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Report on the technical expert review of the first biennial transparency report of China*

Summary

This report presents the results of the technical expert review of the first biennial transparency report of China, conducted by a technical expert review team in accordance with the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement. The review took place from 15 to 19 September 2025 in Bonn.

* In the symbol for this document, 2024 refers to the year in which the biennial transparency report was submitted, not to the year of publication.



Abbreviations and acronyms

A6.4ER	emission reduction under Article 6, paragraph 4, of the Paris Agreement
AD	activity data
BTR	biennial transparency report
CER	certified emission reduction
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CRT	common reporting table
CTF	common tabular format
EF	emission factor
GDP	gross domestic product
GHG	greenhouse gas
HFC	hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
ITMO	internationally transferred mitigation outcome
LULUCF	land use, land-use change and forestry
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
N ₂ O	nitrous oxide
NA	not applicable
NDC	nationally determined contribution
NE	not estimated
NIR	national inventory report
PaMs	policies and measures
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
SF ₆	sulfur hexafluoride
TERT	technical expert review team

I. Introduction and summary

A. Introduction

1. This report covers the technical expert review of the BTR1 of China.¹ The review was organized by the secretariat and conducted by the TERT in accordance with the MPGs,² particularly chapter VII thereof.
2. A draft version of this report was transmitted to the Government of China, which provided comments that were taken into account, as appropriate, in this final version of the report.³
3. The review was conducted as a centralized review from 15 to 19 September 2025 in Bonn by the following team of nominated experts from the UNFCCC roster of experts: Veronika Ginzburg (Russian Federation), Julien Jabot (Norway), Juan Luis Martin Ortega (El Salvador), Orlando Ernesto Rey Santos (Cuba), Mayra Rocha (Brazil), Yusuf Serengil (Türkiye) and Hiromi Yoshinaga (Japan). Veronika Ginzburg and Mayra Rocha were the lead reviewers. The review was coordinated by Vitor Gois Ferreira and Davor Vesligaj (secretariat).
4. Applying the flexibility provided to those developing country Parties that need it in the light of their capacities,⁴ China chose to undergo a centralized instead of an in-country review.

B. Scope

5. The TERT conducted a technical expert review of the information reported in the BTR1 of China as per the scope of the review defined in paragraph 146 of the MPGs, consisting of:
 - (a) Review of the consistency of the information submitted by the Party under Article 13, paragraphs 7 and 9, of the Paris Agreement with the MPGs taking into account the flexibility accorded to the Party under Article 13, paragraph 2, of the Paris Agreement (see chap. II.A below);
 - (b) Consideration of the Party's implementation and achievement of its NDC under Article 4 of the Paris Agreement (see chap. II.B below);
 - (c) Identification of areas of improvement⁵ for the Party related to implementation of Article 13 of the Paris Agreement (see chap. II.D below);
 - (d) Assistance in identifying capacity-building needs (see chap. II.E below).

C. Summary

6. China submitted its BTR1 on 31 December 2024, on the deadline of 31 December 2024 mandated in decision 18/CMA.1. China also submitted its CRTs on 31 December 2024, on the deadline of 31 December 2024, and CTF tables on 31 December 2024, on the deadline of 31 December 2024.

¹ An unofficial English translation of the BTR1 submitted by China was used by the TERT for the technical expert review.

² Decision 18/CMA.1, annex.

³ As per para. 162(e) of the MPGs.

⁴ As per paras. 158–159 of the MPGs.

⁵ As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs.

7. A list of the areas of improvement identified on the basis of the review of the consistency of the reported information with the MPGs can be found in the assessment tables.⁶

8. The Party applied flexibility as provided for those developing country Parties that need it in the light of their capacities pursuant to Article 13, paragraph 2, of the Paris Agreement in relation to the NIR of anthropogenic GHG emissions by sources and removals by sinks⁷ and the information necessary to track progress in implementing and achieving its NDC.⁸ Information on where the flexibility was applied is included in chapters II.A.1–II.A.2 below.

D. Information provided by the Party pursuant to paragraphs 143–145 of the modalities, procedures and guidelines

9. China reported information on support needed and received for implementing Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building. The Party reported on support needed and received for preparing reports pursuant to Article 13 of the Paris Agreement and addressing the areas of improvement identified by the TERT. Support is needed primarily for preparing subsequent NIRs and BTRs, including with regard to improving data collection and developing and maintaining a database with national AD and EFs, developing methodologies for evaluating mitigation effects of PaMs, analysing and reporting on climate change impacts and adaptation, and carrying out a cost–benefit analysis of actions related to financial, technology development and transfer, and capacity-building support needs, whereas support has been received for preparing the BTR1, conducting training and design activities at the national, local and enterprise level to enhance capacity to comply with the requirements for reporting under the enhanced transparency framework and improving the data-collection mechanism. Table 1 summarizes the information that China reported in CTF tables III.12–III.13 on some key examples of support needed and received. The TERT noted that the above-mentioned information reported by the Party is not subject to review as per the scope of the review defined in paragraph 146 of the MPGs.

