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

Addendum

Summary

This addendum to the report on the technical expert review of the first biennial transparency report of the Republic of Korea, 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 16 to 20 March 2026 in Seoul.

* In the symbol for this document, 2025 refers to the year in which the original biennial transparency report was submitted, not to the year of publication.



Abbreviations and acronyms

2006 IPCC Guidelines	<i>2006 IPCC Guidelines for National Greenhouse Gas Inventories</i>
AD	activity data
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BOD	biochemical oxygen demand
BTR	biennial transparency report
C	confidential
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
COD	chemical oxygen demand
CRT	common reporting table
CTF	common tabular format
EEA	European Environment Agency
EF	emission factor
EMEP	Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
F _{CR}	amount of nitrogen input from crop residues
F-gas	fluorinated gas
Frac _{GasMS}	fraction of managed animal manure nitrogen that volatilizes as ammonia and nitrogen oxides in the manure management system
Frac _{LossMS}	fraction of managed animal manure nitrogen that is lost in the manure management system
Frac _{Remove}	fraction of total crop area removed annually
Frac _{Renew}	fraction of total crop area renewed annually
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IE	included elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
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	nitrogen
N ₂ O	nitrous oxide
NA	not applicable
NDC	nationally determined contribution
NE	not estimated
NF ₃	nitrogen trifluoride
NH ₃	ammonia
NID	national inventory document
NIR	national inventory report
NMVOC	non-methane volatile organic compound
NO	not occurring
NO _x	nitrogen oxides
PaMs	policies and measures
PFC	perfluorocarbon

QA/QC	quality assurance/quality control
SF ₆	sulfur hexafluoride
SO _x	sulfur oxides
TERT	technical expert review team
WAM	‘with additional measures’
WM	‘with measures’
WOM	‘without measures’

Areas of improvement¹ identified during the technical expert review of the Party's first biennial transparency report

Tables 1–14 present the results of the review of the consistency with the MPGs² of the information submitted by the Republic of Korea 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
1.1	Specified in paragraph 1(b) of decision 5/CMA.3	Some of the CTF tables submitted by the Republic of Korea are not consistent with the templates provided in annex II to decision 5/CMA.3. In CTF table 5, the Party added an extra column called “Sector” and removed the headings “Achieved” and “Expected”. In CTF table 7, the unit of measure used to report the WM projections for all GHG emissions and removals is not consistent with that used in the template. During the review, the Party explained that it added the “Sector” column in CTF table 5 to provide a clear explanation of the structure of its NDC and that the omission of the headings “Achieved” and “Expected” was an inadvertent error. The Party also explained that it used Mt CO₂ eq in CTF table 7 for consistency with the unit of measure used in the BTR1. The Party confirmed that it will revise CTF table 7 and use kt CO₂ eq in future submissions. The TERT recommends that the Party submit CTF tables that are consistent with the templates provided in annex II to decision 5/CMA.3.

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
2.G.1	Specified in paragraphs 21 and 23 of the MPGs Methods	In its NIR, the Party did not always use the recommended method (tier level) for key categories. The TERT noted, for example, that the Party used a tier 1 approach for subcategories 2.A.2 lime production and 2.F.1 refrigeration and air conditioning and for categories 2.G other product manufacture and use, 3.A enteric fermentation and 3.B manure management, all of which are key categories. During the review, the Party indicated that it has established improvement plans to collect country-specific data for many of these key categories. The TERT encourages the Party to make every effort to use the recommended method (tier level) for key categories in accordance with the 2006 IPCC Guidelines, and to report on how it is addressing or intends to address the issue.
2.G.2	Specified in paragraph 29 of the MPGs Uncertainty analysis	In its NID, the Party did not provide a qualitative discussion or quantitative estimate of uncertainty for key categories or a quantitative estimate of uncertainty for all source and sink categories of the GHG inventory. This was the case for both level and trend assessment. The Party did, however, address the requirements of the MPGs in relation to the uncertainty assessment in NID section 1.6 and annex 2. During the review, the Party stated that it conducted a quantitative uncertainty analysis by level and trend for all source and sink categories of the GHG inventory in accordance with the 2006 IPCC Guidelines on the basis of domestic research results provided by the designated inventory agencies and uncertainty information

