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

Summary

This report presents the results of the technical expert review of the first biennial transparency report of Japan, 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 8 to 12 September 2025 in Tokyo.

* 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

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
A6.4ER	emission reduction under Article 6, paragraph 4, of the Paris Agreement
ASEAN	Association of Southeast Asian Nations
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CRT	common reporting table
CTF	common tabular format
DAC	Development Assistance Committee
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_2O	nitrous oxide
NA	not applicable
NDC	nationally determined contribution
NE	not estimated
NF_3	nitrogen trifluoride
NID	national inventory document
OECD	Organisation for Economic Co-operation and Development
PaMs	policies and measures
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
SF_6	sulfur hexafluoride
TERT	technical expert review team
WM	‘with measures’

I. Introduction and summary

A. Introduction

1. This report covers the technical expert review of the BTR1 of Japan. The review was organized by the secretariat and conducted by the TERT in accordance with the MPGs,[1] particularly chapter VII thereof.

2. A draft version of this report was transmitted to the Government of Japan, which provided comments that were taken into account, as appropriate, in this final version of the report.[2]

3. The review was conducted as an in-country review from 8 to 12 September 2025 in Tokyo by the following team of nominated experts from the UNFCCC roster of experts: Joel Bengtsson (Sweden), Matej Gasperic (Serbia), Britta Maria Hoem (Norway), Yamikani Idriss (Malawi), Carmen Teresa Meneses Lopez (Bolivarian Republic of Venezuela), Eray Ozdemir (Türkiye), Mauro Meirelles de Oliveira Santos (Brazil) and Amr Sobhy (Egypt). Joel Bengtsson and Mauro Meirelles de Oliveira Santos were the lead reviewers. The review was coordinated by Pedro Torres (secretariat).

B. Scope

4. The TERT conducted a technical expert review of the information reported in the BTR1 of Japan 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 (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) Consideration of the support provided by the Party, as relevant (see chap. II.C below);

(d) Identification of areas of improvement[3] for the Party related to implementation of Article 13 of the Paris Agreement (see chap. II.D below).

C. Summary

5. Japan submitted its BTR1 on 31 October 2024, before the deadline of 31 December 2024 mandated in decision 18/CMA.1. Japan submitted its NID as a stand-alone document on 12 April 2024, before the deadline of 31 December 2024. Japan submitted its CRTs on 4 December 2024, before the deadline of 31 December 2024, and CTF tables on 31 October 2024, before the deadline of 31 December 2024.[4]

6. 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.[5]

[1] Decision 18/CMA.1, annex.
[2] As per para. 162(e) of the MPGs.
[3] As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs.
[4] The technical expert review was conducted on the basis of the versions of the BTR and CTF NDC tables submitted on 29 May 2025 and 2 June 2025 respectively.
[5] Contained in document FCCC/ETF/TERR.1/2024/JPN/Add.1, available at https://unfccc.int/first-biennial-transparency-reports.

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

7. Japan did not consider itself subject to the reporting obligations applicable to developing country Parties pursuant to Article 13, paragraph 10, of the Paris Agreement. Accordingly, the Party did not report information on support needed and received for implementing Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building.

II. Technical expert review[6]

A. Review of the consistency of the submitted information with the modalities, procedures and guidelines[7]

1. National inventory report[8]

8. The TERT assessed the information reported in the BTR1 of Japan and identified areas of improvement relating to consistency with the MPGs, which are described in tables 3–7 of the assessment tables referred to in paragraph 6 above and summarized in table 1.

[6] As per para. 187 of the MPGs.
[7] As per para. 146(a) of the MPGs.
[8] As per para. 150(a) of the MPGs.

