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

Addendum

Summary

This addendum to the report on 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, contains the results of the review of the consistency of the information submitted by the Party with those modalities, procedures and guidelines. 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*
AD	activity data
BTR	biennial transparency report
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CRT	common reporting table
CSC	carbon stock change
CTF	common tabular format
ETF	enhanced transparency framework under the Paris Agreement
$Frac_{GASF}$	fraction of synthetic fertilizer nitrogen applied to soils that volatilizes as ammonia and nitrogen oxides
$Frac_{GASM}$	fraction of applied organic nitrogen fertilizer materials and of urine and dung nitrogen deposited by grazing animals that volatilizes as ammonia and nitrogen oxides
$Frac_{GASPRP}$	fraction of urine and dung nitrogen deposited by grazing animals that volatilizes as ammonia and nitrogen oxides
$Frac_{LEACH}$	fraction of nitrogen input to soils that is lost through leaching and run-off
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IE	included elsewhere
IEF	implied emission factor
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
MMS	manure management system(s)
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
Nex	nitrogen excretion
NID	national inventory document
NIR	national inventory report
NO	not occurring
NR	not reported
PaMs	policies and measures
PFC	perfluorocarbon
TERT	technical expert review team

Areas of improvement[1] identified during the technical expert review of the Party's first biennial transparency report

Tables 1–20 present the results of the review of the consistency with the MPGs[2] of the information submitted by Japan in its BTR1. All recommendations and encouragements contained in the tables are for the next BTR or NIR, unless otherwise specified.

A. General reporting provisions

Table 1
Areas of improvement relating to general reporting provisions

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

B. Greenhouse gas emissions and removals

Table 2
Areas of improvement relating to general findings on greenhouse gas emissions and removals

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 3
Areas of improvement of the reporting on greenhouse gas emissions and removals – energy sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
3.E.1	Specified in paragraph 39 of the MPGs 1. General (energy sector) – all fuels – CO_2	The data reported in CRT 1.A(a) show a significant decrease in CO_2 captured between 2017 and 2022. However, the NID does not provide a clear explanation for the trend in captured CO_2. During the review, the Party clarified that the decrease in the amount of CO_2 captured was partly due to geological storage activities not occurring on a continuous basis, and provided a figure illustrating the amounts of CO_2 captured through the various processes implemented in Japan. The TERT recommends that the Party provide information on the CO_2 capture processes in the country and explain the trend in captured CO_2 in the NID.

Table 4
Areas of improvement of the reporting on greenhouse gas emissions and removals – industrial processes and product use sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
4.I.1	Specified in paragraph 40 of the MPGs 2. General (IPPU) – HFCs	Japan reported emissions for unspecified mixes of HFCs in CRT 2(II).B-H, with AD reported in units of mass and emissions reported in t CO_2 eq. As a result, the HFCs in the mix may have very different GWPs, resulting in the calculated IEFs in CRT 2(II).B-H not being meaningful or comparable (with the IEFs ranging between 1,705.98 and 146,753.18 per cent)s. During the review, Japan indicated that a general note to CRT 2(II).B-H states that, in the case of unspecified mixes of HFCs, PFCs, or HFCs and PFCs, the values reported in the emissions column should be in t CO_2 eq, but that the note does not refer to the columns for reporting AD or recovery.

[1] As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs, contained in the annex to decision 18/CMA.1.

