agenda.

On September 22, Chinese President Xi Jinping announced that China aims to reach peak national carbon emissions before 2030 and achieve carbon neutrality before 2060. While the climate policy community has welcomed the news, it is still unclear how China's pledge will be translated into decisive short-term climate actions.

Nevertheless, there is reason to be optimistic. As the world's largest clean-energy market, the country accounts for more than one-third of the global installed wind and solar capacity and nearly half of global electric vehicles. Moreover, China's impressive record of scaling up clean-energy technologies in the past means that its net-zero emissions pledge is likely to further boost the world's low-carbon revolution. For instance, if China raises its hydrogen economy ambitions, the EU, the U.S., Japan, South Korea, and other major advanced economies will in all likelihood follow suit in order to maintain their competitive position in the global economy.

While the future of energy and climate policy action looks bright in the long run, China's economic recovery nonetheless gives some cause for concern in the short term. The service sector shrank YOY in both Q2 and Q3, while carbon emissions rose rapidly along with coal demand, with the secondary industry driving the economic rebound. To reverse the upward coal demand trajectory over the past several years, China must keep the YOY reduction of national coal consumption in Q4 at -2 per cent at least, which seems impossible. In other words, the climate benefits that China has seen due to the coronavirus pandemic have been short-lived.

China can still make a real difference in energy and climate policy during the 14th FYP period. Above all, China's 2060 carbon neutrality goal is a powerful impetus in triggering structural changes and is expected to make the 14th FYP for energy and climate more sustainable. For example, the 14th FYP target for coal-fired power capacity, which Beijing plans to release in the winter of 2021/2022, is expected to be lower than it would have been without the carbon neutrality pledge.

Another important decision by the Chinese government is its "dual circulation" economic strategy. Coupled with Beijing's rising anxiety over energy security, the strategy has profound implications for China's energy policy, especially when it comes to domestic supply. China's monthly coal imports have decreased significantly since May – a reflection of Chinese decision-makers new preference for domestic energy.

Disruptive changes are often years in the making, but timely steps in the right direction are certain to help shorten the time needed for the Chinese economy to depart from its carbon-intensive path. Consequently, economic recovery and the green transition must go hand in hand if China is to pursue both economic prosperity and environmental integrity.

As the turbulent Year of the Rat approaches its end, preliminary numbers show that the Chinese energy economy posted an annual growth of 2 per cent YOY in GDP, 1.8 per cent YOY in primary energy consumption, and 2.6 per cent YOY in power demand. Not surprisingly, the upward trajectory of China's national carbon emissions has also continued in 2020, unlike most other parts of the world, which are expected to see sizable reductions in emissions.

When it comes to creating a better world in the coming years and decades, there is reason for both

optimism and concern. The roll-out of coronavirus vaccines and the inauguration of President-elect Joe Biden next year could partly reverse the deglobalization trends of 2020. And a less contentious U.S.-China relationship coupled with America's return to the Paris Agreement is likely to help move the global energy transition and climate agenda forward, leading to renewed enthusiasm for international cooperation on issues of mutual interest and global significance. Hopefully, the result will be more integration instead of disengagement between China and the rest of the world.



5 | References

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Agora Energiewende develops evidence-based and politically viable strategies for ensuring the success of the clean-energy transition in Germany, Europe and the rest of the world. As a think tank and policy laboratory we aim to share knowledge with stakeholders in the worlds of politics, business and academia while enabling a productive exchange of ideas. Our scientifically rigorous research highlights practical policy solutions while eschewing an ideological agenda. As a non-profit foundation primarily financed through philanthropic donations, we are not beholden to narrow corporate or political interests, but rather to our commitment to confronting climate change.

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