China's 14th five-year plan
Spotlighting climate and environment

July 2021

The 14th five-year plan (FYP)[1], covering the years 2021 to 2025, was officially endorsed by the National People's Congress (NPC) on 11 March 2021. In this note[2], we focus on the climate and environmental-related strategies and guidelines presented in the Plan. In this area, the 14th FYP has received different opinions. Some have suggested the Plan lacks sufficient details on a much-awaited acceleration in actions on China's climate commitments, while others have argued that it successfully defines a framework consistent with those commitments. Our own interpretation acknowledges these perspectives, but will ultimately depend on the level of detail and verifiable new data to be contained in the sectoral five-year plans expected by the end of this year.

The 14th FYP includes 20 either indicative or binding "main indicators of economic and social development", the targets hereafter. There are five binding targets related to the environment. Their focus is on capping energy and carbon intensity per unit of GDP, rather than the level of emissions.[3] As a comparison, the 13th FYP had 25 main targets, of which 10 were environment-related, also all binding.

Table 1: Main targets for green ecology

Indicator	2020	2025 target	Cumulative target	Binding?
Reduction in energy consumption per unit of GDP	--	--	13.5%	Yes
Reduction of carbon dioxide emissions per unit of GDP	--	--	18%	Yes
Share of days with good air quality in cities (prefecture level and up)	87.0%	87.5%	--	Yes
Share of surface water at or better than class III	83.4%	85%	--	Yes
Forest coverage rate	23.2% (2019 value)	24.1%	--	Yes

The 14th FYP environmental targets are broadly in line with the pace set in 2016 and more recent information provided by national data and research, in our view. The FYP indicates the general direction to a low-carbon transition. It touches on the energy mix, energy distribution, improving efficiency in resource utilisation, greening of all sectors, enhancing a green legal and policy environment, promoting the circular economy, as well as participating in and leading international cooperation on the climate change agenda.

[1] Available in Chinese from http://www.xinhuanet.com/fortune/2021-03/13/c_1127205564.htm. The English translation is by the UNDP China's research team.
[2] See also UNDP China's Issue Brief on the 14th five-year plan for a more comprehensive analysis. Available here: https://www.cn.undp.org/content/china/en/home/library/environment_energy/issue-brief---china-s-14th-five-year-plan.html
[3] A detailed analysis can be found here: https://www.carbonbrief.org/qa-what-does-chinas-14th-five-year-plan-mean-for-climate-change

SEVEN PROMINENT TAKEAWAYS:

1. **Energy consumption and emissions intensity targets are broadly consistent with China's climate pledges, albeit within the lower rather than upper range.**[4]

2. **The share of non-fossil energy** (including nuclear and hydropower) **in primary energy consumption was moved** from a binding target in the 13th FYP to one that is neither binding nor indicative. The Plan aims to increase the non-fossil share to around 20% by 2025, from 15.8% in 2020, while raising nuclear power capacity to 70 GW (52 GW in 2020).[5]

3. **"Reasonable controls" on the construction of coal power plants are to be developed**, while utilizing coal and fossil fuels more cleanly and efficiently**,** as well as promoting the use of **"clean coal"**.

4. **A carbon intensity control target is specified. This is to be supplemented with controls on total emissions,** as well as restraining high energy intensity and high emission projects, increasing control over other greenhouse gas (GHG) emissions, improving resilience and adaptation capacity. However, no targets are provided on the latter.

5. **Two new targets on security, one of which is on energy production capacity,** were explicitly introduced.

6. **On climate-related international engagements and global governance, standard language is used.** The FYP repeats the principle of "common but differentiated responsibilities". On the other hand, it shapes other areas of international engagement beyond the environment that can have significant potential repercussions for low-carbon development. These include science, technology and cyberspace, strengthening synergies along the Belt and Road, international development cooperation and foreign assistance, along with legislation on overseas investment.

7. **No five-year GDP growth target was included.** Growth should be kept in "a reasonable interval depending on the situation". The lack of a growth target in the FYP and a low one for 2021 may reflect the high level of uncertainty. But importantly, it provides space for the Government to pursue other targets, including environmental ones, and supporting the shift towards better quality growth.

FOUR AREAS AWAITING CLARIFICATION:

1. **The Plan is light on details and practical elements** needed to put China firmly on a road to fulfil its 2030-2060 pledge and the Paris Agreement's commitments.