[2] Decision 18/CMA.1, annex.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT recommends that Japan revise its reporting of unspecified mixes of HFCs in CRT 2(II).B-H, ensuring that the calculated IEFs, expressed in percentages, are meaningful and comparable.
4.I.2	Specified in paragraph 40 of the MPGs 2.A.3 Glass production – CO_2	The TERT noted that, on the basis of the AD reported for glass production in CRT 2(I).A-H, the CO_2 emissions reported in CRT 2(I).A-H would be expected to be approximately 1,000 times higher. During the review, Japan recognized that incorrect AD for glass production were reported in CRT 2(I).A-H as the value is 1,000 times greater than it should be. The TERT recommends that Japan correct the AD for glass production reported in CRT 2(I).A-H.
4.I.3	Specified in paragraph 39 of the MPGs 2.C.1 Iron and steel production – CO_2	NID table 4-43 shows the calculation of CO_2 emissions from carbon electrodes of arc furnaces in steel production. The Party estimated domestic consumption of carbon electrodes by adding imports to domestic production, and subtracting exports and amount of electric furnace gas, but it was not clear to the TERT why the amount of electric furnace gas was subtracted to estimate domestic consumption. During the review, Japan clarified that the unit reported in NID table 4-43 (t) was in fact "t C" and that the subtraction of electric furnace gas was related to exhausted carbon monoxide emissions. Those emissions were subsequently used as energy and, as such, accounted for in the energy sector (category 1.A fuel combustion activities (sectoral approach)). Japan added that emissions from aluminium production (subcategory 2.C.3) were also included in NID table 4-43 and reported for up to 2014, when such production ceased. The TERT recommends that Japan revise NID table 4-43 to ensure consistency with the unit used in CRT 2(I).A-H and the explanations provided in the "Estimation Method" section (NID p.4-52). The TERT also recommends that NID table 4-43 clearly indicate information on imports, production, exports and domestic consumption of carbon electrodes of arc furnaces, on electric furnace gas in tonnes of carbon, on CO_2 emissions from aluminium production (subcategory 2.C.3) and on emissions in t CO_2 for subcategory 2.C.1.a
4.I.4	Specified in paragraph 40 of the MPGs 2.F Product uses as substitutes for ozone-depleting substances – HFCs and PFCs	Japan reported in CRT 2(II).B-Hs2 IEFs for disposal loss factor of higher than 100 per cent and, in some cases, of almost 700 per cent for specific gases. The TERT notes that, in principle, emissions from disposal can be considered equivalent to the amount remaining in products at decommissioning minus the amount recovered. The TERT noted that, according to the 2022 AD and emission estimates reported by Japan in CRT 2(II).B-Hs2 and the weighted average GWP pertaining to disposal specified in footnote 2 of NID table 4-63, emissions from disposal and emissions estimated as remaining in products at decommissioning minus the amount recovered are 13,549,873 and 12,140,653 t CO_2 eq respectively, indicating a discrepancy between the two. During the review, Japan explained that the AD reported under "Remaining in products at decommissioning" in CRT 2(II).B-Hs2 are based on the average refrigerant charge during operation, not on the average charge during disposal. Moreover, Japan presented the forms used to gather AD from the trade associations to the TERT for better understanding of the calculations. The TERT recommends that the refrigerant charge reported for products at decommissioning reflect the actual average at their end of life rather than the operational average so as to ensure consistent and accurate AD reporting in CRT 2(II).B-Hs2. The TERT also recommends that Japan present in NID table 4-63 the GWP averages used to report emissions from manufacturing, stocks and disposal in CRT 2(II).B-Hs2 for all reporting years.

Table 5

Areas of improvement of the reporting on greenhouse gas emissions and removals – agriculture sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
5.A.1	Specified in paragraph 21 of the MPGs	The Party reported the populations of sheep and goats in NID table 5-12. The TERT noted, however, that the AD used to estimate emissions from sheep and

