WHAT TO EXPECT IN CHINA'S SECOND NATIONALLY DETERMINED CONTRIBUTION: TOWARDS A GLOBAL CARBON NEUTRAL FUTURE

Report Summary

Introduction

There is an urgent need to strengthen the global response to climate change. Top on the agenda of the UN Climate Action Summit 2019 to be held in New York this month is enhancing the ambition and intensity of countries' actions under the Paris Agreement framework. The UN Secretary-General hopes that the summit will encourage countries to put forward new national climate goals as early as possible. According to the Paris Agreement framework and climate negotiation outcomes in recent years, in 2020 countries should submit a second round of Nationally Determined Contributions (NDCs) with higher ambition, updating them every five years thereafter.

A new iGDP analysis reviews global and domestic trends in sustainable development, summarizes China's new strategic plans and policies in the 13th Five-Year Plan period, details China's progress in the implementation of its NDC, and describes potential updates in its next NDC. This summary describes the report's main findings.

Main Findings

The analysis finds:

- The latest statistics show that among the 15 quantitative targets under China's NDC in 2015, most have seen solid progress, with performance in 2018 exceeding 2020 goals.
- Setting up an energy-related CO_2 cap target for 2025 and 2030 would likely be necessary to peak CO_2 emissions around 2030 and would help achieve the peak target ahead of schedule. An energy-related CO_2 cap target would also exert a positive impact on controlling the long-term GHG emission trend.
- Setting up non-CO_2 GHG emission reduction targets can further strengthen China's climate efforts. This includes targets for peaking non-CO_2 GHGs, overall HFC emission reduction, and methane emission reduction in the energy sector.

Summary of Analysis

The Progress

Since the adoption of the Paris Agreement, global climate governance has developed a new "top down" action pattern. Countries have been trying to strike a balance between national interests and the common interests of mankind, taking into account economic and social conditions at both the national and regional levels. In early 2016, the UN Sustainable Development Goals took effect; In October 2016, the contracting parties of the *Montreal Protocol on Substances That Deplete the Ozone Layer* unanimously adopted the *Kigali Amendment*, deciding to phase out the production

地址：中国北京市朝阳区秀水街1号建外外交公寓7-1-51 邮编：100600
Address:7-1-51,Jianguomenwai Diplomatic Residence Compound, No1 Xiushui Street,Chaoyang District, Beijing, 100600 P.R. China
电话(Tel)：86-10-8532-3096 传真(Fax)：86-10-8532-2632 信箱(Email)：igdpoffice@igdp.cn 网站(Website)：www.igdp.cn

and use of HFCs. Together with the Paris Agreement, which went into effect in November 2016, these efforts kicked-off a new global low-carbon transition movement.

During this time, China's economic growth entered a new stage. In 2018, China's per capita national income reached USD 9,732, exceeding the average level of mid-income countries. Although the pace of its economic growth has gone down from a double-digit rate to an annual growth rate of 6.5% during the 13th Five-Year Plan Period, China's economy continues to expand and its middle-income population continues to grow. These factors will affect consumption-related GHG emissions in the years to come.

Against this backdrop, according to the latest statistics, ***China has already met many of the targets in its NDC ahead of schedule.***

- Among the 15 quantitative targets under China's NDC in 2015, most have seen solid progress.
- Six 2020 targets have been met ahead of schedule, including: CO_2 emissions per unit of GDP (hereinafter referred to as carbon intensity) in 2018 dropped 45.8% from the 2005 level, meeting the target of reducing carbon intensity between 40% to 45% two years ahead of schedule. In 2018, China's PV installed capacity reached 174GW, exceeding the 2020 goal. Wind power installed capacity is also likely to surpass its 2020 goal in 2019.
- The progress in five other important targets has met expectations. The share of non-fossil fuel in primary energy consumption, the share of natural gas in primary energy consumption, wind power installed capacity, the share of value-added of strategic emerging industries in GDP and the proportion of green buildings in new urban buildings have all met expectations.
- 2017 and 2018 coal bed gas production and annual geothermal use data show that there is still a gap with 2020 goals.
- Due to a lack of public data, progress in meeting emission reduction targets for HCFC-22 and HFC-23 and the gaps with 2020 goals cannot be assessed.

