

CLIMATE AMBITION BEYOND EMISSION NUMBERS

**Taking stock of progress by looking inside
countries and sectors**

CHINA

Teng Fei

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Taking stock of progress by looking inside countries and sectors

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Disclaimer

The results presented in this report are outputs of the academic research conducted under the DDP BIICS project as per the contractual agreement. The academic work does not in any way represent our considered opinion for climate negotiations and also does not reflect the official policy or position of the Government of China.

How is this document relevant to the Global Stocktake?

This document is part of a collective report that assesses the evolution of climate ambition in 26 countries and 3 hard-to-abate sectors through a granular and context-specific analysis of trends and progress of national and sectoral transformations.¹ This approach allows identifying what hinders and spurs action in countries and sectors, and understanding the conditions that can support enhanced ambition, which could be political, social, economic, governance.

These insights are directly relevant to four overarching functions of the Global Stocktake in support of its desired outcome, i.e. "to inform Parties in updating and enhancing, in a nationally determined manner, their actions and support in accordance with the provisions of the Paris Agreement, as well as enhancing international cooperation for climate action" (Article 14.3 of the Paris Agreement):

- Create the conditions for an open and constructive conversation on global cooperation (on e.g., technology, trade, finance, etc.), based on an in-depth understanding of the international enablers of enhanced country ambition.
- Organize a process for knowledge sharing and collective learning, based on concrete examples of actions already in place or being discussed, including best practices.
- Create space for open dialogues across different stakeholders to support better coordination of actions, based on a detailed understanding of the levers to be activated to enhance ambition in national and sectoral transitions
- Facilitate ownership by decision-makers of the climate challenge and the risks and opportunities of the low-emission and resilient transition, based on context-specific and granular analysis of barriers and enablers.

More specifically, the collective report in general – and this document in particular – can contribute to address some of the key guiding questions for the Global Stocktake², notably:

- What actions have been taken to increase the ability to adapt to the adverse impacts of climate change and foster the climate resilience of people, livelihoods, and ecosystem? To what extent have national adaptation plans and related efforts contributed to these actions (Decision 19/CMA.1, paragraph 36(c))?
- How adequate and effective are current adaptation efforts and support provided for adaptation (Article 7.14 (c) Paris Agreement)?

¹ The full report « Climate ambition beyond emission numbers - Taking stock of progress by looking inside countries and sectors" can be found at: <https://www.iddri.org/en/publications-and-events/report/climate-ambition-beyond-emission-numbers-taking-stock-progress>

² Draft Guiding Questions for the Technical Assessment of GST1 (version 20th October 2021), available at: https://unfccc.int/sites/default/files/resource/Draft%20GST1_TA%20Guiding%20Questions.pdf

- What are the barriers and challenges, including finance, technology development and transfer and capacity-building gaps, faced by developing countries?
- What is the collective progress made towards achieving the long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions referred in Article 10.1 of the Paris Agreement? What is the state of cooperative action on technology development and transfer?
- What progress been made on enhancing the capacity of developing country Parties to implement the Paris Agreement (Article 11.3 Paris Agreement)?
- To achieve the purpose and long-term goals of the Paris Agreement (mitigation, adaptation, and finance flows and means of implementation, as well as loss and damage, response measures), in the light of equity and the best available science, taking into account the contextual matters in the preambular paragraphs of the Paris Agreement:
 - What are the good practices, barriers and challenges for enhanced action?
 - What is needed to make finance flows consistent with a pathway towards low GHG emissions and climate-resilient development?
 - What are the needs of developing countries related to the ambitious implementation of the Paris Agreement?
 - What is needed to enhance national level action and support, as well as to enhance international cooperation for climate action, including in the short term?
 - What is the collective progress made by non-Party stakeholders, including indigenous peoples and local communities, to achieve the purpose and long-term goals of the Paris Agreement, and what are the impacts, good practices, potential opportunities, barriers and challenges (Decision 19/CMA.1, paras 36(g) and 37(i))?

