

CHINA

China tackling climate change

China is aiming to become carbon neutral by 2060. Wood Mackenzie analysts present their views on an announcement that surprised many industry watchers.

Speaking to the UN General Assembly in New York via video link on 22 September 2020, China's President Xi Jinping announced that the country is aiming to be carbon neutral by 2060. A commitment that took many industry watchers and those at the Assembly by surprise.

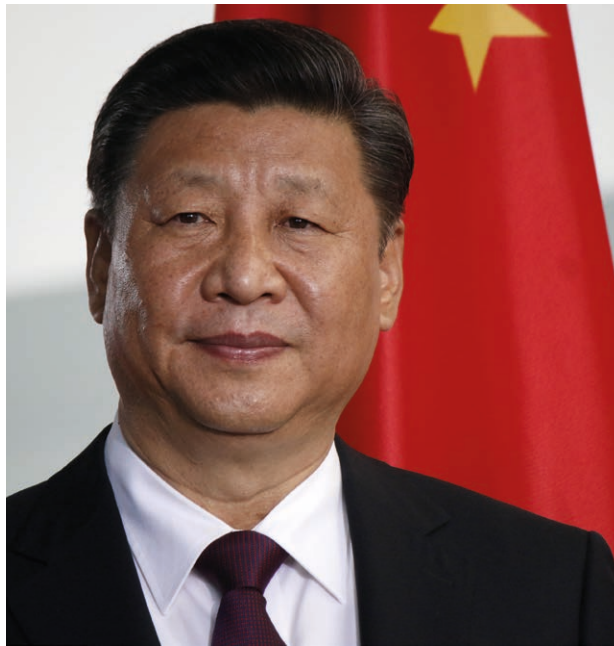
Commenting on the news, Wood Mackenzie Research Director Alex Whitworth says: 'With this announcement, the world's largest carbon emitter finally shifted from its long-term position of having limited responsibility to reduce global emissions as a developing country, to assuming clearer leadership in tackling climate change.'

President Xi also stated that China will reach peak emissions before 2030. The world's largest, and growing, energy market, China currently contributes about 28% of global emissions.

Calling for urgent reforms in the systems of global governance towards a greener and more sustainable pathway, President Xi said all countries should 'stop only pursuing development rather than environment protection'.

However, many questions about the announcement remain unanswered, as the market analyst's Asia-Pacific Vice Chair Gavin Thompson notes: 'Firstly, China's definition of "carbon neutrality" is not well defined from the short announcement. Further, no roadmap was offered as to how this will be achieved. 2060 is a long time out and immediate, concrete steps have yet to be announced. But China's upcoming 14th five-year plan has the potential to be the most important document in global energy market history. Increased investment in wind, solar, electric vehicle and battery storage technology deployment will almost certainly feature, and we can expect support for green hydrogen and carbon capture technology. It won't of course be the complete roadmap and I expect clean coal will continue to receive strong support.'

He continues: 'But if any country can achieve such ambitious goals it will be China. Strong state



President Xi Jinping's announcement that China is aiming to be carbon neutral by 2060 took many industry watchers and those at the UN General Assembly in New York by surprise

support and coordination have proven extremely effective at reaching economic goals. If this is now directed towards climate change then China is capable of transforming its carbon emissions trajectory over the coming four decades in exactly the same way that it has transformed its economy over the past 40 years.'

Meanwhile, the consultancy's Asia-Pacific Head of Markets and Transitions Prakash Sharma says: 'China currently emits over 10bn tonnes of carbon and will need to make significant efforts to reach net zero without affecting its economic development. In Wood Mackenzie's recently released Accelerated Energy Transition Scenario (AET-2), we have China's emissions fall nearly 60% by 2040 from the 2019 level using electrification, renewables, green hydrogen and carbon removal technologies. We expect China will need to deploy over a billion tonnes of carbon, capture and storage (CCS) capacity across its power and industrial sectors. These efforts will need to start much earlier and at a higher scale to deliver on the carbon neutral goal by 2060. The impact on global energy and commodity markets and seaborne trade is significant in our AET-2 scenario. Major

commodity exporters' strategies are reset too to align with China's ambitions.'