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
	3. General (agriculture) – CH_4 and N_2O	goats are not in accordance with the 2006 IPCC Guidelines (vol. 4, chap. 10.2.2, equation 10.1), since the annual population statistics in the data sources used do not take into account seasonal births or slaughters. During the review, the Party explained that the status report regarding health management for livestock feeding published by the Ministry of Agriculture, Forestry and Fisheries and the statistical document on livestock breeding published by the Japan Livestock Industry Association are used as data sources, and the numbers of animals in both statistics are as at 1 February of the inventory year. The TERT recommends that the Party estimate the populations of sheep and goats bearing in mind seasonal variations in livestock populations, and that the Party revise its estimates of emissions from enteric fermentation and manure management.
5.A.2	Specified in paragraph 21 of the MPGs 3.A.1 Cattle – CH_4	The Party reported in NID tables 5-6 and 5-7 that weights and daily weight gains for non-dairy cattle have remained unchanged since 2000. The TERT noted that these AD are not in accordance with the 2006 IPCC Guidelines (vol. 4, chap. 10.2.2) because up-to-date values are needed for the daily gain and weight of cattle in order to reflect changes in feed intake over the time series. During the review, the Party explained that Japanese feeding standards are the data source in this regard, and that updated standards were published in 2000 and 2008 for non-dairy cattle. The Party also clarified that the daily gain for non-dairy cattle was updated in the Japanese feeding standard for beef cattle in 2022, and new values were reported in the 2025 NIR. Noting the updated information in the 2025 NIR, the TERT recommends that Japan use the updated values from the Japanese feeding standard for beef cattle for 2022 to estimate daily gain and cattle weight for 2000 onward by using, for example, the splicing techniques set out in the 2006 IPCC Guidelines (vol. 1, chap. 5).
5.A.3	Specified in paragraphs 21 and 39 of the MPGs 3.B Manure management – CH_4 and N_2O	The Party reported in CRTs 3.B(a) and 3.B(b) that some manure is burned for fuel or as waste, but did not describe in its NID how this is taken into account in the inventory under the energy and/or waste sector. During the review, the Party explained that the amount of manure burned with and without energy recovery is not available, and that the associated emissions are reported under the agriculture sector. The emissions of CH_4 and N_2O from the burning of manure as fuel or as waste are included for each type of animal in CRTs 3.B(a) and 3.B(b) under "Other" for MMS. The TERT noted that this reporting is not in accordance with the 2006 IPCC Guidelines (vol. 4, chaps. 10.4–10.5), which state that emissions associated with the burning of dung are to be reported under fuel combustion if used as fuel and under waste incineration if burned without energy recovery. The TERT recommends that the Party estimate the amount of manure burned with and without energy recovery and reallocate the associated emissions from the agriculture sector to the energy and the waste sector respectively.
5.A.4	Specified in paragraph 40 of the MPGs 3.B Manure management – N_2O	The TERT noted various inconsistencies and erroneous entries linked to the reporting of N_2O emissions from manure management in CRT 3.B(b). First, there were errors in the reported amount of N_2O emissions for each MMS; pit storage emissions were missing (reported as "NO") even though pit storage is specified as a manure treatment method in NID table 5-35; and deep bedding emissions were reported as "IE" with no explanation in CRT 9. Second, the values for total Nex (in column R) are not consistent with the values of total Nex calculated using the reported populations and Nex/head for dairy and non-dairy cattle, and for buffalo and poultry. Third, the figures for Nex on pasture, range and paddock do not correspond to those in CRT 3.D. During the review, the Party explained that emissions from deep bedding were reported under composting, but they will be reported under pit storage in the next submission. The Party also explained that inconsistencies in the total Nex values were caused by transcription errors when transferring data for MMS into CRT 3.B(b), and that the values for direct N_2O emissions per MMS (in row 31) are incorrect; but those errors did not affect the total agricultural emissions reported in CRT 3.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT recommends that the Party correct the following information reported in CRT 3.B(b): total Nex for dairy and non-dairy cattle, buffalo and poultry; N_2O emissions from pit storage, which were missing (reported as "NO"); where emissions from deep bedding are included; and the values for Nex on pasture, range and paddock.
5.A.5	Specified in paragraph 40 of the MPGs 3.D Direct and indirect N_2O emissions from agricultural soils – N_2O	The Party did not report values for $Frac_{GASPRP}$ or $Frac_{LEACH}$ in CRT 3.D, and $Frac_{GASM}$ was reported as zero. According to the NID, fractions from the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories* were used. The $Frac_{LEACH}$ value used is 0.24 (NID p.5-68) and the $Frac_{GASM}$ value used is 0.21 (NID table 5-73). $Frac_{GASF}$ was reported as 0.11 in CRT 3.D for 2022 and remained constant throughout the time series. The TERT noted that $Frac_{GASF}$ should be recalculated for every year, using specific $Frac_{GASF}$ values for the different synthetic fertilizer types provided in NID table 5-73 and taking into account the annual amount of each synthetic fertilizer type used, and the resulting weighted mean should then be reported in CRT 3.D. During the review, the Party explained that there are some errors in the CRT 3.D submitted in 2024 and it was unable to report values for all fractions. However, those fractions are reported in the 2025 NIR. The Party also provided to the TERT the weighted mean values for $Frac_{GASF}$ used in the calculations across the entire time series. Noting the updated information in the 2025 NIR, the TERT recommends that the Party report values for $Frac_{GASPRP}$, $Frac_{LEACH}$ and $Frac_{GASM}$ in CRT 3.D and that the weighted mean values for $Frac_{GASF}$ used in the calculations across the entire time series be reported.