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
2.G.3	Specified in paragraphs 31 and 45 of the MPGs Notation keys	presented in the 2006 IPCC Guidelines. The Party also informed the TERT that it plans to provide more detailed information in its NID on uncertainty analysis results for each category and subcategory, including quantitative uncertainty estimates, where applicable, by conducting discussions with experts from relevant agencies. The TERT recommends that the Party quantitatively estimate and qualitatively discuss in its NID the uncertainty of the emission and removal estimates for all source and sink categories, as well as estimate the trend uncertainty of emission and removal estimates for all source and sink categories. The TERT noted that the Party reported “NO”, “NE” and “IE” without always providing an explanation for their use. For example, the Party reported “NO” for some fuel types under subcategory 1.A.1.c manufacture of solid fuels and other energy industries for emissions related to primary energy production and extraction, but the TERT could not find any information in the NIR clarifying why no activity occurs under this subcategory. The same applies to the reporting of the other above-mentioned notation keys. The Party reported N₂O and CH₄ emissions from biomass burning of rice residues as “NO” in CRT 3.F, whereas in the additional information box on the same worksheet the fraction of rice residues burned in fields is reported as “NE”. During the review, the Party stated that, in relation to subcategory 1.A.1.c in particular, it used national energy demand and supply statistics to estimate emissions. The Party clarified that fuel consumption associated with primary energy production and extraction industries either did not occur or was very low because the country relies on imports for most of its primary energy resources (94.4 per cent of its primary energy was imported in 2022). The Party also confirmed that it does not burn rice residues and will therefore report the fraction of rice residues burned in fields as “NO” in its next submission. The Party also informed the TERT that it will include information in future NIDs on its national circumstances related to the categories and subcategories for which it reports emissions as “NO”, “NE” and “IE”. The TERT recommends that the Party indicate the reasons why emissions from sources and removals by sinks and associated data for specific sectors, categories and subcategories are reported as “NO”, “NE” or “IE”.
2.G.4	Specified in paragraph 32 of the MPGs Completeness	The Party used “NE” when estimates would be insignificant in terms of level but did not report a likely level of emissions for the respective categories and subcategories to justify its use. The TERT did not find any information in the NIR to suggest that the Party had added together the likely level of emissions for all the categories and subcategories reported as insignificant in the NID to determine whether the computed total conforms with the requirement that the total national aggregate of estimated emissions for all gases for categories and subcategories considered insignificant remains below 0.1 per cent of the national total GHG emissions, excluding LULUCF. During the review, the Party confirmed that it reported emissions as insignificant for the following nine subcategories: 2.A.4.d other, 2.B.9 fluorochemical production (SF₆), 2.C.2 ferroalloys production, 2.C.5 lead production, 2.C.6 zinc production, 2.C.7 other, 2.G.3 N₂O from product uses, 5.B.1 composting and 5.B.2 anaerobic digestion at biogas facilities. The Party also confirmed that, in compliance with the MPGs, it had summed the likely level of emissions for all the categories and subcategories reported as insignificant in the NID and determined that the total remained below 0.1 per cent of the national total GHG emissions, excluding LULUCF. This information is not reported in the NID, but the Party provided the results of the calculation to the TERT during the review. The TERT encourages the Party to use approximated AD and default IPCC EFs to derive a likely level of emissions for the respective categories and subcategories reported as “NE” and considered insignificant. It also encourages the Party to report in its NID whether the total national aggregate of estimated emissions for all gases for categories and subcategories considered insignificant remains below 0.1 per cent of the national total GHG emissions, excluding LULUCF.
2.G.5	Specified in paragraph 35 of the MPGs	The Party reported in NID section 3.2.4.4 that it applied general QA/QC procedures in accordance with the 2006 IPCC Guidelines. However, the TERT was not able to find any information in the NID on QC at a less general level for key categories and for those individual categories in which significant methodological changes and/or