Table 1

Summary of support needed and received by China for implementing Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building

(USD)

<i>Status of support</i>	<i>Amount</i>
Support needed from 2025 to 2030	8 346 210
Support received from 2021 to 2026 ^a	6 466 210

Sources: China's BTR1 and CTF tables III.12–III.13.

^a Expected time frame for receiving support.

⁶ Contained in document FCCC/ETF/TERR.1/2024/CHN/Add.1, available at <https://unfccc.int/first-biennial-transparency-reports>.

⁷ The developing country Party applied flexibility in the light of its capacities with respect to the provisions in paras. 29, 32, 34, 48, 57 and 58 of the MPGs.

⁸ The developing country Party applied flexibility in the light of its capacities with respect to the provision in para. 92 of the MPGs.

II. Technical expert review⁹

A. Review of the consistency of the submitted information with the modalities, procedures and guidelines¹⁰

1. National inventory report¹¹

10. The TERT assessed the information reported in the BTR1 of China and identified areas of improvement relating to consistency with the MPGs, which are described in tables 1–7 of the assessment tables referred to in paragraph 7 above and summarized in table 2.

⁹ As per para. 187 of the MPGs.

¹⁰ As per para. 146(a) of the MPGs.

¹¹ As per para. 150(a) of the MPGs.

Table 2

Information reported in China's national inventory report and review of consistency with the modalities, procedures and guidelines

<i>Element</i>	<i>Elements of information to be reported</i>	<i>Summary of information reported</i>	<i>ID#(s) for the area(s) of improvement identified^a</i>
Submission type (para. 12 of the MPGs)	Has the NIR been submitted as a stand-alone document?	No	No areas of improvement were identified
Time series (paras. 57–58 of the MPGs)	What years have been reported and is the time series in accordance with the MPGs? ^b	2005 (NDC base year) and 2020–2021, in accordance with the MPGs	No areas of improvement were identified
Metrics (para. 37 of the MPGs)	Has the Party used the 100-year global warming potential values from the IPCC Fifth Assessment Report?	Yes	No areas of improvement were identified
	Has the Party used other metrics?	No	No areas of improvement were identified
Gases (paras. 47–49 and 51 of the MPGs)	Which gases have been reported? ^b	CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆	No areas of improvement were identified
Indirect emissions (para. 52 of the MPGs)	Has the Party reported indirect CO ₂ emissions and national totals with and without indirect CO ₂ ?	No	No areas of improvement were identified
	Has the Party reported indirect N ₂ O emissions from sources other than those in the agriculture and LULUCF sectors as a memo item?	No	No areas of improvement were identified
National circumstances and institutional arrangements (paras. 18–19 of the MPGs)	Has the Party reported information on the functions related to inventory planning, preparation and management?	Yes	No areas of improvement were identified
Methodologies, parameters and data (paras. 20–24 of the MPGs)	Has the Party used the <i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i> ?	Yes	No areas of improvement related to recommendations were identified
	Has the Party used other IPCC methodological guidance?	Yes, the <i>2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands</i> and the <i>2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>	No areas of improvement were identified

<i>Element</i>	<i>Elements of information to be reported</i>	<i>Summary of information reported</i>	<i>ID#(s) for the area(s) of improvement identified^a</i>
Key category analysis (paras. 25 and 41–42 of the MPGs)	Has the Party reported a key category analysis?	Yes, a key category analysis was performed using approach 1 and a 95 per cent threshold for level and trend assessment for the starting year (2005) and the latest reporting year (2021) and with and without LULUCF	No areas of improvement were identified
Time-series consistency and recalculations (paras. 26–28, 43 and 57 of the MPGs)	Has the Party reported a consistent time series?	Yes	No areas of improvement related to recommendations were identified
	Has the Party reported recalculations and provided justification and explanatory information for them?	Yes, in relation to its 2023 biennial update report under the Convention	No areas of improvement were identified
Uncertainty assessment (paras. 29 and 44 of the MPGs)	Has the Party reported the results of the uncertainty analysis and the methods used, underlying assumptions and trends? ^b	Yes, including level uncertainty, reported using approach 1 for the starting year (2005) and the latest reporting year (2021)	2.G.1
QA/QC plan and procedures (paras. 34–36 and 46 of the MPGs)	Has the Party elaborated information on an inventory QA/QC plan, including information on the inventory agency responsible for implementing QA/QC, and current and future QA/QC procedures? ^b	Partly. There is no inventory QA/QC plan, but QA/QC procedures were implemented	No areas of improvement were identified
Assessment of completeness (paras. 30–33, 45 and 50 of the MPGs)	Have any areas of improvement for lack of completeness been identified for the following sectors?	Yes	No areas of improvement related to recommendations were identified
	Energy	No	No areas of improvement were identified
	IPPU	Yes	4.I.1
	Agriculture	No	No areas of improvement were identified
	LULUCF	Yes	6.L.3, 6.L.7
	Waste	No	No areas of improvement were identified
Threshold for reporting significant categories (para. 32 of the MPGs)	Are the estimated emissions for all categories and in total for all gases and	Yes	No areas of improvement were identified