Foreword

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Country commitments as reflected in enhanced Nationally Determined Contributions submitted to the UNFCCC are insufficient to put the world on track to achieve the collective objective of the Paris Agreement to hold temperature increase below 2 °C or 1.5 °C above pre-industrial levels. Furthermore, concrete policies and actions adopted by countries on the ground are often not sufficient to achieve these NDC targets. These conclusions highlight the need to increase ambition and to provide convincing evidence to accelerate action in the immediate and short term to give effect to this ambition. Yet these assessments are not sufficient to effectively guide the progressive increase of ambition, as organized by the cyclical process of the Paris Agreement.

APPROACH

With this imperative in mind, this report adopts a different, complementary, perspective on climate ambition. It seeks to open the box of emission pathways, by considering multiple dimensions of the conditions that will make these pathways possible. These are technical, economic, political, social and governance considerations in need of attention to enable the required far-reaching and systemic transformation towards the long-term goal. On the one hand, the revision of emission targets needs to be directed by an assessment of how drivers of emissions should change to trigger transformation. On the other hand, converting emissions' targets into pertinent concrete implementation requires well-designed policy packages and investment plans that are also informed by a clear and detailed understanding of the starting point, priorities and interplays between the available levers of transformation.

This bottom-up assessment aims at contributing to the process of collective learning in support of the progressive increase of collective ambition, as inserted at the core of the Paris Agreement paradigm. Approaching climate ambition through the lens of underlying transformations calls for reflecting the heterogeneous nature and the multi-faceted aspects

of transitions in different sectors and countries. This forces a move away from a purely global perspective and adopts a more granular approach based on country and individual sector perspectives. Thus, the report explores trends and progress on these transformations, as locally observed over the past years, notably since the Paris Agreement. This 'backwards looking' approach can help identify where developments are going in the right direction, where they should be accelerated and where major tensions remain that should be addressed as a priority to avoid undermining the transition. The picture of the state of the ambition discussion, firmly embedded in the country and sectoral realities, can provide means for reflection and action within the international climate community, particularly to inform focus areas for advancing the collective ambition agenda.

STRUCTURE OF THE REPORT

This country report describes the recent evolutions of domestic discourses on climate ambition, national climate policy, national governance and concrete policies and actions with a significant effect on GHG emissions. The chapter highlights a selection of striking and structurally important elements to advance the transformation towards carbon neutrality from an in-country perspective.

This report is part of a full series of 26 country chapters and three sectoral chapters. The full report includes a "summary for decision-makers" to present 10 cross-cutting messages emerging from the country and sector analysis, as a guide to the selection of priorities for collective action in the post-COP26 period.

You will find the full report at: https://www.iddri.org/sites/default/files/PDF/Publications/Catalogue%20Iddri/Rapport/DDP_beyond%20emissions%20report.pdf



LOCAL STORY ON CLIMATE AMBITION SINCE THE PARIS AGREEMENT

This chapter has been written thanks to the support of the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

This article provides a brief overview of developments in China's climate policy over the past five years. Due to the limitations of space and the author's knowledge, it is not possible to provide a comprehensive overview of developments in China's climate policy in this article, and therefore the developments selected in this article reflect only the author's personal assessment.

DOMESTIC DISCOURSE

China's most notable policy development after the Paris Agreement was the announcement of its carbon neutrality target in September 2020 and the update and enhancement of its Nationally determined contribution (NDC) from 'peak emission around 2030' to 'peak emission by 2030'.

In September 2020, China President Xi Jinping, speaking at the general debate of the 75th UN General Assembly, proposed that China would adopt stronger policies and measures to increase its NDC under the Paris Agreement. President Xi announced that China is striving to peak its CO₂ emissions by 2030 and working towards carbon neutrality by 2060. This announcement raises China's climate ambitions under the Paris Agreement in two ways: firstly, it advances the time to reach the peak from

“around year 2030” to “before 2030”; secondly, it puts forward the goal of carbon neutrality for the first time. Although the scope of carbon peaking and carbon neutrality was unclear in the early days of the announcement, on 24th July 2021, Mr Xie Zhenhua, China's Special Envoy for Climate Change Affairs, further clarified that China's carbon neutrality target includes not only carbon dioxide, but also CH₄, N₂O and F-gases. Therefore, China's carbon neutrality target is a “climate neutral” target that includes all greenhouse gases. As the IPCC 1.5 degree special report states that in order to achieve the global 1.5 degree temperature rise target, global CO₂ emissions need to be net zero by around 2050 and all greenhouse gases need to be net zero by around 2070. China's goal of achieving “climate neutrality” by 2060 is therefore consistent with the global 1.5 degree temperature rise target.

