China’s Net-Zero Promise

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Introduction

In September, during a video conference with the UN General Assembly, China’s President Xi Jinping made a surprise announcement stating that China is aiming for carbon neutrality by 2060. While this target remains a decade behind most countries’ ambitions, it is an enormous, and unexpected, step for the world’s largest polluter. China is responsible for around 28 percent of global emissions (10 GT total), driven by the biggest manufacturing industry and largest population in the world. This announcement built upon China’s previous commitment to peaking emissions by 2030 by adding a long-term target. However, it is vital that climate action ramps up from now. Setting a neutrality goal should not mean increasing emissions in the short term before peaking is expected.

This paper explores both how and why China has suddenly decided to pursue widespread climate action. It supports the view that enormous investments into renewable energy infrastructure combined with aggressive cuts in fossil fuel use will be the cornerstones of the transition. With renewable energy now at its cheapest ever, China must focus seriously on increasing solar and wind capacity and shun further investments into coal.

Understanding the thinking behind China’s decision to commit to long-term decarbonization will also be addressed. The nation’s reputation has taken a significant dent in recent years resulting from continued expansion and land claims, alleged human rights abuses, the ongoing intervention and disruption in Hong Kong, COVID-19, and more. With climate change now very much in the forefront of everyone’s minds, such a commitment is certainly a step in the right direction to repair the country’s image while propelling its economy to new heights.

Ramping Up Renewables

China’s previous lack of a long-term target had been compounded by the United States’ withdrawal from the Paris Agreement. With both nations combining to account for around 43 percent of global emissions, having neither on board to tackle emissions would be an enormous struggle. As China was the first nation to lockdown due to the COVID-19 outbreak, its emissions fell by 25 percent. Beijing experienced a sustained period of clear skies for weeks, an all too rare occurrence. Yet, “by June they had bounced back as coal-fired plants, cement and other heavy industries went back to work.” However, this bombshell announcement requires a change to the status quo.

Understanding how serious China is about this goal remains difficult but if they are to pursue it, renewable energy will be key. A complete transformation of the energy mix is required. According to Tsinghua University’s Institute of Energy, Environment and Economy, between 2025 and 2060, China would need to reduce coal by 96 percent, natural gas by 75 percent, and oil by 65 percent while increasing wind use by 346 percent and solar by 587 percent. The University note that fossil fuels would still make up around 16 percent of energy, meaning that some method of further reduction is required. This could include carbon capture and storage, emissions removal technologies or enhancing forest growth to act as carbon sinks, or, perhaps, all three.

Carbon Brief notes that to achieve China’s goal, there will need to broad changes to energy efficiency rules, carbon pricing, as well as commitments to building no more new coal plants. China has previously pledged to peak emissions by around 2030, but some fear this new long term target may mean a rapid increase in emissions over the coming years. However, a 2019
analysis by Wang et al estimates peaking to occur between 2021 and 2025. This research shows that as China’s cities become wealthier, per capita emissions fall. If this trend continues, it could reduce overall CO2 emissions before 2030. More recent modelling under existing policies and technological trends “suggests a rapid peak in China’s CO2 emissions before 2025, followed by a decline and longer-term plateau.” This early peaking, researchers say, is due to low-cost renewable energy replacing coal. Energy costs certainly play a vital role and in October, the International Energy Agency (IEA) published a report finding solar power is at its cheapest price ever in many countries.

China’s national trajectory is largely determined by five year plans written according to priorities. The 14th five-year plan for 2021-2025 is currently being written, the content of which will determine just how serious China is about decarbonization. Researchers at Tsinghua University’s Institute for Climate Change and Sustainable Development recently presented a possible roadmap for China’s climate change future, making “suggestions for energy-saving and emissions-reduction targets in the 14th FYP, such as a 20% share of non-fossil fuels in primary energy consumption by 2025, and a carbon emissions cap of under 10.5 billion tonnes.” Equally, suggestions to update the 2030 Nationally Determined Contribution (NDC) have been made, including reaching a 25 percent share of non-fossil fuels in energy consumption.

Further opportunities exist within transport. Currently, electric and hydrogen fuel cell vehicles account for under 2 percent of the total car industry. Considering China has the world’s largest car market, these figures will have to change significantly. Indeed, efforts to impact the car industry in China have already started. In September, Volkswagen announced a $17.44 billion investment into electric mobility in the country between 2020 and 2024, building upon their $2 billion commitment earlier in the year. However, Europe still dwarfs China when it comes to EV investment, meaning there are considerable prospects for progress, competition, and profits for innovative companies.