<i>Element</i>	<i>Elements of information to be reported</i>	<i>Summary of information reported</i>	<i>ID#(s) for the area(s) of improvement identified^a</i>
Methodologies, EFs, parameters and AD (paras. 39–40 and 53–56 of the MPGs)	categories reported insignificant below the relevant thresholds? ^b		
	For categories reported as “NE” owing to insignificance, has information been reported showing that the likely level of emissions is below the threshold of significance?	Partly	No areas of improvement related to recommendations were identified
	Has information been transparently reported on categories, gases, methodologies (including the rationale for selecting them), EFs and AD at a disaggregated level for the following sectors?	Partly	2.G.4
	Energy	Partly	3.E.1, 3.E.4, 3.E.5
	Has information been reported on international aviation and marine bunker fuel emissions as two separate entries and such emissions distinctly reported from national totals?	Yes	No areas of improvement related to recommendations were identified
	Has information been reported indicating how feedstocks and non-energy use of fuels have been accounted for in the inventory, under the energy or IPPU sector?	Partly	No areas of improvement related to recommendations were identified
	IPPU	Partly	4.I.2, 4.I.3, 4.I.4, 4.I.5, 4.I.6, 4.I.8, 4.I.9, 4.I.10, 4.I.11, 4.I.12
	Agriculture	Partly	5.A.2, 5.A.3, 5.A.5
	LULUCF	Partly	6.L.1, 6.L.5
	Did the Party provide supplementary information on the approach to reporting emissions and removals from harvested wood products in accordance with IPCC guidance other than the production approach, and provide supplementary information on emissions and removals from	Yes	No areas of improvement related to recommendations were identified

<i>Element</i>	<i>Elements of information to be reported</i>	<i>Summary of information reported</i>	<i>ID#(s) for the area(s) of improvement identified^a</i>
	harvested wood products estimated using the production approach?		
	Waste	Partly	7.W.2, 7.W.3

^a See document FCCC/ETF/TERR.1/2024/CHN/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.

^b The developing country Party applied flexibility in the light of its capacities with respect to this provision.

2. Information necessary to track progress in implementing and achieving the nationally determined contribution¹²

11. The TERT assessed the information reported in the BTR1 of China and identified areas of improvement relating to consistency with the MPGs, which are described in tables 10, 11 and 13 of the assessment tables referred to in paragraph 7 above and summarized in table 3.

Table 3

Information reported in China's submission

<i>Topic</i>	<i>ID#s for the area(s) of improvement identified^a</i>
National circumstances and institutional arrangements (paras. 59–63 of the MPGs)	No areas of improvement were identified
Description of the NDC under Article 4 of the Paris Agreement, including updates (para. 64 of the MPGs)	No areas of improvement were identified
Information necessary to track progress in implementing and achieving the NDC under Article 4 of the Paris Agreement (paras. 65–79 of the MPGs)	10.1
Mitigation PaMs, actions and plans related to implementing and achieving the NDC under Article 4 of the Paris Agreement (paras. 80–90 of the MPGs)	11.2
Summary of GHG emissions and removals (para. 91 of the MPGs)	No areas of improvement were identified
Projections of GHG emissions and removals ^b (paras. 92–102 of the MPGs)	No areas of improvement were identified

^a See document FCCC/ETF/TERR.1/2024/CHN/Add.1. The areas of improvement referred to in this table comprise only those relating to recommendations in that document.

^b The developing country Party applied flexibility in the light of its capacities with respect to this provision.

3. Financial, technology development and transfer, and capacity-building support provided¹³

12. According to chapter V of the MPGs, developed country Parties shall provide information on financial, technology development and transfer, and capacity-building support provided pursuant to Article 13, paragraph 9, of the Paris Agreement, and other Parties that provide support should provide such information and, in doing so, are encouraged to use the MPGs in that chapter.¹⁴ China did not provide information on financial, technology development and transfer, or capacity-building support provided under Articles 9–11 of the Paris Agreement in its BTR1.