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
	QA/QC and verification	data revisions have occurred. This is the case for subcategories 1.A.2 manufacturing industries and construction (NID section 3.2.5.4), 1.A.3.b road transportation (NID section 3.2.6.3.4) and 1.A.4 other sectors (NID section 3.2.7.4) and for categories 3.A enteric fermentation (NID sections 5.2.1.4 and 5.2.2.4), 3.B manure management (NID sections 5.3.1.4 and 5.3.2.4) and 3.C rice cultivation (NID sections 5.4.1.4 and 5.4.2.4), all of which are key categories. During the review, the Party informed the TERT that it has established sector- and category-specific QC checklists in accordance with the QC checklists provided in annex 6A.1 of the 2006 IPCC Guidelines (vol. 1, chap. 6) and that it conducts QC activities in an annual cycle. The Party explained that the annual QC procedure consists of two stages. The first stage involves the governing ministries or designated inventory agencies conducting QC activities using sector- and category-specific QC checklists and submitting QC reports to the Greenhouse Gas Inventory and Research Centre. In the second stage, areas of improvement identified during the QC process are incorporated into the national measurement, reporting and verification guidelines and five-year master plan. The Party informed the TERT that it will explain category-specific QC activities in more detail in its next NID to make it easier to locate relevant information on QC procedures. The TERT encourages the Party to undertake QC procedures in accordance with the 2006 IPCC Guidelines for key categories across all sectors.
2.G.6	Specified in paragraph 51 of the MPGs Precursor gases – CO, NO_x, NMVOCs and SO_x	The Party did not report emissions of precursor gases. In the executive summary of the NID (section ES.4), the Party stated that it will make additional efforts to include emissions of precursor gases in future BTRs and NIDs. During the review, the Party informed the TERT that it estimates precursor gas emissions on the basis of its national inventory of air pollutants, which are estimated using a methodology consistent with that specified in the <i>EMEP/CORINAIR emission inventory guidebook – 2005</i>. The Party also clarified, however, that source categories in its national inventory of air pollutants differ from those reported in its GHG inventory. The Party intends to perform a mapping exercise to counteract this discrepancy between source categories. The Party informed the TERT that it is planning to compile a pilot inventory of precursor gases from 2026 and that it will conduct a verification process for the estimates reported in this inventory and consider submitting verified emissions of precursor gases in its NID from 2027. The TERT encourages the Party to provide information on the following precursor gases: CO, NO_x, NMVOCs and SO_x.
2.G.7	Specified in paragraph 52 of the MPGs Indirect N₂O emissions – indirect N₂O	The Party did not report emissions of indirect N₂O. The TERT noted that in the executive summary of the NID (section ES.4), the Party stated that it will make additional efforts to include emissions of indirect N₂O in future BTRs and NIDs. During the review, the Party informed the TERT that estimating indirect N₂O emissions requires emissions of precursor gases such as NH₃ and NO_x to be estimated first. The Party added that it has not yet estimated or verified emissions of the precursor gases related to emissions of indirect N₂O, but that it plans to begin this estimation and verification process in 2026, after which point it will estimate and report indirect N₂O emissions in its NID. The TERT encourages the Party to report indirect N₂O emissions from sources other than those in the agriculture and LULUCF sectors as a memo item in its NID.

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 36 of the MPGs Fuel combustion – reference approach – CO₂	The Republic of Korea did not report the comparison between the sectoral and the reference approach to estimating CO₂ emissions from fuel combustion in its NID. In NID section 3.2.1, the Party stated that it is consulting with experts to help it perform the detailed calculations needed to estimate CO₂ emissions from fuel combustion using the reference approach to ensure that the estimates can be compared with those calculated using the sectoral approach and that the results of this comparison will be included in future submissions.