Table 6
Areas of improvement of the reporting on greenhouse gas emissions and removals – land use, land-use change and forestry sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
6.L.1	Specified in paragraphs 39–40 of the MPGs 4. General (LULUCF) – CO_2, CH_4 and N_2O	Japan reported the biomass stocks in forest land before conversion of forest land to other land uses in NID table 6-10 used for estimating CSCs. The TERT noted that, while biomass stocks in forest land increased only by about 0.4 per cent between 1990 and 2018 (from 93.1 to 93.5 t dry matter/ha), between 2018 and 2019 they increased by about 63.3 per cent (from 93.5 to 152.7 t dry matter/ha). The reason for the increase between 2018 and 2019 was not provided in the NID. During the review, the Party explained that there was a potential error in the calculation of biomass stocks in forest land before conversion before 2018 that affected the LULUCF estimates in the GHG inventory and the activity-based accounting quantities for LULUCF activities for 2014–2018 presented in NID table A 9-3. In response to a request from the TERT, the Party provided provisional estimates, using the average values for 2019–2021, for both the LULUCF part of the GHG inventory and the archive values for NDC LULUCF accounting activities. The TERT recommends that the Party revise the values for biomass stocks in forest land before conversion and recalculate the CSCs for forest land converted to other land for the whole time series.
6.L.2	Specified in paragraphs 21, 39 and 40 of the MPGs Land representation – CO_2, CH_4 and N_2O	Japan reported its land use and land-use change areas in CRT 4.1. However, the TERT noted differences between the final areas reported for one year and the initial areas reported for the following year in CRT 4.1 for all land use categories and throughout the entire time series. For example, the final areas reported in the 2014 land-use matrix were forest land, 25,113.872 kha; and cropland, 4,183.173 kha. In comparison, the initial areas reported in the 2015 land-use matrix were forest land, 24,914.006 kha; and cropland, 4,179.713 kha. The TERT noted that, in accordance with the 2006 IPCC Guidelines (vol. 4, chap. 3), the final area per land-use category reported for a year must be equal to the initial area reported for the subsequent year.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		During the review, the Party explained that it determines the area for each land-use category using a mix of data in terms of source, type (geographic information system, survey and statistical data) and resolution or quality. The TERT recommends that the Party provide a consistent land-use matrix, ensuring that the final area per land-use category reported for a year is equal to the initial area reported for the subsequent year in CRT 4.1, and explain the drivers for significant discrepancies in the areas of land use with supporting statistical information.
6.L.3	Specified in paragraph 40 of the MPGs 4.B.1 Cropland remaining cropland – CO_2	Japan reported the methodology used for estimating CSCs for cropland remaining cropland in the NID (pp.6-32–6-41). However, the TERT noted that information on CSCs for the conversion from annual to perennial crops or vice versa was not provided. During the review, the Party explained that conversions from annual to perennial crops and vice versa do occur to some extent in the country. In addition, the available data on conversions from annual to perennial crops and vice versa are not sufficiently accurate. The Party also explained that there was no underestimation of emissions for this subcategory since the area converted from perennial crops is deducted from the total area of perennial crops. The TERT recommends that the Party provide in the NID detailed information on how the CSCs for land converted from annual to perennial crops and vice versa are estimated.
6.L.4	Specified in paragraph 40 of the MPGs 4.B.1 Cropland remaining cropland – CO_2	Japan reported the methodology and parameters used for estimating CSCs of living biomass for perennial crops in the NID (p.6-33). The Party also reported dry matter biomass weights and root-to-shoot ratios for a number of fruit orchard species. However, the TERT noted that these parameters were provided as aggregated ranges, not by species (8–24 t dry matter/ha for dry matter biomass weights and 7:3–5:4 for root-to-shoot ratios). During the review, the Party provided dry matter biomass weights and root-to-shoot ratios for 15 orchard tree species. The TERT recommends that the Party provide in the NID the dry matter biomass weights and root-to-shoot ratios by orchard tree species used for estimating CSCs in perennial crops.
6.L.5	Specified in paragraph 40 of the MPGs 4.C Grassland – CO_2, CH_4 and N_2O	Japan estimated CSCs in grassland for three subcategories: pasture land, grazed meadow and wild land and reported them in the NID (pp.6-47–6-54). Japan reported the parameters used for estimating CSCs in the biomass carbon pool of land converted to grassland in NID tables 6-9, 6-10 and 6-11. However, the Party used the same value for biomass stock and annual increment for all three subcategories (13.5 t dry matter/ha and 2.7 t dry matter/ha/year respectively) without providing an explanation of why. During the review, the Party explained that this parameter is only relevant to estimating emissions for non-key categories and its improvement is unlikely to increase the overall accuracy of CSCs estimates. The Party also explained that for all three subcategories there is no woody vegetation (only herbaceous) in terms of estimation of carbon stock changes and that the vegetation type does not vary significantly between the subcategories in terms of the application of the IPCC default parameter. The TERT recommends that the Party explain in the NID why it used the same value for biomass stock and annual increment for the pasture land, grazed meadow and wild land subcategories of the grassland category.