2. **The emissions target is contingent upon a relatively subdued economic growth path.** Extrapolating the rate of carbon intensity improvements envisaged in the 14th FYP through 2030, if total emissions were to be consistent with a 1.5°C warming path, as estimated by Professor He Jiankun,[6] annual average GDP growth would need to remain below 4.2%, according to our calculations. Should GDP grow at 5% annually, carbon emissions will rise by 1% per year, a pace too high to reach the plateauing level between 2020 and 2030 for a 1.5°C scenario.

3. **Lack of an explicit emissions cap and strong signals for front-loaded actions.** China issued permits for more coal power plants in 2020 than in 2018 and 2019 combined and explicit

[4] For a path consistent with carbon neutrality and a 1.5ºC scenario, Professor He Jiankun from the Institute for Climate Change and Sustainable Development (Tsinghua University) estimated that "energy intensity of GDP decreases by no less than 14% [13.5% target in the 14th FYP]; the share of non-fossil energy reaches about 20% [same as in 14th FYP]; the carbon intensity of GDP decreases by 19 to 20% [18% in 14th FYP]; total energy consumption is contained within 5.5 billion tce, and total CO_2 emissions are less than 10.5 billion tons." Available from: https://mp.weixin.qq.com/s/S_8ajdq963YL7X3sRJSWGg:
[5] The nuclear power capacity target is also not among the "main indicators".
[6] CO_2 calculations for a 1.5°C scenario are made by Prof. He Jiankun, Institute for Climate Change and Sustainable Development (Tsinghua University). Available from: https://mp.weixin.qq.com/s/S_8ajdq963YL7X3sRJSWGg. If China keeps GDP growth at 5% and decreases the carbon intensity per unit of GDP by 18% in its next FYPs, China's total CO_2 emissions would continue increasing beyond 2030.

coal caps have been lifted.[7] Thus, both backward and forward-looking considerations would call for more ambitious targets and front-loaded climate actions, as the costs and risks of possible irreversible effects of climate change keep rising on the back of delays.[8]

4. **Demand-side proposals are limited to a reference "to promote market-based trading of carbon emission rights."** Most of the initiatives presented address curbing emissions from the supply side. There are no explicit mentions of requirements to phase out fossil fuel subsidies and/or the use of taxation or regulation to change the relative prices of fossil fuels and renewable energy, removing market distortions and addressing market failures that would make top-down quantity targets more effective.

The FYP leaves the burden of actionable details to the sectoral FYPs. The focus will be on:

- the energy development FYP drafted by the National Development and Reform Council (NDRC) and the National Energy Administration (NEA);
- the plan for peaking emissions by 2030 led by NDRC[9];
- the FYP on greenhouse gas emission control and prevention by the State Council;
- the plan on energy intensive industrial sectors (e.g., iron and steel, cement, aluminium and chemicals) by the Ministry of Industry and Information Technology (MIIT); and
- the National Fisheries FYP, as well as the plan for ocean environmental protection, the first such document to be drafted.

Timing constraints and other considerations may have played a role in formulating the FYP. The September pledge of more ambitious climate targets may have come late in the long drafting process of the FYP to be fully embedded within it. The Plan includes references to the advanced emission peak and carbon neutrality goals and sets some – in our view necessary, but insufficient – binding environmental targets. Other elements may have played a role balancing the climate needs (see Endnote i) as well as geopolitical considerations as China observes other players' moves. Much may depend on forthcoming pledges from other countries. Overall, we see no sign that China is not serious about climate change (see Endnote ii).

WHAT TO EXPECT GOING FORWARD:

Most of the expectations for the sectoral plans will be on targets and mechanisms for reducing reliance on coal to rein in emissions. The energy sector is the largest emitter in China (around 40%[10]). Coal accounted for 80% of CO_2 emissions in 2018.[11] China's coal power capacity, at around 1,050 GW, accounts for half the global total.[12]

However, in the next five years coal is there to stay and coal power generation capacity is likely to continue to grow, especially in coal-rich provinces. That said, President Xi stressed that

[7] Chinese provinces granted construction approval to 36.9 GW of coal power projects in 2020, over three times the capacity permitted in 2019. China built three times as much new coal power capacity as all other countries in the world combined – the equivalent of one large coal plant per week, and now has 247 GW of coal power under development. Global Energy Monitor, February 2021. Available from: https://globalenergymonitor.org/wp-content/uploads/2021/02/China-Dominates-2020-Coal-Development.pdf