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
3.E.2	Specified in paragraph 39 of the MPGs General	During the review, the Party confirmed that it is consulting with experts to help it review the results of the comparison between the sectoral and the reference approach to estimating CO₂ emissions from fuel combustion and that it is in the final stages of examining the consistency and integrity of the data used in the comparison. The Party informed the TERT that, after the expert consultation stage is complete in 2026, detailed information on the comparison between the sectoral and the reference approach to estimating CO₂ emissions from fuel combustion will be included in the next NIR. The TERT encourages the Party to compare the national estimates of CO₂ emissions from fuel combustion with those obtained from using the reference approach and report the results of the comparison in its NID. In several sections of the chapter on the energy sector, the NID does not provide descriptive summaries of the methodologies and EFs applied to specific subcategories, but instead refers readers to information provided on a different subcategory. For example, in NID section 3.2.5.2.1 on the choice of method and EFs used for subcategory 1.A.2 manufacturing industries and construction, the NID refers readers to the corresponding information provided for subcategory 1.A.1 energy industries. However, this information is quite specific to subcategory 1.A.1, which made it difficult for the TERT to understand the rationale for the choice of method and to understand what EFs were used (and why) for subcategory 1.A.2. Other examples of where the NID refers readers to different subcategories in a way that was not fully clear to the TERT include NID sections 3.2.6.4.2 (subcategory 1.A.3.c railways), 3.2.6.5.2 (subcategory 1.A.3.d domestic navigation), 3.2.6.6.2 (subcategory 1.A.3.e other transportation), 3.2.7.2 (subcategory 1.A.4 other sectors) and 3.2.8.2 (subcategory 1.A.5 other). During the review, the Party informed the TERT that instead of providing specific descriptive summaries for some subcategories, it chose to refer readers to the corresponding information for other subcategories to avoid repeating the same summaries throughout the chapter on the energy sector. The Party also informed the TERT that to make the NIR easier to navigate, it will provide more detailed descriptions in its next NID, including on the methods and EFs used for each subcategory. The TERT encourages the Party to report in more detail on the methods used, by category and subcategory, as applicable, including the rationale for the choice of methods, in accordance with good practice elaborated in the 2006 IPCC Guidelines.
3.E.3	Specified in paragraphs 40 and 47 of the MPGs 1.A.3.b Road transportation – CO ₂ , CH ₄ and N ₂ O	The Party did not report AD, EFs and emissions for the four subcategories under subcategory 1.A.3.b road transportation in a disaggregated manner but rather included them under subcategory 1.A.3.b.i cars and reported “IE” for subcategories 1.A.3.b.ii light-duty trucks, 1.A.3.b.iii heavy-duty trucks and buses, and 1.A.3.b.iv motorcycles. During the review, the Party informed the TERT that emissions for subcategories 1.A.3.b.ii, 1.A.3.b.iii and 1.A.3.b.iv were all reported together under subcategory 1.A.3.b.i, causing subcategories 1.A.3.b.ii, 1.A.3.b.iii and 1.A.3.b.iv to be reported as “IE”. The Party informed the TERT that it is planning to conduct a study on methodologies for estimating emissions by vehicle type in 2026 and to develop an improvement plan for reporting emissions by vehicle type by 2028. The Party added that, after compiling a pilot inventory in 2029, it will report emissions from road transportation in a disaggregated manner in its NID for 2030 onward. The TERT recommends that the Party estimate emissions separately for all subcategories under subcategory 1.A.3.b and report them in a disaggregated manner, for example by implementing the annual action plans under the Republic of Korea’s third Master Plan for road transportation data disaggregation.
3.E.4	Specified in paragraph 54 of the MPGs Feedstocks, reductants and other non-energy use of fuels – CO ₂	The Republic of Korea briefly addressed the topic of feedstocks, reductants and other non-energy use of fuels in NID section 3.2.3. However, the Party left blank CRT 1.A(d) on feedstocks, reductants and other non-energy use of fuels, and the TERT was unable to find an explanation for this in the NID. During the review, the Party informed the TERT that it will fill in CRT 1.A(d) when compiling its subsequent NIR.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		The TERT encourages the Party to clearly indicate in its NIR how feedstocks and non-energy use of fuels have been accounted for in its inventory, under the energy or IPPU sectors, in accordance with the 2006 IPCC Guidelines.