Table 1
Information reported in Japan's national inventory report and review of consistency with the modalities, procedures and guidelines

Element	*Elements of information to be reported*	*Response and its summary, as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
Submission type (para. 12 of the MPGs)	Has the national inventory report been submitted as a stand-alone document?	Yes	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?	1990–2022, 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 Fifth Assessment Report of the Intergovernmental Panel on Climate Change?	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?	CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3	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?	Yes	No areas of improvement were identified
	Has the Party reported indirect N_2O emissions from sources other than those in the agriculture and LULUCF sectors as a memo item?	Yes	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 2006 IPCC Guidelines?	Partly	5.A.1, 5.A.2, 5.A.3, 6.L.2
	Has the Party used other IPCC methodological guidance?	Yes, the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* and the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*	No areas of improvement were identified

Element	*Elements of information to be reported*	*Response and its summary, as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
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 2 and a 95 per cent threshold for level and trend assessment for the starting year (1990) and the latest reporting year (2022) and with and without LULUCF	No areas of improvement were identified
Time-series consistency and recalculations (paras. 26–28 and 43 of the MPGs)	Has the Party reported a consistent time series?	Yes	No areas of improvement were identified
	Has the Party provided justification and explanatory information for recalculations?	Yes	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?	Yes, including level and trend uncertainty, reported using approach 2 for 1990 and the latest reporting year (2022)	No areas of improvement were identified
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?	Yes, including information on the inventory agency responsible for implementing QA/QC, an inventory QA/QC plan, general QC procedures and category-specific QC for key categories and for individual categories for which significant methodological changes and/or data revisions have occurred	No areas of improvement were identified
Assessment of completeness (paras. 30–33, 45, 47 and 50 of the MPGs)	Have any areas of improvement for lack of completeness been identified for the following sectors?		
	Energy	Yes	No areas of improvement were identified
	IPPU	Yes	No areas of improvement were identified
	Agriculture	Yes	No areas of improvement were identified
	LULUCF	Yes	No areas of improvement were identified
	Waste	Yes	No areas of improvement were identified

Element	*Elements of information to be reported*	*Response and its summary, as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
Threshold for reporting significant categories (para. 32 of the MPGs)	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?	Yes	No areas of improvement were identified
Methodologies, emission factors, parameters and activity data (paras. 39–40 and 53–56 of the MPGs)	Has information been reported on categories, gases, methodologies (including the rationale for selecting them), emission factors and activity data at a disaggregated level for the following sectors?		
	Energy	Partly	3.E.1
	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	NA
	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?	Yes	NA
	IPPU	Partly	4.I.1, 4.I.2, 4.I.3, 4.I.4
	Agriculture	Partly	5.A.4, 5.A.5
	LULUCF	Partly	6.L.1, 6.L.3, 6.L.4, 6.L.5
	Did the Party provide information on the approach taken to address emissions and subsequent removals from natural disturbances on managed land in a manner consistent with IPCC guidance, and indicate whether the estimates are included in national totals?	NA	NA
	Did the Party provide supplementary information on the approach to reporting emissions and removals	Yes	No areas of improvement were identified

Element	*Elements of information to be reported*	*Response and its summary, as relevant*	*ID#(s) for the area(s) of improvement identified*[a]
	from harvested wood products in accordance with IPCC guidance other than the production approach, and provide supplementary information on emissions and removals from harvested wood products estimated using the production approach?		
	Waste	Partly	7.W.1, 7.W.2

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

2. Information necessary to track progress in implementing and achieving the nationally determined contribution[9]

9. The TERT assessed the information reported in the BTR1 of Japan 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 6 above and summarized in table 2.

Table 2
Information reported in Japan's submission

Topic	*ID#(s) for the area(s) of improvement identified*[a]
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)	No areas of improvement were identified
Summary of GHG emissions and removals (para. 91 of the MPGs)	No areas of improvement were identified
Projections of GHG emissions and removals (paras. 92–102 of the MPGs)	13.1

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

3. Financial, technology development and transfer, and capacity-building support provided[10]

10. According to paragraph 118 of the MPGs, developed country Parties shall provide information pursuant to Article 13, paragraph 9, of the Paris Agreement in accordance with the MPGs contained in chapter V of the annex to decision 18/CMA.1. Other Parties that provide support should also provide such information and, in doing so, are encouraged to use the same MPGs contained in that chapter.

11. Pursuant to Article 13, paragraph 9, of the Paris Agreement, developed country Parties shall and other Parties that provide support should provide information on financial, technology development and transfer, and capacity-building support provided to developing country Parties under Articles 9–11 of the Paris Agreement.