B. Consideration of the Party's implementation and achievement of its nationally determined contribution¹⁵

13. In considering China's progress in implementing and achieving its NDC, the TERT noted that the NDC¹⁶ targets include aims to have CO₂ emissions peak before 2030 and achieve carbon neutrality before 2060, as well as 2030 targets to lower CO₂ emissions per unit of GDP by over 65 per cent compared with the 2005 level, increase the share of non-fossil fuels in primary energy consumption to around 25 per cent, increase the forest stock

¹² As per para. 150(b) of the MPGs.

¹³ As per para. 150(c) of the MPGs.

¹⁴ As per para. 118 of the MPGs.

¹⁵ As per para. 146(b) of the MPGs.

¹⁶ The consideration of the Party's implementation and achievement of its NDC is in the context of the NDC submitted by China on 28 October 2021. The TERT noted that the Party submitted a new NDC on 3 November 2025.

volume by 6 billion m³ compared with the 2005 level, and bring the Party's total installed capacity of wind and solar power to over 1.2 billion kW.

14. The indicators that China selected to track progress in implementing and achieving its NDC are described in table 4.

Table 4

Description of the indicator(s) selected by China to track progress in implementing and achieving its nationally determined contribution

<i>NDC target</i>	<i>Indicator</i>	<i>Description</i>
Having CO ₂ emissions peak before 2030	CO ₂ emissions from fuel combustion and IPPU	Refers to CO ₂ emissions from fuel combustion in the energy sector (category 1.A) and from the IPPU sector. Data for relevant years are available from the NIR
Decreasing CO ₂ emissions per unit of GDP by over 65 per cent compared with the 2005 level by 2030	Reduction of energy-related CO ₂ emissions per unit of GDP	“Energy-related CO ₂ emissions” refers to CO ₂ emissions from fuel combustion (category 1.A) in the energy sector and CO ₂ emissions from the consumption of raw materials in ammonia production (subcategory 2.B.1), use of carbon materials and electrode paste in calcium carbide production (subcategory 2.B.5), fossil energy consumption in methanol (subcategory 2.B.8.a) and ethylene (subcategory 2.B.8.b) production, reductants and raw material consumption in ferroalloys production (subcategory 2.C.2) and coal and coke consumption in lead and zinc production (subcategories 2.C.5 and 2.C.6), as well as coal and coke consumption in lubricant use (subcategory 2.D.1) and paraffin wax use (subcategory 2.D.2), under the IPPU sector. GDP is at a constant price for the current year. Data for relevant years are available from the NIR and an official publication of the National Bureau of Statistics
Increasing the share of non-fossil fuels in primary energy consumption to around 25 per cent by 2030	Share of non-fossil fuels in primary energy consumption	Refers to the percentage of energy consumption from hydropower, nuclear power, wind power, solar power, biomass energy and geothermal energy in total primary energy consumption. Data for relevant years are available from an official publication of the National Bureau of Statistics
Achieving a total installed capacity of wind and solar power of over 1.2 billion kW by 2030	Total installed capacity of wind and solar power	Refers to the total output power of all wind and solar power generation units at rated conditions. Data for the relevant years are published by the National Energy Administration
Increasing forest stock volume by 6 billion m ³ compared with the 2005 level by 2030	Forest stock volume	Refers to the total trunk volume of all trees in the forests in the country. This indicator is derived through sampling, taking provinces as the survey unit, using fixed plots systematically set up for sampling and measuring trees in plots with a diameter at breast height greater than or equal to 5 cm. Diameter at breast height and average tree height are recorded, and one-variable or two-variable tree volume tables for different tree species are used to calculate the timber volume for each tree. Data for relevant years are published under the National Forestry Inventory and the National Integrated Monitoring of Forest, Grassland and Ecological Conditions

Sources: China's BTR1 and CTF tables 1–3.

15. The TERT noted that the contribution of LULUCF to achieving the NDC is not included in the Party's base-year level or target-year level, and that China did not use ITMOs, A6.4ERs or CERs from cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement or the mechanism established by Article 6, paragraph 4, of the Paris Agreement towards the achievement of its NDC.

16. Tables 5–9 summarize information on progress in implementing the NDC based on the indicators CO₂ emissions from fuel combustion and IPPU, reduction of energy-related CO₂ emissions per unit of GDP, share of non-fossil fuels in primary energy consumption, total installed capacity of wind and solar power, and forest stock volume taking into account the types of China's NDC targets, including, where relevant, quantitative values for the base year, implementation period, including the most recent year available, and target year, and information on the contribution of LULUCF and use of ITMOs, A6.4ERs and CERs towards the implementation and achievement of the NDC, as applicable.