Table 4

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

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
4.I.1	Specified in paragraph 26 of the MPGs 2.B.2 Nitric acid production – N ₂ O	The Party reported a trend of decreasing emissions for subcategory 2.B.2 nitric acid production since 2007, which was accompanied by increasing nitric acid production. The Party provided a brief explanation for the decreasing emission trend (NID p.4-27) relating to the implementation of mitigation projects; however, there was insufficient information on the changes in production technology associated with these projects and on the proportion of nitric acid plants using high-pressure and medium-pressure processes. During the review, the Party explained that the decreasing emission trend and lower implied emission factor for nitric acid production since 2007 are attributable to clean development mechanism projects involving the installation of catalyst-based N₂O abatement facilities by domestic nitric acid producers. It noted that, in 2022, nitric acid plants with high-pressure processes accounted for around 32 per cent of plants and those with medium-pressure processes accounted for around 68 per cent of plants. The TERT encourages the Party to include in the NID information on the changes in technology attributable to the clean development mechanism projects and on the proportion of high-pressure and medium-pressure processes used in nitric acid plants to improve the transparency and clarity of its reporting.
4.I.2	Specified in paragraph 32 of the MPGs 2.C.3 Aluminium production – PFCs	The TERT noted that, in the CRTs for 1990, the Party reported CO₂ emissions for subcategory 2.C.3 aluminium production but reported PFC emissions for this subcategory as “NE, NO”. During the review, the Party explained that domestic aluminium production ceased in 1990 and that the production company was involved in mergers and acquisitions on multiple occasions thereafter, which makes it difficult for the Party to identify relevant information on the production process. The Republic of Korea therefore reported PFC emissions from aluminium production as “NE” owing to a lack of detailed information on the production processes required to choose default EFs (vertical stud Søderberg and horizontal stud Søderberg). The Party explained that estimated emissions for this subcategory accounted for less than 0.05 per cent of the national total GHG emissions when using default EFs. The TERT encourages the Party to provide estimates of PFC emissions from aluminium production or, if the Party considers the PFC emissions to be insignificant, to report them as “NE” and provide justification for this in the NID.
4.I.3	Specified in paragraph 31 of the MPGs 2.B Chemical industry – CO ₂ , CH ₄ and N ₂ O 2.E Electronics industry – HFCs, PFCs, SF ₆ and NF ₃	Under category 2.B chemical industry, the Party reported emissions for subcategories 2.B.1 ammonia production as “IE, NA”, and for subcategories 2.B.3 adipic acid production, 2.B.4 caprolactam, glyoxal and glyoxylic acid production, and 2.B.5 carbide production as “IE, NO”, with the emissions aggregated under subcategory 2.B.10 other instead of disaggregated into their individual subcategories. Similarly, under category 2.E electronics industry, the Party reported AD and emissions as a combination of “NA”, “IE” and “NO”. Emissions for subcategories including 2.E.1 integrated circuit or semiconductor, 2.E.2 thin-film transistor flat panel display and 2.E.3 photovoltaics were aggregated and reported under subcategory 2.E.5 other. The TERT did not find any of these subcategories reported using the notation key “C” to indicate the need to avoid disclosing confidential information in the relevant CRTs, other than under subcategory 2.E.5.b other. During the review, the Party explained that it reported data for categories 2.B and 2.E as confidential by including them under the corresponding other subcategory to protect confidential business information, such as on gas consumption, abatement efficiency and utilization rate. The Party also clarified that it reported AD and