12. Japan considered itself subject to the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement and, in accordance with the MPGs, reported information on financial, technology development and transfer, and capacity-building support provided under Articles 9–11 of the Paris Agreement in its BTR1.[11]

13. The TERT assessed the information reported in the BTR1 of Japan and identified areas of improvement relating to consistency with the MPGs, which are described in tables 17 and 20 of the assessment tables referred to in paragraph 6 above and summarized in table 3.

[9] As per para. 150(b) of the MPGs.
[10] As per para. 150(c) of the MPGs.
[11] As per para. 118 of the MPGs.

Table 3
Review of the consistency of the information on financial, technology development and transfer, and capacity-building support reported in Japan's submission with the modalities, procedures and guidelines

Topic	*ID#(s) for the area(s) of improvement identified*[a]
National circumstances and institutional arrangements (paras. 119–120 of the MPGs)	No areas of improvement were identified
Underlying assumptions, definitions and methodologies (paras. 121–122 of the MPGs)	No areas of improvement were identified
Information on financial support provided under Article 9 of the Paris Agreement (paras. 123–124 of the MPGs)	17.1
Information on support for technology development and transfer provided under Article 10 of the Paris Agreement (paras. 126–127 of the MPGs)	No areas of improvement were identified
Information on capacity-building support provided under Article 11 of the Paris Agreement (paras. 128–129 of the MPGs)	20.1

[a] See document FCCC/ETF/TERR.1/2024/JPN/Add.1.

B. Consideration of the Party's implementation and achievement of its nationally determined contribution[12]

14. In considering Japan's progress in implementing and achieving its NDC, the TERT noted that it is an economy-wide NDC,[13] with a single-year absolute target of reducing net GHG emissions by 46 per cent by 2030 compared with the 2013 level, including indirect CO_2 emissions and excluding emissions from LULUCF in the base year. The target-year level takes into account the contribution of LULUCF calculated using an activity-based approach and use of ITMOs under Article 6 of the Paris Agreement.

15. The indicator that Japan selected to track progress in implementing and achieving its NDC is described in table 4.

Table 4
Description of the indicator selected by Japan to track progress in implementing and achieving its nationally determined contribution

NDC target	*Indicator*	*Description*
Reducing net GHG emissions by 46 per cent by 2030 compared with the 2013 level	Net GHG emissions	Economy-wide net GHG emissions, including indirect CO_2 emissions and excluding emissions from LULUCF in the base year, but taking into account the contribution of LULUCF calculated using an activity-based approach and use of ITMOs under Article 6 of the Paris Agreement in the target year

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

16. The TERT noted that the contribution of LULUCF to achieving the NDC is not included in the Party's base-year level, while the target-year level takes into account the contribution of LULUCF calculated using an activity-based approach. Japan aims to contribute to international emission reductions and removals at the level of a cumulative total of approximately 100 million t CO_2 by fiscal year 2030 through public–private collaborations. Japan will apply corresponding adjustments to appropriately account for ITMOs used towards achieving its NDC.

[12] As per para. 146(b) of the MPGs.

[13] The consideration of the Party's implementation and achievement of its NDC is in the context of the NDC submitted by Japan on 18 February 2025.

17. Table 5 summarizes information on progress in implementing the NDC based on the indicator annual total net GHG emissions. The implementation period of the NDC is 1 April 2021 to 31 March 2031.

Table 5
Summary of information on Japan's progress in implementing and achieving its nationally determined contribution
(kt CO_2 eq)

	Net GHG emissions	*Contribution of LULUCF, as applicable*	*ITMOs, A6.4ERs and/or certified emission reductions used towards NDC, as applicable*	*Indicator adjusted for contribution of LULUCF and ITMOs, A6.4ERs and/or certified emission reductions used towards NDC, as applicable*[b]
NDC base year (2013)	1 407 337.90	NA	NA	NA
2021	1 110 412.56	–53 627.10	0	1 110 412.56
2022	1 085 277.35	–50 180.97	0	1 085 277.35
Target level (2030)[a]				760 000.00

Sources: Japan's BTR1 and CTF table 4.
[a] Target level corresponds to an unconditional NDC target.
[b] The indicator (annual total net GHG emissions) is already adjusted for the contribution of LULUCF.