At the same time, post-2020 mid and long-term action goals in key sectors become increasingly clear. The five years since NDCs were submitted under the 2015 Paris Agreement coincide with China's 13th Five-Year Plan period. In industrial development plans under the guidance of the 13th Five-Year Plan, all sectors also rolled out updated, more detailed and stronger energy conservation and carbon reduction goals, as well as policy measures with a longer timeframe. Key sectors issued mid and long-term strategic arrangements for 2025 and 2030. These policy arrangements represent the specific measures taken by China to peak CO_2 around 2030 and can serve as the basis for updating the NDC in 2020.

The analytical foundation for a 2050 long-term emission pathway is getting stronger. In recent years, domestic and foreign research organizations have jointly conducted multiple modeling development and scenario analyses on long-term green and low-carbon development in China,

providing a robust technical foundation for China to raise long-term GHG emission control goals. Most research outcomes agree on the emission trend by 2030. With full implementation of China's current emission reduction policies, China is very likely to meet carbon peak and carbon intensity goals before 2030. But in order to meet the 2 °C goal, China will need to cut emissions more quickly after reaching its carbon peak around 2030.

In addition, many research organizations have conducted analysis of non-CO_2 GHG emission trends and emission reduction actions, and have estimated potential emission reduction under stronger regulation. A scenario analysis by the Chinese Academy of Sciences shows that with weak non-CO_2 GHG emission control, the peaking of CO_2 does not necessarily mean the peaking of total GHG emissions.

The Prospects

The updates to China's NDC will likely relate to domestic and global development trends, and will reflect the latest long-term GHG emission trend analysis as well as the specific goals and measures outlined in China's new strategic plans and policy actions. The following are items that the authors believe China should include in its new NDC:

Setting up an energy-related CO_2 cap target for 2025 and 2030 should be seen as necessary for peaking CO_2 emissions around 2030 and would help achieve the peak target ahead of schedule. It would also have a positive impact on controlling China's long-term GHG emissions. Although a total carbon emission control target would not necessarily lead to extra GHG emission reduction beyond the existing NDC, under China's new environmental and climate change regulation mechanism, setting up a cap target would greatly stimulate the implementation of policies. An energy-related CO_2 cap target is one of the most highly anticipated potential NDC revision due to its great potential to strengthen China's GHG emission reduction actions.

Setting up non-CO_2 GHG emission reduction targets can further strengthen China's climate efforts, including targets for peaking non-CO_2 GHGs, total HFC emission reduction and methane emission reduction in the energy sector. China promised to peak GHG emissions around 2030, but only targeted energy-related CO_2, not other GHGs. If China puts forward emission reduction targets for non-CO_2 GHGs and strengthens their regulation policies, the global fight against climate change would receive a string boost. Targets for non-CO_2 GHGs would also help create a long-term emission reduction vision encompassing all GHGs and all economic sectors.

Under the NDC submitted in 2016, China set up goals to strengthen climate actions and issued inter-sectoral and sector-specific policies. During the 13th Five-Year Plan period, China also rolled out a series of new policies to tackle climate change. These new policy actions could be expanded in the updated NDC to be submitted in 2020.

Incorporating elements of upcoming long-term low-carbon development strategies and roadmaps into the new NDC. China is researching and drafting a long-term low-carbon

development strategy and roadmap. The world is watching closely to see when and in what form these long-term strategies and goals will be released. This vision may outline the timeframe for realizing low emission or carbon neutrality, an emission reduction percentage compared to a baseline year (e.g. 2005), or an emission reduction percentage compared to a baseline scenario in 2050. China can also raise the ambition of its long-term vision for industrial development, such as the share of renewable energy in the industry sector. This vision should be carefully designed based on long-term low-carbon development strategy research and China's strategic positioning, needs to be incorporated into future mid and long-term national economic and social development plans, and should align with the mid- and long-term development plans of different industrial sectors. In this way, China would provide a stable and consistent institutional guarantee for estimating and intensifying GHG control targets, actions and policies.

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Media Contact
Diego Montero
Mail: diego@igdp.cn
Tel: 86-10-85323096