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
		emissions for subcategories of categories 2.B and 2.E as “IE” in accordance with paragraph 31 of the MPGs.
		The TERT recommends that the Party use the notation key “C” for reporting on emissions for subcategories or gases that would involve the disclosure of confidential information, in the appropriate corresponding subcategory or gas, and include an explanation for its use.
4.I.4	Specified in paragraph 47 of the MPGs 2.H Other (IPPU) – CO ₂ , CH ₄ and N ₂ O	In the CRTs, the Party reported CO₂, CH₄ and N₂O emissions for subcategories 2.H.1 pulp and paper and 2.H.2 food and beverages industry as “NO”. However, it reported AD for subcategory 2.H.1 as “NO” and for subcategory 2.H.2 as “NA” without providing a sufficient explanation or justification in the NID for this inconsistent reporting of notation keys. During the review, the Republic of Korea explained that it plans to consult with experts on the occurrence of emissions for subcategories 2.H.1 and 2.H.2. If it identifies relevant emissions for these subcategories, the Party will recalculate the inventory for the entire time series and provide specific information on these improvements in its future NIDs. The Republic of Korea noted that it will report either a numerical figure for subcategories 2.H.1 and 2.H.2 if emissions are found to occur or use the correct notation key in its next NID. The TERT recommends that the Republic of Korea examine whether there are source categories for subcategories 2.H.1 and 2.H.2 in the country and report this information in the NID. If emissions for subcategory 2.H.2 are deemed not to occur, the TERT recommends that the Party provide this information in the NID and report emissions for subcategory 2.H.2 as “NO”.
4.I.5	Specified in paragraph 20 of the MPGs CRTs – HFCs, PFCs, SF ₆ and NF ₃	The Party reported “NO” for recovery for HFCs, PFCs, SF₆ and NF₃ in the CRTs, but the TERT noted that it appears that this activity does occur in the country. During the review, the Party explained that emissions of F-gases for subcategories 2.F.1 refrigeration and air conditioning and 2.G.1 electrical equipment are partially recovered in the Republic of Korea. SF₆ is recovered from retiring electrical equipment and is subsequently reused for replenishment purposes during maintenance operations, which is reflected in the inventory through the application of a recovery rate, as indicated in NID section 4.8.1.2.2. However, the Party clarified that it reported the amount of F-gases recovered from electrical equipment as “NO” because relevant data on the amount recovered are not currently available. The Republic of Korea stated that it will assess the feasibility of collecting data on the amount of F-gases recovered so that it can report this amount as a numerical figure or as a notation key where applicable. The TERT recommends that the Republic of Korea examine whether recovery of F-gases occurs in the country and, if it is determined to occur, collect the appropriate AD and estimate and report the recovered amounts of HFCs, PFCs, SF₆ and NF₃ in the NID and the CRTs.

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 20 of the MPGs 3. General (agriculture) – CH ₄ and N ₂ O	The Party used the average AD from across the three most recent years to estimate GHG emissions for several categories and subcategories, including CH₄ emissions from enteric fermentation of sheep, deer, goats and horses, CH₄ emissions from manure management of duck, CH₄ emissions from rice cultivation, N₂O emissions from the application of N and compound fertilizer, and CH₄ and N₂O emissions from biomass burning. However, the Party did not explain why it used three-year average AD instead of AD for each inventory year. During the review, the Party explained that, to maintain consistency with past inventories, the AD used to estimate emissions from the agriculture sector were mostly three-year averages as recommended by the <i>Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories</i>. The TERT recommends that the Party use single-year AD for each inventory year, including on the population of sheep, deer, goats, horses and ducks, the rice