18. According to the most recent information on net GHG emissions provided in CTF table 4, in 2022 Japan's net GHG emissions were 1,085,277.35 kt CO_2 eq. The TERT noted that, in 2022, the contribution of LULUCF, calculated using the activity-based approach, was –50,180.97 kt CO_2 eq. The indicator is 22.9 per cent (322,060.55 kt CO_2 eq) below the emission level corresponding to the base-year level and 42.8 per cent (325,277.35 kt CO_2 eq) above the emission level corresponding to the target level in 2030.

19. Japan reported information on the actions and PaMs that support the implementation and achievement of its NDC. Table 6 provides a summary of the reported information on the key PaMs of Japan.

Table 6
Summary of information on key policies and measures reported by Japan

Sector	*Key PaMs*	*Estimate of expected GHG emission reductions in 2030 (kt CO_2 eq)*	*Estimate of achieved GHG emission reductions in 2022 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	Promotion of the Joint Crediting Mechanism	100 000	14 978
	Activation of the J-Credit Scheme	15 000	8 890
	Transition to decarbonized lifestyles	9 488	7 106
Energy			
Energy efficiency	Reduction of CO_2 emission intensity in power sectors	340 000	139 400
	Promotion of the introduction of facilities and equipment with high energy-saving performance (across industries)	36 197	23 511
	Diffusion of high-efficiency energy-saving equipment	15 613	17 565
	Improvement of the energy efficiency of buildings	13 650	5 083
	Improvement of the energy efficiency of equipment through the Top Runner Programme (commercial and residential)	13 957	8 647
Energy supply and renewables	Maximum introduction of renewable energy	242 880	171 760
	Introduction of energy conservation and renewable energy in water supply and sewage (sewage systems)	1 300	NE

Sector	*Key PaMs*	*Estimate of expected GHG emission reductions in 2030 (kt CO_2 eq)*	*Estimate of achieved GHG emission reductions in 2022 (kt CO_2 eq)*
Transport	Diffusion of next-generation vehicles, improvement of fuel efficiency	26 740	9 553
	Improvement of efficiency of truck transportation	11 800	7 458
	Decarbonization of railways	2 600	3 504
IPPU	Reduction of emission of fluorinated gases (HFCs, PFCs, SF_6, NF_3)	55 380	10 540
Agriculture	Reduction of CH_4 emissions in paddy fields	1 040	460
	Reduction of N_2O emissions associated with fertilization	244	64
LULUCF	Increase of forest carbon sinks	38 000	45 680
	Increase of carbon removals by agricultural soils	8 500	3 000
	Promotion of urban greening	1 240	1 470
Waste	Reduction of waste incineration	7 099	4 170
	Diffusion of biomass plastics	2 090	NE
	Advancement of incineration at sewage sludge incineration facilities	780	NE

Sources: Japan's BTR1 and CTF table 5.

20. The TERT noted that the GHG emission trend remained relatively stable from 1990 to 2013. Since 2013, PaMs have started to have an impact on GHG emission reductions, specifically in the energy sector, with the increased deployment of renewable energy and the implementation of energy efficiency measures contributing to the reductions. In 2022, total emissions were 8.28 t CO_2 eq/capita, representing an 11.5 per cent decrease compared with the 1990 level and a 19.8 per cent decrease compared with the 2013 level, indicating progress in decoupling emissions from economic growth and energy demand.

21. Japan is a highly industrialized, energy-intensive economy with limited domestic fossil fuel resources, making energy security and sustainable development key priorities. The country's vulnerability to natural disasters, highlighted by the Great East Japan Earthquake and the Fukushima nuclear accident in 2011, has driven a transformation of its energy system, including diversification of energy sources and increased deployment of renewables. Japan has advanced technology and strong research capacity, thus supporting its ongoing efforts to develop solutions for energy efficiency and low-carbon technologies that can contribute to the achievement of its NDC.

22. Japan reported projections for 2030 only under the WM scenario.[14] The WM scenario reported by the Party includes PaMs implemented and adopted until 2022. Japan did not report 'with additional measures' or 'without measures' scenarios and provided its rationale for not reporting projections under those scenarios. It explained that it is not possible to accurately estimate emissions under a 'without measures' scenario prior to the implementation of PaMs as projections of key indicators already reflect the effects of existing PaMs on emission reductions, and it is difficult to isolate the effects of interrelated PaMs. It also explained that a 'with additional measures' scenario was not provided because Japan considers it more important to ensure the continued implementation of the Plan for Global Warming Countermeasures, which it believes will ensure more certainty in achieving the emission reduction target for fiscal year 2030. PaMs that are not included in the Plan for Global Warming Countermeasures are currently not planned.