Table 7
Areas of improvement of the reporting on greenhouse gas emissions and removals – waste sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
7.W.1	Specified in paragraph 40 of the MPGs	The Party indicated in NID table 7-29 the energy sector subcategories under which emissions from waste incineration with energy recovery, direct use of waste as alternative fuel, and incineration of waste processed as fuel are reported (subcategories 1.A.1.b, 1.A.1.c, 1.A.2.a, 1.A.2.b, 1.A.2.c, 1.A.2.d, 1.A.2.f, 1.A.2.g

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
	5.C.1 Waste incineration – CO_2, CH_4 and N_2O	and 1.A.4.a). However, the AD for waste incineration with energy recovery were not transparently presented in the NID. During the review, the Party provided a table containing the biogenic and non-biogenic AD by subcategory for the three treatment types set out in NID table 7-29, and their associated emissions. The TERT recommends that the Party report in the NID the AD on the amount of waste incinerated (in tonnes) used for estimating emissions from waste incineration with energy recovery.
7.W.2	Specified in paragraph 39 of the MPGs	The Party reported constant AD for all industries producing wastewater for 2014–2022 (NID table 7-104).
	5.D.2 Industrial wastewater – CH_4 and N_2O	During the review, the Party explained that the AD had not been updated since 2014 as relevant data had been excluded from the national statistics publications. The Party indicated that it is exploring the possibility of using alternative statistical surveys to estimate AD and intends to include this information in the next NID. The TERT recommends that the Party update the AD used for estimating CH_4 and N_2O emissions from industrial wastewater treatment and recalculate the emissions for 2014 onward.

C. Information necessary to track progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

Table 8
Areas of improvement of the reporting on national circumstances and institutional arrangements

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 9
Areas of improvement of the description of the nationally determined contribution under Article 4 of the Paris Agreement, including updates

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 10
Areas of improvement of the reporting of the information necessary to track progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
10.1	Specified in paragraph 71 of the MPGs	Japan did not indicate how its NDC accounting approach is consistent with Article 4, paragraph 13, of the Paris Agreement. During the review, Japan explained that it interpreted paragraph 71 of the MPGs to mean that reporting based on decision 4/CMA.1 would satisfy the reporting requirement, and that it intends to report on how its accounting approach is consistent with Article 4, paragraph 13, of the Paris Agreement in the next BTR. The TERT recommends that Japan indicate clearly how its NDC accounting approach is consistent with Article 4, paragraph 13, of the Paris Agreement.

Table 11
Areas of improvement of the reporting on mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans, related to implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
11.1	Specified in paragraph 83 of the MPGs	Japan did not report on the costs of PaMs, the non-GHG mitigation benefits of PaMs or how the PaMs interact with each other. During the review, Japan explained that, while it is currently unable to provide information on the non-GHG mitigation benefits of PaMs or on how PaMs interact with each other, it will provide an overview of the costs of each policy or measure in a future BTR. The TERT encourages Japan to provide in the BTR information on the costs of PaMs, the non-GHG mitigation benefits of PaMs and how the PaMs interact with each other.
11.2	Specified in paragraph 90 of the MPGs	Japan did not provide detailed information on the assessment of the economic and social impacts of response measures. During the review, Japan explained that it recognizes the importance of minimizing negative economic impacts on those economies most affected by response measures, as noted in Article 4, paragraph 15, of the Paris Agreement. It will address this issue in future by considering information from multiple perspectives, including the challenge of accurately assessing the negative impacts of specific measures. The TERT encourages the Party to provide information, to the extent possible, on the assessment of the economic and social impacts of response measures.