[8] WRI estimated that a 2026 peak in carbon emissions would generate nearly USD1 trillion in net economic and social benefits in 2050. Available from: https://www.wri.org/publication/accelerating-net-zero-transition-china

[9] https://www.bloomberg.com/news/articles/2021-07-06/china-puts-most-powerful-agency-in-charge-of-climate-policies?sref=Xtu7nrsq&utm_campaign=China%20Briefing&utm_medium=email&utm_source=Revue%20newsletter

[10] Professor He Jiankun, Institute for Climate Change and Sustainable Development, Tsinghua University. Available from: https://mp.weixin.qq.com/s/S_8ajdq963YL7X3sRJSWGg

[11] IEA CO_2 Emissions from Fuel Combustion: https://www.iea.org/subscribe-to-data-services/co2-emissions-statistics

[12] https://www.carbonbrief.org/china-should-rapidly-close-186-coal-plants-to-help-meet-its-climate-goals-study-says

the increase in coal consumption will be "strictly" limited during the next five years and it will be "phase[d] down in the 15th five-year plan period"[13].

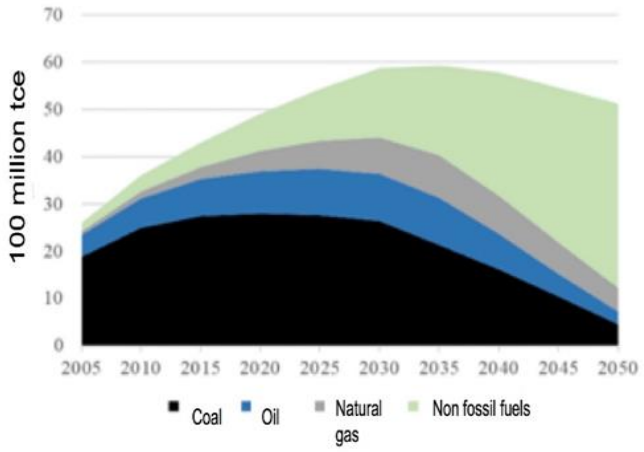
Tsinghua University's carbon neutrality roadmap[14] can be taken as an indication of what may be included in the sectoral FYPs. The roadmap shows that:

- The share of coal in the energy consumption mix should fall to 51% by 2025 and to 45% by 2030 (56.8% 2020), while CO_2 emissions need to peak around 2025 and stabilise during the next FYP period to be consistent with President Xi's December 2020 commitments[15] (Figure 1).
- Non-fossils fuel must account for over 85% of total energy demand (Figure 2), with over 90% of electricity generated by non-fossil fuels, and less than 5% by coal by 2050.

Figure. 1. Scenario analysis to 2030

		2005	2010	2015	2020	2025	2030
Annual GDP growth rate (%)			11.3	7.9	5.9	5.3	4.8
5-year-reduction of energy intensity of GDP (%)			19.1	18.5	14.3	14.0	14.0
Energy consumption (100 million tce)		26.1	36.1	43.4	49.4	55.0	59.8
Energy consumption mix	coal (%)	72.4	69.2	63.7	57.0	51.0	45.0
	oil (%)	17.8	17.4	18.3	18.5	18.0	17.0
	Natural gas (%)	2.4	4	5.9	8.5	11.0	13.0
	Non-fossil fuels (%)	7.4	9.4	12.1	16.0	20.0	25.0
CO2 intensity per unit energy consumption ($kgCO_2$/kg ce)		2.32	2.25	2.16	2.03	1.90	1.75
CO_2 emissions (100 million t CO_2)		60.6	81.3	93.7	100.3	104.5	104.6
5-year-Reduction of CO_2 intensity of GDP (%)			21.5	21.2	19.7	19.4	20.6
Percentage down from the 2005 level (%)					50.3	60.0	68.2

Figure 2. Primary energy consumption to 2050



Source: Professor He Jiankun, Institute for Climate Change and Sustainable Development, Tsinghua University. Available from: https://mp.weixin.qq.com/s/S_8ajdq963YL7X3sRJSWGg

To conclude, the 14th FYP is broadly in line with China's current enhanced climate commitments, but…

1. This is contingent upon China not growing too fast along its current (still) heavily carbon-dependent pathway.
2. The Plan relies on two 'relative' tools – energy intensity and carbon intensity targets per unit of GDP – to address climate change. It lacks a clear indicator for reducing the 'absolute' level of emissions at the speed and rigour required by the urgency of the case made.
3. The Plan would have benefited from a more forceful signal to front-load concrete climate actions. This is especially true as some climate experts maintain that China's absolute emissions would need to plateau by 2025, and correspondingly at a markedly lower level, for it to realise carbon neutrality by 2060.