PetroChina 'near zero' goal

President Jinping's announcement came just a few weeks after PetroChina became the first national oil company (NOC) in the world to announce plans to meet 'near zero' net emissions by 2050 and invest in geothermal, wind and solar power, as well as pilot hydrogen projects.

However, the company's announcement came with frustratingly little detail. When asked if this was a serious move by PetroChina to reduce carbon emissions, Miaoru Huang, Senior Manager, China Gas Research, Wood Mackenzie, says: 'PetroChina is all about scale – the company produces 4.6mn boe/d – so any effort to reduce emissions requires serious consideration. PetroChina has committed more than \$33bn of capex in 2020, after budget cuts. Diverting a proportion of this into new energy is an important step, even if small in percentage terms. New energy also provides PetroChina much needed growth opportunities.'

This isn't PetroChina's first step in addressing the energy transition; through its parent, CNPC, the company is already a member of the Oil and Gas Climate Initiative (OGCI). PetroChina may not be looking to emulate the full net zero ambitions of some of the OGCI's European members – and I expect it will only be addressing Scope 1 and 2 emissions – but it has placed itself ahead of many of its NOC peers.'

Max Petrov, Principal Analyst, Corporate Research, adds: 'Let's stick with scale. PetroChina is targeting \$0.4–0.7bn/y between 2020–2025, rising to \$1.5bn/y thereafter to invest in geothermal, solar, wind and hydrogen. Through to 2025, that's only 1–2% of total spend.'

'Compare this with the European majors – Eni plans to spend over 20% of its total budget on renewables by 2023; for BP it will be 33% by 2030. I agree PetroChina has positioned itself

amongst the leading NOCs on net emissions reductions, but others are showing greater ambition. With a notably more emissions-intensive portfolio, Petronas is seeking board approval for a net zero 2050 target. Both CNOOC and Petronas have announced more aggressive spend on renewables for 2020, closer to 5% or higher.'

So, how can PetroChina achieve net zero? 'Without more detail, it's not clear,' says Petrov. 'We assume that the company is targeting Scope 1 and 2 emissions, excluding the carbon footprint associated with end-user emissions (Scope 3). That means PetroChina is going to need to invest into clean energies significantly more than stated. Gas will also have to play a critical role in decarbonisation. Oil declines fastest in PetroChina's current production profile, reducing from around 57% in 2020 to only about a quarter by 2035. Gas production is broadly flat through to 2035, helping curb emissions. If the company can grow gas production at the expense of oil, near zero looks in the bag. But this was the plan long before this announcement.'

'If PetroChina sets its sights on reducing Scope 3 emissions, things get even more complicated. In such a scenario, the company would have to shrink its upstream operations, similar to announcements made by some European majors. With an already mature portfolio, natural decline cuts PetroChina's production levels by half by 2035. You could argue achieving near zero never looked easier, but would the company

and the government accept the trade-off?'

'Don't be too surprised by the lack of detail,' adds Huang. 'This is standard for Chinese companies rather than any deliberate lack of transparency. After all, PetroChina is not a European major and targets in China are often aspirational rather than firm commitments.'

'Looking at the current portfolio, PetroChina's carbon emissions intensity is noticeably lower than many of its IOC and NOC peers. Production is predominantly onshore, with limited exposure to deepwater and LNG (though the latter is rising). Yes, this makes near zero look more straightforward, but a "do nothing" approach to reducing emissions isn't on the cards. With President Xi's push to expand domestic output and to grow overseas, PetroChina must look to boost output.'

Petrov notes that gas is 'essential' to achieving PetroChina's targets. He says: 'PetroChina needs to continue to increase the share of gas – particularly domestic production – to meet growing demand. Tight gas and shale gas are critical. Yes, more capital will be allocated to new energies, but note the vague reference to this depending on progress in these sectors. Over the next five years at least, domestic gas will dominate.'

Huang agrees that 'gas is key', but doesn't fully discount the potential for investment in low carbon and new energy options. 'During PetroChina's recent 1H2020 results call, management

put major emphasis on its gas end-user business. The recent creation of PipeChina and the need to compete with city gas distributors will encourage PetroChina to invest more into integrated energy solutions, including new energy.'