Naturally, moving such a large economy to net-zero requires investments on a previously unseen scale. To reduce fossil fuels in the national energy mix from 85 percent to less than 25 percent, an estimated $180 billion annually would be required. Add to this financing for infrastructure, electric vehicles and many other necessary areas, and you have an estimated investment totalling around $15 trillion. Policy implications remain shrouded in mystery. While decarbonizing China is a mammoth task, some believe that as the nation develops further, the target may be brought forward. An article in the Financial Times written by the chair of the Energy Transitions Commission notes that “because China will by 2050 be a fully developed rich economy, its ‘before 2060’ target should at some stage be advanced to 2050. Given its technological prowess and commitment to combat climate change, it almost certainly will.”

**Economic and Political Implications**

One of the big questions about the net-zero goal is whether it is a genuine attempt to reduce the most polluting nation in the world or whether it is a geopolitical power move. The timing of China’s announcement was not by chance. Recently, their image had been soured due to many issues, such as alleged ongoing human rights abuses and government intervention in Hong Kong. Equally, “the COVID-19 pandemic and Beijing’s outsized influence at the World Health Organization have undermined trust in China’s commitment to true multilateralism.” After locking horns with the US, Beijing needed to be proactive in diplomacy and this recent move appears to be just that.
Xi Jinping’s announcement, some believe, may have been driven more by political motives rather than a genuine desire to limit the impacts of climate change. For example, the fact that this announcement came just minutes after an address by President Trump and in the context of the US administration’s refusal to address climate change “is clearly a bold and well calculated move”\(^1\) and “demonstrates Xi’s consistent interest in leveraging the climate agenda for geopolitical purposes.”\(^2\) This then puts the US in an interesting position, with Washington having to decide whether to follow China despite withdrawing from the Paris Agreement or to continue down the path it has chosen. The question will be, if the world’s largest polluter can commit to decarbonization, why can’t the US?

Regardless of the reasons for the move, the implications are certainly not solely political. China’s impact extends beyond its borders, creating important spill-over effects. For example, the demand for solar panels in China has caused global prices to drop. Modelling suggests that such spill-over effects could reduce 500m tonnes of CO\(_2\) per year. These findings are consistent with Climate Action Tracker, which believes the new measures could avoid 0.2 – 0.3C of warming.\(^3\) The financial benefits are equally substantial. In recent analysis by Cambridge Econometrics, researchers found that China’s GDP could rise by as much as 5 percent later this decade, making China significantly richer while increasing their climate resilience.\(^4\) The benefit to some clean energy companies and their investors has already started. Since the announcement, the share price of solar and wind power companies such as Tongwei Co, Sungrow Power Supply increased by more than 40 percent.\(^5\) Considering the shift to carbon neutrality will require trillions of dollars, many companies could likely see rapid and continued growth for decades to come.

**Conclusion**

While China’s net-zero pledge is good news, it comes with many concerns. Firstly, it is imperative that the nation does not use a long-term pledge as a green light to raise short-term emissions. Net-zero 2060 must begin now, and emissions need to peak in the next decade, preferably well before 2030. Second, it must be noted that achieving this would be a gargantuan task that requires a total paradigm shift to how the country currently runs. According to 2018 data, China emitted nearly twice as much as the US. Therefore, as Varun Sivaram—senior research scholar at Columbia’s Center on Global Energy—puts it, “it would be the most herculean thing ever accomplished in human history.”\(^6\)

However, this move is certainly in China’s best interests environmentally, financially, and geopolitical. Research projections expect GDP to increase in a low-carbon Chinese economy despite the enormous costs of the transition. Equally, China has struck a tactical blow that “reflects three motivations: awareness in China that climate change will cause it huge harm; a desire to be a responsible global leader; and growing confidence that technological progress can make net-zero emissions attainable without interrupting China’s path to prosperity.”\(^7\) Lastly, this firmly places the pressure back on the US to tackle climate change. The US will need to take action on climate if they are to keep themselves in this geopolitical chess match for the title of global hegemon.

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\(^1\) McGrath. M. 2020. Climate change: China aims for ‘carbon neutrality by 2060’. BBC. Available at: https://www.bbc.co.uk/news/science-environment-54256826
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2 Union of Concerned Scientists. 2020. Each Country’s Share of CO2 Emissions. Available at: https://www.ucsusa.org/resources/each-countrys-share-co2-emissions

3 Ibid


5 Pollitt, H. 2020 Analysis: Going carbon neutral by 2060 ‘will make China richer’. Carbon Brief. Available at: https://www.carbonbrief.org/analysis-going-carbon-neutral-by-2060-will-make-china-richer

6 Wang, H; Lu, X; Deng, Y; Sun, Y; Nielsen, C; Liu, Y; Zhu, G; Bu, M; Bi, J; McElroy, M. 2019. China’s CO2 peak before 2030 implied from characteristics and growth of cities. Available at: https://www.nature.com/articles/s41893-019-0339-6


10 Ibid

11 Beijing Daily. 2020. The number of private cars in my country exceed 200 million for the first time. Available at: http://www.xinhuanet.com/fortune/2020-01/08/c_1125433202.htm


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