Last but not least, for global climate goals to be achieved, countries, including China, need to consider providing clear commitments on overseas coal and fossil fuel investments. In the past three years, the world has markedly accelerated construction of coal power plants, now building an average of 4.4 new power plants every week.[16] China's role is dominant, although Asian countries such as India, Indonesia, Vietnam and Japan[17] in particular, have also contributed. Since 2000,

[13] http://www.xinhuanet.com/english/2021-04/22/c_139899306.htm
[14] Professor He Jiankun, Institute for Climate Change and Sustainable Development, Tsinghua University. October 2020. Available from: https://mp.weixin.qq.com/s/S_8ajdq963YL7X3sRJSWGg
[15] http://www.xinhuanet.com/english/2020-12/12/c_139584803.htm
[16] UNDP China, "The Role of China and Asia in Coal Power Capacity Expansion", September 2020 internal draft
[17] Global Coal Plant Tracker database, available from https://endcoal.org/tracker/

Chinese policy banks have extended nearly USD 52 billion in loans to support coal projects;[18] since 2013, they have financed 72% of global coal plants.[19] That said, there is evidence of a change in tide. Chinese-backed coal projects (announced, permitted, in construction or going into operation) peaked in 2015 and 2016 and slowed ever since. Last year, no new overseas coal investment was announced. Financial and risks considerations, technological advancement favouring renewables and regulatory innovations are all likely to have contributed to more than USD 65 billion of Chinese-backed coal-fired power plants being shelved, mothballed or cancelled.[20] Ending coal investments and boosting financing for renewables will be vital to ensuring that climate commitments are met.

ENDNOTES:

i) 1. Uncertainty around COVID-19 impact on China's and other economies. 2. The trade-off between decarbonisation, energy security and access to energy for all. 3. A conservative approach of the Government towards meeting climate goals erring towards caution. 4. Based on experience, a bottom-up approach may also be introduced to complement the top-down method, with provinces drafting initiatives to control emissions, rather than issuing central emissions quotas. 5. A lack of sufficient research on how to achieve carbon neutrality. 6. The lack of a growth target in the FYP and a low one for 2021 could give space to pursue other targets, including environment ones, supporting the shift towards high-quality growth.

ii) There are positive signs coming from authorities, including the "Guide to Action" issued at the 5th Plenum October 2020; guidelines by the Ministry of Ecology and Environment (MEE), National Energy Administration (NEA), NDRC, Ministry of Science and Technology (MOST), Ministry of Finance (MOF) and Central Bank and by various provincial and city authorities; China Coal Association's announcement (https://energyandcleanair.org/china-14th-five-year-plan-carbon-neutrality/) on coal consumption to be capped at 4.2 billion tonnes in 2025, consistent with coal consumption peaking before 2025; the Central Environmental Inspection Team's criticism of the NEA for failing to limit the country's expansion of coal power plants (https://www.carbonbrief.org/qa-could-an-environmental-inspectors-criticisms-accelerate-chinas-climate-policies); news of China withdrawing from overseas coal investments projects (https://www.ft.com/content/30840645-58d2-4da5-be05-f476623677d2 and https://www.bloomberg.com/news/articles/2021-06-30/biggest-china-bank-walks-away-from-3-billion-zimbabwe-coal-plan); the re-establishment of the G-20 working group on sustainable finance co-chaired by China and the United States; and the launch of a leading group on carbon peak and carbon neutrality (https://www.carbonbrief.org/explainer-china-creates-new-leaders-group-to-help-deliver-its-climate-goals).

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[18] Boston University's Global Development Policy Center. https://www.bu.edu/cgef/#/all/Country
[19] https://qz.com/1760615/china-quits-coal-at-home-but-promotes-the-fossil-fuel-in-developing-countries/
[20] IIGF Green BRI Center, "Brief: Coal phase-out in the Belt and Road Initiative (BRI): an analysis of Chinese-backed coal power from 2014-2020". June 2021. https://green-bri.org/coal-phase-out-in-the-belt-and-road-initiative-bri-an-analysis-of-chinese-backed-coal-power-from-2014-2020/?cookie-state-change=1626074203353