Taking a lead

So, can we expect more from China on climate change leadership? Huang suggests the announcement gives an indication around China's thinking on the energy transition and its broader role in climate change leadership. 'China worked hard to position itself as a driving force behind the 2016 Paris Agreement. Soft power matters. The leadership's more recent re-focus on energy security has rolled back some of these efforts. China is stressing "clean coal" as a dominant fuel while developing technologies and manufacturing capacity for low carbon energy. But if China wants to drive the agenda in the future, its NOCs will also need to be climate leaders.'

Meanwhile, Petrov expects significant change in China's policy 'only to the extent that the leadership will use next year's 14th five-year plan to bolster existing policy initiatives and financial incentives for renewables and anti-pollution measures'. He adds: 'Employment, education and the environment are the three main pillars of the next plan. Given current economic and geopolitical uncertainty, stability is critical.'

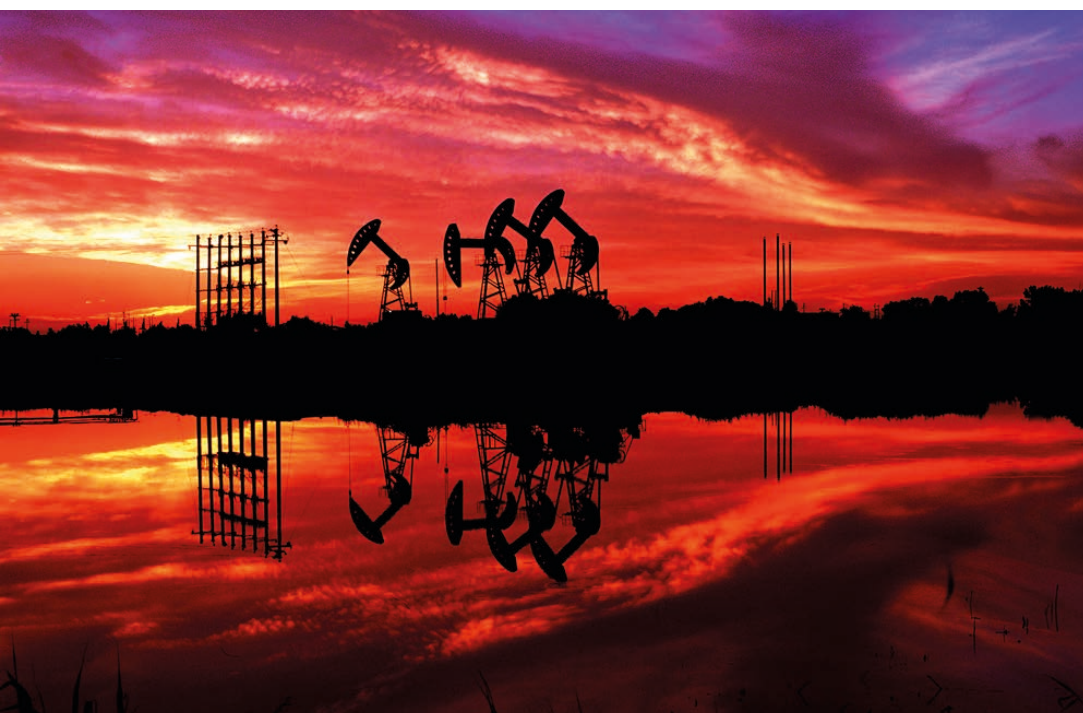
The bottom line

'Some will label this greenwashing,' comments Petrov. 'I just don't see PetroChina ready to embark on the kind of transformation that the likes of BP and Eni have announced. The company's mandate remains firmly in oil and gas; E&P will continue to dominate the portfolio. Is PetroChina ready to transform its existing profitable businesses? Highly unlikely. But a lot can change in 30 years.'

Huang adds: 'All oil and gas companies are facing pressure to reduce carbon emissions. And with its already low carbon portfolio, lower emissions trajectory and future investment in gas, PetroChina was already on this path. Little may radically change in the short term. But this is China, any shift in gear by the government on carbon and things could move fast.' ●

The world's largest, and growing, energy market, China currently contributes about 28% of global emissions

Photo: Petrochina



China's carbon neutrality bill could hit over \$5tn – see p8 for details.