[14] Note that, as per para. 93 of the MPGs, projections shall not be used to assess progress towards the implementation and achievement of an NDC under Article 4 of the Paris Agreement unless the Party has identified a reported projection as its baseline.

23. The projected emission level is presented in table 7. The TERT noted that information on GHG emission projections was not used in considering Japan's progress in implementing its NDC.

Table 7
Summary of greenhouse gas emission projections for Japan

	GHG emissions (kt CO_2 eq/year)	*Change in relation to 2020 level (%)*	*Change in relation to 2022 level (%)*
Inventory data 2020	1 084 037.75		
Inventory data 2022	1 082 283.52	–0.2	
WM projections for 2030	776 000.00	–28.4	–28.3

Sources: Japan's BTR1 and CTF tables 6–9.
Note: The projections are for GHG emissions with LULUCF and including indirect CO_2 emissions.

24. The TERT noted that, on the basis of a comparison of information on the GHG inventory for the most recent reported year (i.e. 2022) with the target level, there needs to be a reduction of 325,277 kt CO_2 eq to reach the target level in 2030 compared with the level in 2022.

C. Consideration of the Party's support provided[15]

25. Japan reported information on financial, technology development and transfer, and capacity-building support provided to developing country Parties under Articles 9–11 of the Paris Agreement as per the reporting obligations applicable to developed country Parties pursuant to Article 13, paragraph 9, of the Paris Agreement (see para. 12 above).

26. In its BTR1 Japan reported information on national circumstances and institutional arrangements relevant to reporting on the provision and mobilization of support. The Party reported information on the systems and processes used to identify, track and report on support provided; challenges and limitations; experience and good practices relating to public policy and regulatory frameworks for private climate financing and investment; and efforts to enhance the comparability and accuracy of the information reported on financial support provided.

27. Japan described its national circumstances and institutional arrangements relevant to the provision of technology development and transfer, and capacity-building support. Japan developed the Proactive Diplomatic Strategy for Countering Global Warming (Actions for Cool Earth) in November 2013 as a framework for providing support to developing countries. The Ministry of Foreign Affairs of Japan gathers data on support provided by relevant ministries and institutions, and compiles the information on financial, technology development and transfer, and capacity-building support in the field of climate change. The support is implemented by relevant government ministries and institutions, including the Ministry of Foreign Affairs; Ministry of Finance; Ministry of Agriculture, Forestry and Fisheries; Ministry of Economy, Trade and Industry; Ministry of the Environment; and Japan International Cooperation Agency. Private finance is mainly mobilized by co-finance with the Japan Bank for International Cooperation and by trade insurance provided by Nippon Export and Investment Insurance.

28. Japan's BTR1 contains key information on underlying assumptions, methodologies and definitions used by the Party to identify and/or report information on financial support provided. The main source of Japan's climate finance is its official development assistance reported to OECD DAC. The climate-specific part of bilateral official development assistance is identified using the OECD DAC Rio markers (climate change mitigation and climate change adaptation). In accordance with the OECD Rio markers, Japan scores 100 per cent for projects whose climate change objective is "principal", and 50 per cent for projects whose climate change objective is "significant". Climate finance provided as core support to multilateral organizations is imputed using climate shares reported by OECD DAC or based

[15] As per para. 146(c) of the MPGs.

on the attribution percentage calculated by a given international organization based on its budget allocation percentage for climate action.

29. For reporting information on technology development and transfer, and on capacity-building support provided, Japan also uses the guidance issued by OECD DAC. The BTR1 provides information on how flows are reported consistently across different government agencies. In line with its Plan for Global Warming Countermeasures, Japan is promoting initiatives related to technology development and transfer, and capacity-building support, and expanding cooperation based on collaboration with partner countries. It is also promoting the international deployment of technologies, as well as improving the environment for market creation, human resources development, establishing and strengthening institutions, and provision of financial support.