There is a lack of public awareness investigation of climate change in China, but a recent Deloitte survey of millennials and Generation Z shows that young Chinese are becoming more aware of global environmental issues such as climate change, which will be crucial in driving future action on climate change in China.

A global survey conducted by Deloitte at the end of 2019 revealed that the top three global challenges of concern to millennials in China are: healthcare, climate change and income inequality, with 39%, 28% and 18% of concerns respectively. The top three global concerns for millennials in all 43 countries are: climate change (28%), crime (22%) and unemployment (21%). Compared to global millennials and Generation Z, Chinese millennials and Generation Z are more positive and optimistic about tackling climate change. In the survey of global millennials, 51% of global millennials believe it is too late to fix the damage of climate change, while only 40% of global millennials are optimistic about taking action to protect the planet. In contrast, only 42% of Chinese Millennials believe it is too late to repair the effects of climate change, while nearly 63% of Chinese Millennials are optimistic about taking action to protect the planet. This contrast is even more pronounced among Chinese and global Generation Z.

The attitude to climate change of Generation Z and the Millennials in China is fundamentally important for

China's future climate policy, because they represent 40% of China's population. Millennials in China have following characteristics: well educated, able to surf information sources via the internet, growing up at a time of rising Chinese power, and supporting China's political system in a more confident and positive way. Like millennials across the globe, Chinese youngsters are also more global-minded and more concerned with environmental issues like climate change. The political growth of Chinese millennials is also a major reason why the Chinese government has become more active in its climate change policies.

NATIONAL GOVERNANCE

The Department of Climate Change (DCC) is the main government department in charge of climate change in China. This department was transferred in 2018 from the National Development and Reform Commission (NDRC), which is responsible for economic planning, to the Ministry of Ecology and Environment (MEE), which is responsible for the environment. This transfer has raised concerns about a weakening of climate policy in China, but in fact it has strengthened rather than weakened China's policy action to climate change.

The Department of Climate Change was established in 2008 and is responsible for the formulation, planning and implementation of China's climate policy. The department was formerly part of the National Development and Reform Commission (NDRC). As the main government department that sets China's five-year plans, the NDRC is considered one of the most powerful ministries in China. The integration of climate change functions into the ministry responsible for economic planning is also considered a feature of China's institutional set-up for climate governance. However, in the 2018 institutional reform, the DCC was transferred from the NDRC to the Ministry of Ecology and Environment. This transfer was made to implement the Chinese government's thought of ecological civilisation, and climate change as an important part of ecological issues was then incorporated into the responsibility of the Ministry of Ecology and Environment. As the Ministry of Ecology and Environment is weaker than the NDRC in terms of

both political resources and policy coordination, some observers have thus argued that this may lead to a weakening of the importance of China's climate policy. However, the importance of China's climate policy has actually been strengthened rather than weakened by the transfer of the DCC. As the Ministry of Ecology and Environment's main responsibility is ecological and environmental issues, and climate policy is more aligned with ecological and environmental protection objectives, it is easier for climate policy to be agreed first within the department and then to reach the central policy-making level. Whereas when the Climate Department was part of the NDRC, climate policy was often difficult to agree within the department because it conflicted with objectives such as energy security and economic development. The transfer of the DCC from the NDRC to the MEE effectively marks a more independent climate policy.

Climate change has become a priority policy agenda for the Chinese government, and to strengthen the implementation of carbon peaking and carbon neutrality targets, a leading group on new carbon peaking and carbon neutrality has been established at the central level, and similar bodies are being set up by local governments.