Table 5

Summary of information on China's progress in implementing and achieving its nationally determined contribution based on carbon dioxide emissions from fuel combustion and industrial processes and product use
(kt CO₂ eq)

	<i>CO₂ emissions from fuel combustion and IPPU</i>	<i>Contribution of LULUCF, as applicable</i>	<i>ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable</i>	<i>Indicator adjusted for contribution of LULUCF and ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable</i>	<i>Trajectory target level</i>
2020	11 192 997.49	NA	NA	11 192 997.49	NA
2021	11 619 026.61	NA	NA	11 619 026.61	NA
Target level (before 2030)					NA

Sources: China's BTR1 and CTF table 4.

17. According to the most recent information on CO₂ emissions from fuel combustion and IPPU provided in CTF table 4, in 2021 China's CO₂ emissions from fuel combustion and IPPU were 11,619,026.61 kt CO₂ eq. The indicator in 2021 is 3.8 per cent above the emission level in 2020 and there are eight years remaining to achieve the peaking target.

Table 6

Summary of information on China's progress in implementing and achieving its nationally determined contribution based on the reduction of energy-related carbon dioxide emissions per unit of gross domestic product compared with the base-year level
(%)

	<i>Reduction of energy-related CO₂ emissions per unit of GDP</i>	<i>Contribution of LULUCF, as applicable</i>	<i>ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable</i>	<i>Indicator adjusted for contribution of LULUCF and ITMOs, A6.4ERs and/or CERs used towards NDC, as applicable</i>
Base year (2005)	100.0			
2020	49.1	NA	NA	49.1
2021	50.9	NA	NA	50.9
Target level (2030)				65.0

Sources: China's BTR1 and CTF table 4.

18. According to the most recent information on reduction of energy-related CO₂ emissions per unit of GDP provided in CTF table 4, in 2021 China's reduction of energy-related CO₂ emissions per unit of GDP compared with the 2005 (base-year) level was 50.9 per cent. The indicator is 14.1 percentage points above the level corresponding to the target level in 2030.

Table 7

Summary of information on China's progress in implementing and achieving its nationally determined contribution based on share of non-fossil fuels in primary energy consumption

(%)

	<i>Share of non-fossil fuels in primary energy consumption</i>	<i>ITMOs used towards NDC, as applicable</i>	<i>Indicator adjusted for ITMOs used towards NDC, as applicable</i>
Base year	NA		
2020	15.9	NA	15.9
2021	16.7	NA	16.7
2022	17.6	NA	17.6
2023	17.9	NA	17.9
Target level (2030)			25.0

Sources: China's BTR1 and CTF table 4.

19. According to the most recent information on the share of non-fossil fuels provided in CTF table 4, in 2023 China's share of non-fossil fuels in primary energy consumption was 17.9 per cent. The indicator is 7.1 percentage points below the level corresponding to the target level in 2030.

Table 8

Summary of information on China's progress in implementing and achieving its nationally determined contribution based on total installed capacity of wind and solar power

(GW)

	<i>Total installed capacity of wind and solar power</i>	<i>ITMOs used towards NDC, as applicable</i>	<i>Indicator adjusted for ITMOs used towards NDC, as applicable</i>
Base year	NA		
2020	534.96	NA	534.96
2021	635.04	NA	635.04
2022	758.05	NA	758.05
2023	1 047.83	NA	1 047.83
Target level (2030)			1 200.00

Sources: China's BTR1 and CTF table 4.

20. According to the most recent information on total installed capacity of wind and solar power provided in CTF table 4, in 2023 China's total installed capacity of wind and solar power was 1,047.83 GW. The indicator is 12.7 per cent below the level corresponding to the target level in 2030.

Table 9

Summary of information on China's progress in implementing and achieving its nationally determined contribution based on forest stock volume

(billion m³)

	<i>Forest stock volume</i>	<i>ITMOs used towards NDC, as applicable</i>	<i>Indicator adjusted for ITMOs used towards NDC, as applicable</i>
Base year (2005)	13.00		
2020	17.50	NA	17.50
2021	19.49	NA	19.49
Target level (2030)			19.00

Sources: China's BTR1 and CTF table 4.

21. According to the most recent information on forest stock volume provided in CTF table 4, in 2021 China's forest stock volume was 19.49 billion m³. The indicator is 49.9 per

cent above the base-year level and 2.6 per cent above the level corresponding to the target level in 2030.

22. China reported information on the actions and PaMs that support the implementation and achievement of its NDC. Table 10 provides a summary of the reported information on the key PaMs of China.