1. Financial support provided under the Article 9 of the Paris Agreement

(a) Bilateral, regional and other channels

30. Japan provided USD 20,151.56 million of financial support through bilateral, regional and other channels in the biennium 2021–2022. The financial support provided through bilateral, regional and other channels was allocated to the following sectors: energy (22.6 per cent), transport (44.2 per cent), water and sanitation (8.6 per cent), health and population (7.0 per cent) and other (17.5 per cent).[16] The projects, programmes or activities that received financial support are related to promoting renewable energy, increasing energy efficiency and conservation, improving public transportation systems, preventing disasters through early warning systems, developing desalination systems and introducing irrigation systems in partner countries.

31. Table 8 summarizes information on financial support provided by the Party through bilateral, regional and other channels by type of support.

Table 8
Summary of financial support provided through bilateral, regional and other channels in 2021–2022 by Japan

	Amount (climate-specific) (face value – USD million)				*Share of total for bilateral, regional and other channels (%)*
Type of financial instrument	*Adaptation*	*Mitigation*	*Cross-cutting*	*Total*	
Grant	1 841.35	394.07	262.04	2 497.45	12.4
Concessional loan	3 937.33	9 621.81	360.30	13 919.44	69.1
Non-concessional loan	783.61	1 782.73	111.28	2 677.62	13.3
Equity	0.00	174.55	3.50	178.05	0.9
Guarantee	0.00	0.00	0.00	0.00	0.0
Insurance	188.87	682.09	0.00	870.96	4.3
Other	0.00	8.05	0.00	8.05	0.0
Total	**6 751.16**	**12 663.29**	**737.11**	**20 151.56**	**100.0**
Share of total for bilateral, regional and other channels (%)	**33.5**	**62.8**	**3.7**	**100.0**	**–**

Sources: Japan's BTR1 and CTF table III.1, and information provided by the Party during the review.

(b) Multilateral channels

32. Japan provided USD 2,260.98 million of financial support through multilateral channels in the biennium 2021–2022. The financial support provided through multilateral channels was allocated to the following sectors: cross-cutting (99.06 per cent), agriculture (0.14 per cent), energy (0.11 per cent), forestry (0.03 per cent) and other (0.65 per cent).

[16] Calculated by the TERT on the basis of information reported in CTF table III.1 (see ID# 17.1 in document FCCC/ETF/TERR.1/2024/JPN/Add.1).

33. Table 9 summarizes information on financial support provided by the Party through multilateral channels by type of support.

Table 9
Summary of financial support provided through multilateral channels in 2021–2022 by Japan
(USD millions)

	Climate-specific inflows (face value)			
Institution	*Adaptation*	*Mitigation*	*Cross-cutting*	*Total*
Adaptation Fund	4.95	0.00	0.00	4.95
African Development Bank	0.00	0.00	33.67	33.67
African Development Fund	0.00	0.00	134.77	134.77
Asian Development Fund	0.00	0.00	87.12	87.12
Capacity-building Initiative for Transparency	0.00	0.74	0.00	0.74
Climate Technology Centre Network	0.00	0.00	1.89	1.89
Global Environment Facility	0.00	0.00	215.72	215.72
Green Climate Fund	0.00	0.00	689.16	689.16
Inter-American Investment Corporation	0.00	0.00	0.78	0.78
International Finance Corporation	0.00	0.00	190.25	190.25
UNFCCC	0.00	0.00	9.00	9.00
UNFCCC trust fund for supplementary activities	0.00	0.00	1.51	1.51
United Nations Environment Programme	0.00	2.31	1.30	3.61
World Bank (International Bank for Reconstruction and Development)	0.00	3.00	58.88	61.88
World Bank (International Development Association)	0.00	0.00	797.83	797.83
Other[a]	14.70	0.73	12.68	28.12
Total	**19.65**	**6.78**	**2 234.56**	**2 260.98**
Share of total (%)	**0.9**	**0.3**	**98.8**	**100.0**

Sources: Japan's BTR1 and CTF table III.2.
[a] Including Acid Deposition Monitoring Network in East Asia, Climate and Clean Air Coalition, Intergovernmental Panel on Climate Change, International Fund for Agricultural Development, International Renewable Energy Agency, International Treaty on Plant Genetic Resources for Food and Agriculture, International Tropical Timber Organization, Multilateral Fund for the Implementation of the Montreal Protocol, IPCC Task Force on National GHG Inventories/Technical Support Unit, United Nations Educational, Scientific and Cultural Organization, and United Nations Industrial Development Organization.