After the announcement of climate neutrality target, climate change has been listed as a top policy priority for China. This can be proved by following evidence: firstly, President Xi Jinping has reiterated China's carbon peaking and carbon neutrality targets more than 20 times in different venues. Secondly, climate change was listed as the key topic in several highest level economic work meetings, such as the Central Economic Work Conference and the Central Finance and Economic Commission meeting. In those meetings, the carbon neutrality target was described as "a major test of the ability to govern the country". Furthermore, those meetings have set up an accountability system for "improving the supervision and evaluation mechanism" and attribute the responsibility to "all levels of government and party committees". Therefore, the achievement of carbon neutrality have been allocated to responsibility of local governors and linked to their political promotion.

To coordinate the actions to achieve the carbon peaking and carbon neutrality, China also set up a new

leading group on carbon peaking and carbon neutrality in May 2021. The central government ask the NDRC to host the office of this leading group due to its strong capacity of coordination. However the CCD and MEE are still the focal point on climate change. It is still not clear at this stage how the NDRC and MEE divide work among themselves. Corresponding to the central government's leading group, different provinces and municipalities have also set up carbon peaking and carbon neutrality leading groups, with the provincial governors and municipal mayors acting as group leaders and specifically responsible for the development and implementation of the province's carbon peaking and carbon neutrality plans. The Leadership Group is a unique governance mechanism in China, which involves the inclusion of different government departments in the Group to form a regular coordination mechanism, usually chaired by the Chief Executive, to deploy resources to fulfil the Group's responsibilities. As climate change involves a number of sectors such as energy, transport, buildings and industry, which are often fragmented, there is a need to establish a co-ordination mechanism through the leading group to co-ordinate actions across sectors.

The significant reduction in the cost of emission reduction technologies, such as renewable energy, is an important technological driver for carbon neutrality targets. At the same time, both domestic and international pressures are pushing China's energy-intensive industries to transition to carbon neutrality, with even more ambitious carbon neutrality targets than the national target.

In 2008, China's National Development and Reform Commission (NDRC) first approved four photovoltaic power projects at an approved tariff of RMB 4/kWh, which was the first time that a PV feed-in tariff was explicitly proposed in China. And on April 2nd, 2020, the National Development and Reform Commission released the PV feed-in tariff for 2020, with a guideline tariff of RMB 0.35, 0.4 and 0.49 per kWh for centralised PV power plants in I~III resource zones. From 2008 to 2021, the PV feed-in tariff was decreased by over 91%. In most provinces, PV feed-in tariffs are already lower than coal feed-in tariffs. The feed-in tariff for wind power has also fallen significantly over the same period, with the

feed-in tariff for Class I resource areas falling from 0.51 RMB/kWh in 2009 to 0.29 RMB/kWh in 2020, a 43% drop. The significant reduction in the cost of renewable energy generation is an important technological driver of China's commitment to peak carbon and carbon neutrality. Because one of the central government's key concerns is the price of electricity and energy costs, which is an important policy consideration for the government to control CPI and protect manufacturing competitiveness. When renewable energy costs are lower than coal, the government can create a win-win situation between carbon neutrality and economic goals, therefore a much stronger incentive to move to carbon neutrality.

Following the announcement of China's carbon neutrality target, some Chinese energy-intensive companies have also set targets for achieving carbon peaking and carbon neutrality. For example, National Energy Group and State Power Investment have proposed to achieve carbon peaking by 2023, 7 years earlier than national target; while Baowu Steel and Sinopec have proposed to achieve carbon neutrality by 2050, ten years earlier than national target. The pressure to reduce emissions in these energy-intensive sectors comes from two combining sources: on the one hand, these sectors will be included in the domestic carbon market in the near future. The domestic pressure to reduce emissions is driving these high energy-consuming enterprises to advance on their carbon reduction targets. In addition, some of the high energy consuming companies are also facing international competition and increasingly stringent emission requirements internationally. For example, Baowu Steel is China's and the world's largest steel company, producing over 100 million tonnes of steel annually. Baowu Steel announced in January 2021 that it targets to achieve peak emissions by 2023, a 30% reduction by 2035 and carbon neutrality by 2050. In explaining its motivation for achieving carbon neutrality ten years earlier, Baowu Steel cited the fact that other international steel companies have set 2050 as the target date for achieving carbon neutrality and the requirements of EU customers for product emissions as important factors for their decision making.