Table 12
Areas of improvement of the summary of greenhouse gas emissions and removals

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 13
Areas of improvement of the projections of greenhouse gas emissions and removals

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
13.1	Specified in paragraph 95 of the MPGs	The Party reported GHG emission projections for up to 2030 only. The TERT noted that, in accordance with the MPGs, projections shall begin from the most recent year in the Party's NIR and extend at least 15 years beyond the next year ending in zero or five. During the review, the Party explained that it only projected emissions up to its NDC target year, not beyond. Since Japan has set fiscal year 2030 as its target year, it has not estimated projections for fiscal years 2025 and 2035. Japan provided information that the new NDC targets set in February 2025 extend to fiscal year 2035 (–60 per cent from the 2013 level) and fiscal year 2040 (–73 per cent from the 2013 level). The TERT recommends that Japan report GHG emission projections that begin from the most recent year in the Party's NIR and extend at least 15 years beyond the next year ending in zero or five.
13.2	Specified in paragraph 96(c) of the MPGs	Japan reported assumptions and methodologies used for estimating emission reductions resulting from PaMs for each sector (BTR1 chap. 9.2), including elaborating on "Measure evaluation indicator" and "Methodologies". However, the reporting of assumptions was not consistent across all PaMs. For instance, detailed assumptions were provided for the measure "Maximum introduction of renewable energy in the energy sector", but not for several others. During the review, the Party referred to its Plan for Global Warming Countermeasures, which stipulates the PaMs reported in the BTR1. However, the TERT noted that it did not clarify the inconsistencies observed in relation to its reporting of assumptions.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT encourages the Party to report on the assumptions related to the PaMs included in the 'with measures' scenario in a consistent manner across all PaMs.
13.3	Specified in paragraph 96(d) of the MPGs	Japan stated that a sensitivity analysis was not performed because the appropriate methodology for a sensitivity analysis had not been considered. During the review, Japan explained that it plans to consider possible approaches to carrying out a sensitivity analysis for the projections. The TERT encourages the Party to report the results of the sensitivity analysis of the GHG emission projections, and provide a brief explanation of the methodologies and parameters used.

Table 14
Areas of improvement of other information relevant to tracking progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

D. Financial, technology development and transfer, and capacity-building support provided under Articles 9–11 of the Paris Agreement

Table 15
Areas of improvement of the reporting on national circumstances and institutional arrangements

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 16
Areas of improvement of the reporting on underlying assumptions, definitions and methodologies relating to financial, technology development and transfer, and capacity-building support provided under Articles 9–11 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA		No areas of improvement identified

Table 17
Areas of improvement of the information on financial support provided under Article 9 of the Paris Agreement – bilateral, regional and other channels

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
17.1	Specified in paragraph 123 of the MPGs	Japan reported information on financial support provided through bilateral, regional and other channels in CTF table III.1 and in the BTR1. However, the TERT noted that the total amount of financial support reported in CTF table III.1 for 2021 and 2022 is not consistent with the total financial amount reported in the BTR1. For example, in its BTR1 Japan reported USD 5.14 billion for mitigation, USD 3.66 billion for adaptation and USD 146 million for cross-cutting in 2021. However, in the CTF tables, the reported totals for each category are lower: USD 4.92 billion for mitigation, USD 3.54 billion for adaptation and USD 62.86 million for cross-cutting. During the review, Japan explained that for some bilateral projects the financial support was reported as "NR" because it is provided by private donors. Private companies report their financial contributions on the condition that the amounts are not disclosed, and therefore only aggregated data are reported. Furthermore, Japan explained that the actual amount of support provided is the amount reported in the BTR1. In addition, Japan provided information at a more disaggregated level, including amounts by financial instrument and type of instrument for 2021–2022.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT recommends that Japan provide consistent figures and total amounts for financial support between CTF table III.1 and the BTR or explain why the information in CTF table III.1 is different from that in the BTR.

Table 18

Areas of improvement of the information on financial support provided under Article 9 of the Paris Agreement – multilateral channels

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 19

Areas of improvement of the information on technology development and transfer provided under Article 10 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 20

Areas of improvement of the information on capacity-building support provided under Article 11 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
20.1	Specified in paragraph 128(b) of the MPGs	Japan reported information on capacity-building support provided to developing countries in the BTR1. However, the TERT could not identify information in the BTR1 on how the support provided responds to existing and emerging capacity-building needs, priorities and gaps identified by developing country Parties in the areas of mitigation, adaptation, and technology development and transfer. During the review, Japan explained that it had signed a memorandum of cooperation on the environment with 19 developing countries and that it conducts policy dialogues in the environmental field. As part of these policy dialogues, Japan engages in close discussions to understand the needs of partner countries and then determines specific support measures for mitigation, adaptation and other areas. The TERT recommends that the Party provide, to the extent possible, information on how it seeks to ensure that the support it provides responds to existing and emerging capacity-building needs, priorities and gaps identified by developing country Parties in the areas of mitigation, adaptation, and technology development and transfer.

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.
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"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