2. Technology development and transfer support provided under the Article 10 of the Paris Agreement

34. Japan implemented measures or activities related to technology development and transfer, including activities undertaken by both the public and the private sector, that benefited developing country Parties. The Party promoted cooperation through initiatives such as the ASEAN-Japan Environmental Cooperation Initiative, the Asia Zero Emission Community and the Innovation for Cool Earth Forum, and supported the overseas deployment of decarbonization technologies and energy infrastructure. Furthermore, Japan provided support at different stages of the technology cycle, including for feasibility studies and basic planning for renewable energy and energy-efficiency projects, and promoted technology innovation through the demonstration and diffusion of advanced technologies such as carbon recycling, guided by its 2023 carbon recycling road map. The Party also encouraged private sector engagement through financial instruments, including the 2023 loan insurance scheme to support overseas decarbonization projects and the Loan Insurance for Green Innovation initiative, which aims to mobilize private finance for low-carbon and green technologies, including in cooperation with Asian development finance institutions. Japan employed a collaborative approach to research, development and deployment and shared knowledge generated through its support, including through joint research on an advanced ocean thermal energy conversion project in Malaysia and through regional research and knowledge-sharing activities under the Asia-Pacific Network for Global Change Research.

35. Japan supported measures and activities related to technology development and transfer that focused mainly on promoting renewable energy and sustainable forest

management practices, planting drought-resistant and short-duration crops, and increasing energy efficiency and conservation in partner countries. Such measures and activities covered the following target sectors: other (25.9 per cent), agriculture (19.7 per cent), water and sanitation (15.3 per cent), transport (10.7 per cent), cross-cutting (7.6 per cent), energy (6.5 per cent), disaster risk reduction (5.9 per cent), forestry (5.7 per cent) and industry (2.7 per cent). Most of the technology development and transfer support provided related to adaptation (69.0 per cent), followed by cross-cutting (20.0 per cent) and mitigation (11.0 per cent). For the reporting period 2021–2022, most of the measures or activities aimed at supporting technology development and transfer were reported as completed. The recipient entities for Japan's technology development and transfer support were operating at the national, regional or global level.

3. Capacity-building support provided under Article 11 of the Paris Agreement

36. Japan provided capacity-building support to developing country Parties for mitigation, adaptation and cross-cutting needs. Japan's capacity-building support responded to the existing and emerging capacity-building needs, priorities and gaps of developing country Parties by following the principles of national ownership, stakeholder participation, country-driven demand and cooperation between donors and across programmes. The Party ensures that its capacity-building support responds to the existing and emerging needs of developing countries by fostering partnerships, strengthening institutions and implementing innovative solutions in line with article 3 of the Act on Promotion of Global Warming Countermeasures, which mandates that Japan cooperate internationally on tackling climate change. Under the Plan for Global Warming Countermeasures, Japan has expanded its collaboration with partner countries to create enabling environments for institutional development, human resources training and market creation. In 2023, Japan also launched the Assistance Package to Promote Investments for Global Actions Toward the Achievement of the Paris Agreement Goals, designed to address gaps in achieving those goals by promoting investment in decarbonization and adaptation.

37. Japan ensures stakeholder involvement and engagement and the sharing of lessons learned and best practices as part of capacity-building efforts in developing countries. Japan significantly contributes to the capacity-building of researchers and policymakers, mainly in developing countries within the Asia-Pacific region, by financially supporting the Global Adaptation Network and the Asia-Pacific Adaptation Network and by supporting the international joint research and development programmes on various cross-sectoral issues, such as climate change and biodiversity. During fiscal year 2022, the Global Adaptation Network and the Asia-Pacific Adaptation Network continued to provide various seminars and workshops and to share information on websites that provide knowledge and offer lessons for adaptation in developing countries. In addition, Japan promotes human resources development in the field of climate change by supporting the construction and institutional development of the Pacific Climate Change Centre in cooperation with the secretariat of the Pacific Regional Environment Programme, and the strengthening of the Climate Change International Technical and Training Centre in Thailand. To accelerate the development of early warning systems by the private sector, the Government of Japan established the Public-Private Partnership for the Development of Early Warning Systems as a framework for public–private partnerships in 2023 and aims to establish the systems in more than half of ASEAN countries by 2025, beginning with the development of locally adapted prototypes within the region.