ACTIONS AND POLICIES

China's 14th Five-Year Plan for economic development, adopted on 11th March 2021, will provide fundamental direction for China's development over the period 2021-2025 and also sets important targets for China on climate change, including the introduction of total carbon emission controls in the 14th Five-Year Plan period.

The Five-Year Plan is China's most important policy tool, on which national ministries and local government will base their specific sectoral and local plans, including China's first five-year plan dedicated to addressing climate change, currently being developed under the leadership of the Ministry of Ecology and Environment. In the 14th Five Year plan, China plans to reduce CO₂ emissions per unit of GDP by 18 per cent by 2025. At the same time, the '14th Five-Year Plan' also clearly states that the share of non-fossil energy in energy consumption should be increased to about 20% by 2025. The '14th Five-Year Plan' also states that local governments, key industries and enterprises that are in a position to do so should be encouraged to take the lead in reaching emission as soon as possible. In addition, this plan also emphasises the importance of climate adaptation, and will strengthen the observation and assessment of the impact of global warming on vulnerable areas of China.

China is also likely to implement total carbon emission control during the 14th Five-Year Plan. The 14th Five year plan clearly states that it will "implement the 2030 nationally determined contribution to addressing climate change, and formulate an action plan to achieve carbon emissions peaking by 2030. Improve the dual control of total energy consumption and energy intensity, with a focus on controlling fossil energy consumption. Implement a system that focuses on carbon intensity control, supplemented by total carbon emission control". The Ministry of Ecology and Environment also announced on 19 March that it would "actively promote the development of an action plan to achieve CO₂ emissions peaking by 2030, and promote the implementation of policy tools such as total carbon emission control." One of the highlights of the 14th Five-Year Plan is therefore the development of a dual control system for carbon emissions intensity and total emissions, and the subsequent 14th Five-Year

Plan for Energy and 14th Five-Year Plan for Climate Change will specifically refine the control system and targets for total energy and total carbon emissions. In addition, the control of total fossil fuels also provides “double guarantee” for the control of total carbon emissions, because once the target for the control of total fossil fuels is set, it is also equivalent to indirectly setting the target for total carbon emissions.

China will undertake policy actions for carbon peaking and carbon neutrality in ten key areas, including energy, industry, buildings, transport, circular economy, technology innovation, green finance, incentive policies, carbon markets and carbon pricing, and nature-based solutions.

To implement the carbon peak and carbon neutral targets, China will take policy measures and actions to accelerate transformation and innovation in ten areas. In the energy sector, the main focus will be on optimising the energy mix and controlling and reducing coal consumption. “During the 14th Five-Year Plan period, China will strictly control the growth of coal consumption and gradually reduce it during the 15th Five-Year Plan period. China will develop nuclear power, hydropower, wind power, solar energy, biomass, ocean energy, geothermal energy and green hydrogen energy. China has announced that by 2030, it will have installed wind and solar photovoltaic power generation capacity of 1.2 billion kW, build a new power system with new energy sources as the mainstay, promote industrial electric mobility and improve energy efficiency. In the industrial sector, it will mainly promote industrial and industrial optimisation and upgrading. It will curb the development of energy-intensive and emission-intensive industries, promote the optimisation and upgrading of traditional industries, develop information technology, high-tech equipment, new materials, biology, new energy, energy conservation and environmental protection and other strategic new industries, and strive to build a highly efficient, clean, low-carbon and circular green manufacturing system. In the building sector, it will promote energy-efficient and low-carbon buildings and low-carbon facilities. Accelerate the development of ultra-low energy, net-zero energy and low-carbon buildings, encourage the develop-

ment of assembly-type buildings and green building materials, implement green and low-carbon concepts in all aspects of infrastructure construction and operation management, and build low-carbon intelligent cities and green villages. In transportation sector, China will build a green and low-carbon transport system. It will optimise the transport structure, promote the priority development of public transport and develop clean, zero-emission vehicles such as electric hydrogen fuel cells.