Table 10

Summary of information on key policies and measures reported by China

<i>Sector</i>	<i>Key PaMs^a</i>	<i>Estimate of achieved GHG emission reductions in 2021 (Mt CO₂)</i>
Policy framework and cross-sectoral measures	Outline of the 14th Five-Year Plan for National Economic and Social Development and Long-Range Objectives through the Year 2035 of the People's Republic of China	NE
	Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy	NE
	China's Mid-Century Long-Term Low Greenhouse Gas Emission Development Strategy	NE
	Action Plan for Carbon Dioxide Peaking Before 2030	NE
	Work Plan for Accelerating the Establishment of a Dual-Control System for Carbon Emissions	NE
	National carbon emissions trading market	NE
	National GHG voluntary emission reduction trading market	NE
Energy	Comprehensive energy conservation and emission reduction	NE
	Enhancing comprehensive CH ₄ utilization in the energy sector	NE
Energy efficiency	Improvement of industrial energy efficiency	5 100
Energy supply and renewables	Development of non-fossil energy	1 730
	Enhancement of natural gas supply capacity	390
	Development of hydropower	960
	Development of nuclear power	360
Transport	Development of green transport	NE
	Optimization of the transport structure	NE
	Encouragement of green mobility	NE
IPPU	Carbon peaking in steel industry	NE
	Carbon peaking in petrochemical industry	NE
	Carbon peaking in the building materials industry	NE
	Carbon peaking in the non-ferrous metals industry	NE
Agriculture	Resource utilization of livestock and poultry manure	NE
LULUCF	Consolidation and enhancement of forest carbon sinks	NE
	Consolidation and enhancement of grassland and wetland carbon sinks	NE
Waste	CH ₄ emission control from waste	NE
	Enhancement of CH ₄ collection and utilization in wastewater treatment	NE

Sector	Key PaMs ^a	Estimate of achieved GHG emission reductions in 2021 (Mt CO ₂)
Other	Building of a policy system to support green and low-carbon development through fiscal measures	NE
	Green finance evaluation scheme for banking and financial institutions	NE

Sources: China's BTR1 and CTF table 5.

^a Names of PaMs reproduced as reported in the unofficial English translation of China's BTR1.

23. The TERT noted that PaMs, actions and plans have contributed to increases in the share of non-fossil fuels in primary energy consumption, total installed capacity of wind and solar power, and forest stock volume. The PaMs with the largest estimated or expected impacts on indicator trends include the national carbon emissions trading market, covering 2,257 emitters in the energy sector; developing non-fossil-fuel energy sources, focused on accelerating uptake of renewable energy sources in the energy system, most notably wind, solar and hydropower; increasing industrial energy efficiency by implementing energy efficiency standards and equipment retrofits; developing a green and low-carbon transport system; and afforestation and improving forest management.

24. The TERT also noted that China, as a developing country with a population of 1.412 billion, is facing several challenges, such as economic development, livelihood improvement, pollution control and ecological protection, that also affect the implementation of its NDC. Fossil fuels, particularly coal, account for a relatively high proportion of the energy mix and the industry sector is energy and carbon intensive. These circumstances contribute to China's high total GHG emissions and its carbon intensity, which is above the global average. However, since 2005 a shift in China's industrial structure has been occurring, with the growth of the less emission-intensive tertiary sector and a decrease in primary industry's share in the country's GDP. Also, China is a leading country in terms of newly installed and cumulative capacity of non-fossil-fuel energy sources, which represented 49.6 per cent of the total installed capacity by the end of 2022, and in developing low-carbon transport solutions, most notably producing and selling new energy vehicles, that is battery, plug-in hybrid and fuel cell electric vehicles.

25. The TERT considers that, on the basis of a comparison of information on CO₂ emissions from fuel combustion and IPPU, reduction of energy-related CO₂ emissions per unit of GDP, the share of non-fossil fuels in primary energy consumption, the total installed capacity of wind and solar power, and forest stock volume in the reported years with the indicator level corresponding to the target level in 2030, where applicable, and taking into account information on mitigation actions:

(a) China is making progress towards achieving its NDC targets of increasing the share of non-fossil fuels in primary energy consumption to around 25 per cent by 2030 and achieving a total installed capacity of wind and solar power of over 1.2 billion kW by 2030 by implementing mitigation actions;

(b) China already achieved its NDC target of increasing forest stock volume by 6 billion m³ compared with the 2005 level by 2030 in 2021; however, the final achievement of the target will be considered on the basis of the first BTR that contains information on the end year of the NDC implementation period (2030);

(c) There are not yet enough data to sufficiently assess the Party's progress towards having CO₂ emissions peak before 2030 and decreasing energy-related CO₂ emissions per unit of GDP by over 65 per cent compared with the 2005 level by 2030, as it is early in the implementation period (data are available only for 2020–2021 for the indicators related to these targets). The TERT notes that regular monitoring of CO₂ emissions and the results of mitigation actions allows adjustments to be made as needed towards achieving these targets.