38. Japan supported capacity-building measures or activities that focused mainly on strengthening institutional arrangements, improving national data management systems, promoting renewable energy, enhancing energy efficiency and conservation, and strengthening early warning systems in partner countries. Most of the capacity-building measures or activities related to adaptation (66.4 per cent), followed by cross-cutting (19.1 per cent) and mitigation (14.5 per cent). For the reporting period 2021–2022, most of the capacity-building measures or activities were reported as completed. The recipient entities for Japan's capacity-building support were operating at the national, regional or global level.

D. Identification of areas of improvement[17]

39. During the technical expert review, the TERT identified areas of improvement in relation to Japan'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 6 above.

III. Conclusions and recommendations

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

41. The areas of improvement identified by the TERT on the basis of the review of the consistency of the information reported by Japan with the MPGs are summarized in chapter II.A above and included in the assessment tables referred to in paragraph 6 above.

42. The TERT considers that, on the basis of a comparison of information on the GHG inventory for the most recent reported year (i.e. 2022) with the base-year level and target level, and taking into account information on mitigation actions, Japan is making progress towards its NDC target by implementing mitigation actions, noting that a reduction of 325,277 kt CO_2 eq is needed to reach the target level in 2030 compared with the level in 2022.

43. The TERT notes that the GHG emission trend remained relatively stable from 1990 to 2013 and that PaMs have started to have an impact on GHG emission reductions, particularly within the energy sector. Since 2013, a sustained decline in emissions has been observed, driven primarily by the expansion of renewable energy and the enhancement of energy efficiency. In 2022, Japan's per capita emissions stood at 8.28 t CO_2 eq, representing an 11.5 per cent reduction compared with the 1990 level and a 19.8 per cent reduction compared with the 2013 level. These trends demonstrate tangible progress towards decoupling GHG emissions from economic growth and energy demand.

44. Japan continued to provide financial support through bilateral, regional and other channels and through multilateral channels to developing countries. The financial support through bilateral, regional and other channels in 2021–2022 totalled USD 20,151.56 million. Similarly, the financial support provided through multilateral channels in 2021–2022 amounted to USD 2,260.98 million.

45. Japan continued to provide support for technology development and transfer, and capacity-building. Priority for technological support was given to projects and programmes in the target areas of renewable energy, energy efficiency and conservation, sustainable forest management practices, and drought-resistant and short-duration crops. Priority for capacity-building support was given to projects and programmes aimed at strengthening institutional arrangements, improving national data management systems, promoting renewable energy, enhancing energy efficiency and conservation, and strengthening early warning systems.

[17] As per para. 146(d) of the MPGs.

Annex

Documents and information used during the review

A. Reference documents

BTR1 of Japan. Available at https://unfccc.int/first-biennial-transparency-reports.

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

CRTs of Japan. 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.

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl.

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/184700.

B. Additional information provided by the Party

Responses to questions during the review were received from Naofumi Kosaka (National Institute for Environmental Studies) and Takashi Morimoto (Mitsubishi UFJ Research and Consulting Co., Ltd), including additional material. The following references were provided by Japan and may not conform to UNFCCC editorial style as some have been reproduced as received:

Akiyama et al. 2006. *Estimations of emission factors for fertilizer-induced direct N_2O emissions from agricultural soils in Japan: Summary of available data.* Soil Science and Plant Nutrition (2006) 52, 774–787. Available at doi: 10.1111/j.1747-0765.2006.00097.x

Akiyama et al. 2010. *Evaluation of effectiveness of enhanced-efficiency fertilizers as mitigation options for N_2O and NO emissions from agricultural soils: meta-analysis.* Global Change Biology (2010) 16, 1837–1846. Available at doi: 10.1111/j.1365-2486.2009.02031.x