In the field of circular economy, China will improve the efficiency of resource use, strengthen legislation, adhere to the extended production responsibility system, and encourage the promotion of remanufacturing. In the field of science and technology, China will promote green and low-carbon technological innovation. It will research and develop technologies such as renewable energy, smart grids, energy storage, green hydrogen energy, electric and hydrogen-fuelled vehicles, carbon capture and storage technologies. In the area of green finance, China will expand financial support and investment, establish and improve a green financial system, support financial institutions in issuing green bonds, innovate green financial products and services, and actively promote the construction of a green “Belt and Road Initiatives”. China will strengthen incentive policies and further introduce economic policies and reform measures. It will improve fiscal, tax, price and other incentive economic policies to guide the flow of capital and technology to green and low-carbon areas. In the area of carbon markets, China will gradually expand the coverage of the market and enrich the varieties and trading methods. Finally China will implement nature-based solutions. It will actively promote action and cooperation in this area, promote afforestation to protect natural ecosystems, and also continue to promote initiatives for international cooperation in related areas with the United Nations and relevant countries.

China has officially started the operation of its national carbon market in July 2021 and will gradually include other energy-intensive sectors in the future to become the largest carbon market operating in the world.

On July 16th, the national carbon market was officially launched, and the first compliance cycle of the national carbon market included more than 2,000 key

emitters in the power generation industry, covering about 4.5 billion tonnes of carbon dioxide emissions annually. Since its launch, the national carbon market has been actively trading, with a steady rise in trading prices and smooth market operation. As of July 23rd, the total turnover of carbon emission allowances in the national carbon market was more than 4.8 million tons, with a total turnover of nearly 250 million yuan. The carbon price is about 50 RMB/tCO₂.

Other energy-intensive industries will be included in the national carbon market in the future. In conjunction with the preparation of the national emissions inventory, China has organised data accounting, reporting and verification for emission intensive industries such as iron and steel, cement, aviation, petrochemicals, chemicals, non-ferrous and paper, and has a relatively solid data base in these industries. The Ministry of Ecology and Environment has commissioned relevant industry associations to study and propose emission benchmarks and standards that meet the requirements of the national carbon market, which will further expand the scope of industries covered by the carbon market and give full play to the important role of the market mechanism in controlling greenhouse gas emissions, promoting green and low-carbon technological innovation and guiding climate investment and financing.

DDP

The DDP is an initiative of the Institute for Sustainable Development and International Relations (IDDRI). It aims to demonstrate how countries can transform their economies by 2050 to achieve global net zero emissions and national development priorities, consistently with the Paris Agreement.. The DDP initiative is a collaboration of leading research teams currently covering 36 countries. It originated as the Deep Decarbonization Pathways Project (DDPP), which analysed the deep decarbonization of energy systems in 16 countries prior to COP21 (deepdecarbonization.org). Analyses are carried out at the national scale, by national research teams. These analyses adopt a long-term time horizon to 2050 to reveal the necessary short-term conditions and actions to reach carbon neutrality in national contexts. They help governments and non-state actors make choices and contribute to in-country expertise and international scientific knowledge. The aim is to help governments and non-state actors make choices that put economies and societies on track to reach a carbon neutral world by the second half of the century. Finally, national research teams openly share their methods, modelling tools, data and the results of their analyses to share knowledge between partners in a very collaborative manner and to facilitate engagement with sectoral experts and decision-makers.

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The Institute for Sustainable Development and International Relations (IDDRI) is an independent, not-for-profit policy research institute based in Paris. Its objective is to identify the conditions and propose tools to put sustainable development at the heart of international relations and public and private policies. IDDRI is also a multi-stakeholder dialogue platform and supports stakeholders in global governance debates on the major issues of common interest, such as actions to mitigate climate change, protect biodiversity, strengthen food security, and to manage urbanisation. The institute also participates in work to build development trajectories that are compatible with national priorities and the sustainable development goals.

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