C. Consideration of the Party's support provided¹⁷

26. China does not consider itself subject to the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement and did not report information in its BTR1 on financial, technology transfer and development, and capacity-building support provided to developing country Parties under Articles 9–11 of the Paris Agreement (see para. 12 above).

D. Identification of areas of improvement¹⁸

27. During the technical expert review, the TERT identified areas of improvement in relation to China's implementation of Article 13 of the Paris Agreement, which are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 7 above.

E. Assistance in identifying capacity-building needs¹⁹

28. The TERT, in consultation with China, identified the following prioritized needs for capacity-building to facilitate the Party's reporting in its BTR relating to the flexibilities applied by it as per the MPGs:²⁰

- (a) Conducting trend uncertainty assessments;
- (b) Conducting statistical data collection and analysis of needs to report, and, depending on the results, determining whether to report in subsequent annual GHG inventories without applying flexibility provisions for relevant provisions;
- (c) Developing a QA/QC plan, and conducting QA/QC procedures in accordance with the plan;

29. Furthermore, in order to facilitate continuous improvement in reporting, the following prioritized capacity-building needs were identified during the review:

- (a) Enhancing the reporting of methods used for the GHG inventory, including the rationale for the choice of methods, EFs and parameters used and other underlying information regarding estimating emissions;
- (b) Improving the system for developing and transparently reporting country-specific parameters used for estimating GHG emissions from the energy sector, methods for estimating emissions and information reported on country-specific EFs used for the energy sector disaggregated by fuel type and category according to the 2006 IPCC Guidelines;
- (c) Collecting statistical data on fuel consumption for domestic and international navigation (as indicated in China's improvement plan);
- (d) Providing information by land-use category, carbon pool and year on the AD, EFs and parameters used in emission estimates, providing evidence of the 2006 IPCC guidelines' method followed, and detailing explanations on the underlying information used and its reference sources, and reconciliation approaches for data representation that were followed;
- (e) Developing and enhancing approaches, methodologies, analytical tools and skills, and data systems for reporting costs and non-GHG mitigation benefits of PaMs, their expected and achieved GHG emission reductions, and on how mitigation actions interact with each other, and for attributing impacts across overlapping actions and PaMs.

30. China also identified the capacity-building support needs in its BTR1 (chap. 5, pp.183–186).

¹⁷ As per para. 146(c) of the MPGs.

¹⁸ As per para. 146(d) of the MPGs.

¹⁹ As per para. 146(e) of the MPGs.

²⁰ For a complete list of the capacity-building needs identified by the TERT in consultation with the Party, see table 15 in document FCCC/ETF/TERR.1/2024/CHN/Add.1.

III. Conclusions and recommendations

31. The TERT conducted a technical expert review of the information reported in the BTR1, CRTs and CTF tables of China in accordance with the MPGs.

32. The areas of improvement identified by the TERT on the basis of the review of the consistency of the information reported by China with the MPGs are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 7 above.

33. The TERT considers that, on the basis of a comparison of information on CO₂ emissions from fuel combustion and IPPU, reduction of energy-related CO₂ emissions per unit of GDP, the share of non-fossil fuels in primary energy consumption, total installed capacity of wind and solar power, and forest stock volume in the reported years with the indicator level corresponding to the target level in 2030, where applicable, and taking into account information on mitigation actions, China is making progress towards achieving its NDC targets of increasing the share of non-fossil fuels in primary energy consumption to around 25 per cent by 2030 and achieving a total installed capacity of wind and solar power of over 1.2 billion kW by 2030. China already achieved its NDC target of increasing forest stock volume by 6 billion m³ compared with the 2005 level by 2030 in 2021; however, the final achievement of the target will be considered on the basis of the first BTR that contains information on the end year of the NDC implementation period (2030). The TERT notes that there are not yet enough data to sufficiently assess the Party's progress towards having CO₂ emissions peak before 2030 and decreasing CO₂ emissions per unit of GDP by over 65 per cent compared with the 2005 level by 2030 as it is early in the implementation period (data are available only for 2020–2021 for the indicators related to these targets). The TERT also notes that regular monitoring of CO₂ emissions and the results of mitigation actions allows adjustments to be made as needed towards achieving these targets.

34. The TERT further notes that PaMs, actions and plans have contributed to increases in the share of non-fossil fuels in primary energy consumption, the total installed capacity of wind and solar power, and forest stock volume. The PaMs with the largest estimated or expected impacts on indicator trends include the national carbon emissions trading market; developing non-fossil-fuel energy, focused on accelerating uptake of renewable energy sources in the energy system, most notably wind power, solar power and hydropower; increasing industrial energy efficiency; developing a green and low-carbon transport system; and afforestation and improving forest management.

35. In accordance with the MPGs, China did not report information on financial, technology development and transfer, or capacity-building support provided under Articles 9–11 of the Paris Agreement in its BTR1.²¹

36. Regarding the implementation of Article 13 of the Paris Agreement and transparency-related activities, China requires support for preparing subsequent NIRs and BTRs, including with regard to improving data collection and developing and maintaining a database with national AD and EFs, developing methodologies for evaluating mitigation effects of PaMs, analysing and reporting on climate change impacts and adaptation, and carrying out a cost–benefit analysis of actions related to financial, technology development and transfer, and capacity-building support needs. The amount of support needed in 2025–2030 totals USD 8.35 million, while support expected to be received in 2021–2026 through various channels is estimated at USD 6.47 million.

37. In consultation with China, the TERT identified reporting-related needs for capacity-building support relating to the flexibilities applied by the Party as per the MPGs that could facilitate the Party's preparation of subsequent BTRs. For China, the main reporting-related needs for capacity-building support are for preparing the NIR, developing methodologies for evaluating mitigation effects of PaMs, and reporting on adaptation, and financial, technology and capacity-building support needs.

²¹ As per para. 118 of the MPGs.

Annex

Documents and information used during the review

A. Reference documents

BTR1 of China. Available at <https://unfccc.int/first-biennial-transparency-reports>.

BTR1 CTF tables of China. Available at <https://unfccc.int/first-biennial-transparency-reports>.

CRTs of China. Available at <https://unfccc.int/first-biennial-transparency-reports>.

“Guidance for operationalizing the modalities, procedures and guidelines for the enhanced transparency framework referred to in Article 13 of the Paris Agreement”. Decision 5/CMA.3. FCCC/PA/CMA/2021/10/Add.2. Available at <https://unfccc.int/documents/460951>.

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IPCC. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Geneva: IPCC. Available at <https://www.ipcc.ch/publication/2013-supplement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories-wetlands/>.

IPCC. 2019. *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*. E Buendia, K Tanabe, et al. (eds.). Geneva: IPCC. Available at <https://www.ipcc-nggip.iges.or.jp/public/2019rf/>.

“Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement”. Annex to decision 18/CMA.1. FCCC/PA/CMA/2018/3/Add.2. Available at <https://unfccc.int/documents/193408>.

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B. Additional information provided by the Party

Responses to questions during the review were received from Tian Wang, Beiyang Zhang and Danhui Xu (National Center for Climate Change Strategy and International Cooperation of China), including additional material. The following references were provided by China and may not conform to UNFCCC editorial style as some have been reproduced as received:

China Statistical yearbook 2022, compiled by the National Bureau of Statistics. China statistics press, 2022. <https://www.stats.gov.cn/sj/ndsj/2022/indexeh.htm>

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Yu, Y., Huang, Y., & Zhang, W. 2012. *Modeling soil organic carbon change in croplands of China, 1980–2009*. Global and Planetary Change, 82, 115-128. doi:10.1016/j.gloplacha.2011.12.005

Huang, Y., Yu, Y., Zhang, W., Sun, W., Liu, S., Jiang, J., ... & Yang, Z. 2009. *Agro-C: A biogeophysical model for simulating the carbon budget of agroecosystems*. Agricultural and forest meteorology, 149(1), 106-129. doi:10.1016/j.agrformet.2008.07.013

Ministry of Natural Resources. 2020. *2020 Classification Guidelines for Land and Sea Use for Territorial Space Survey, Planning, and Regulation*. Available at <https://view.officeapps.live.com/op/view.aspx?src=https://www.gov.cn/zhengce/zhengceku/202311/P020231127391946850971.doc&wdOrigin=BROWSELINK>

National Center for Climate Change Strategy Research and International Cooperation, *Guidelines for Greenhouse Gas Emission Accounting and Reporting for China's Chemical Manufacturing Enterprises (Trial)* available at:

<https://www.ndrc.gov.cn/xxgk/zcfb/tz/201311/W020190905508184972266.pdf>

Ministry of Natural Resources of the People's Republic of China. 2020. *Guidelines for Classification of Land and Sea for Territorial Space Investigation, Planning, and Use Control (Trial)*. Beijing: Ministry of Natural Resources of the People's Republic of China. available at

<https://view.officeapps.live.com/op/view.aspx?src=https://www.gov.cn/zhengce/zhengceku/202311/P020231127391946850971.doc&wdOrigin=BROWSELINK>

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National Bureau of Statistics of China, *What is a sample survey*, available at:

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State Administration for Market Regulation, Standardization Administration of China, *Requirements of the Greenhouse Gas Emission Accounting and Reporting — Part 5: Iron and Steel Production Enterprises*, available at:

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