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
		cultivation area, the application of N and compound fertilizer, and annual crop production, in accordance with the 2006 IPCC Guidelines.
5.A.2	Specified in paragraph 20 of the MPGs 3. General (agriculture) – N ₂ O	The Party reported that it calculated the amount of N applied to managed soils from animal manure by deducting the fraction of N loss in the manure management system from the N content of the animal manure (NID p.5-49). The N input from animal manure applied to soils was reported as 249.4 kt in 2022 (NID table 5-48 and CRT 3.D). The TERT noted that the total amount of N excreted and the total amount of N volatilized were reported to be 485.2 kt and 268.9 kt respectively in 2022 (CRT 3.B(b)), resulting in a difference of 216.3 kt, which is lower than the reported amount of N input from animal manure applied to soils. During the review, the Party explained that the default values of $Frac_{GasMS}$ used to estimate the total amount of N volatilized in CRT 3.B(b) were taken from the <i>2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories</i> (vol. 4, chap. 10, table 10.22), while the default values of $Frac_{LossMS}$ used to estimate the total amount of N volatilized from manure management systems and organic fertilizer applied to managed soils were taken from the 2006 IPCC Guidelines (vol. 4, chap. 10, table 10.22). The TERT recommends that the Party use consistent default values for $Frac_{GasMS}$ and $Frac_{LossMS}$ for categories 3.B manure management and 3.D agricultural soils respectively, in accordance with the general QC procedures set out in the 2006 IPCC Guidelines (vol. 1, chap. 6, table 6.1).
5.A.3	Specified in paragraph 39 of the MPGs 3.A.1 Cattle – CH ₄	The Party reported in NID table 5-4 that it developed the country-specific EFs for enteric fermentation of dairy cattle by age using the tier 2 method from the 2006 IPCC Guidelines. However, the Party did not provide any of the descriptions, assumptions, references or sources of information used to derive the EFs, such as average daily feed intake, daily weight gain or values applied for the CH₄ conversion rate. During the review, the Party explained that it developed the country-specific EFs for enteric fermentation of dairy cattle using data on daily feed intake and gross energy from the Korean Feeding Standard published by the National Institute of Animal Science. The TERT recommends that the Party report the descriptions, assumptions, references and sources of information used in the development of EFs for enteric fermentation of dairy cattle using the tier 2 method from the 2006 IPCC guidelines.
5.A.4	Specified in paragraph 39 of the MPGs 3.C Rice cultivation – CH ₄	The Party did not report information on the cultivation period of rice. During the review, the Party explained that, based on domestic research, the annual number of days of rice cultivation is 138 days for 1990–2017 and 137 days for 2018 onward. The Party indicated that it will include relevant information on the cultivation period of rice in its next NID. The TERT recommends that the Party report the cultivation period of rice in the NID.
5.A.5	Specified in paragraph 39 of the MPGs 3.D.1.a Inorganic N fertilizers – N ₂ O	The TERT was unable to reproduce the estimated annual N input from inorganic fertilizers for paddy rice and upland crops using the data and equations provided in NID table 5-45. During the review, the Party explained that it identified issues with the units, values for the rate of application of N and compound fertilizer, and the equations presented in NID table 5-45. To correct these issues, the Party submitted a file to the TERT on 28 January 2026 with the correct units and values for the rate of application of N and compound fertilizer and the correct equations for calculating annual N input from inorganic fertilizers for paddy rice and upland crops. The TERT recommends that the Party use correct units, AD for fertilizer application rates and equations for calculating annual N input from inorganic fertilizers for paddy rice and upland crops.
5.A.6	Specified in paragraph 39 of the MPGs	The Party reported that no AD were available for $Frac_{Renew}$ (NID p.5-52, footnote 30) and $Frac_{Remove}$ (NID p.5-52, footnote 31) and did not describe the assumptions used for these two parameters when calculating F_{CR}. During the review, the Party clarified that the value for $Frac_{Renew}$ was set to 1, as only annual crops are planted in the Republic of Korea. The Party also noted that

ID#	Reporting requirement	Description of area of improvement with recommendation or encouragement
	3.D.1.d Crop residues – N ₂ O	the values of “(1–Frac_{Remove})”, which forms part of the equation for calculating F_{CR}, were from the Annual Agriculture, Forestry and Fisheries Survey. The Party stated that it will include the relevant information in its next NID. The TERT recommends that the Party report the value and assumptions for Frac_{Renew}, as well as the values and source of Frac_{Remove}, for the calculation of F_{CR}.
5.A.7	Specified in paragraphs 24 and 40 of the MPGs 3.G Liming – CO ₂	The Party estimated CO₂ emissions from liming using the tier 2 method. The country-specific EFs for limestone and dolomite were reported as 0.0086 and 0.0157 kg CO₂/kg respectively and were developed on the basis of three-year experiments in pepper fields. Compared with the default EFs provided in the 2006 IPCC Guidelines (vol. 4, chap. 11, p.11.27) of 0.12 kg carbon/kg for limestone and 0.13 kg carbon/kg for dolomite, the country-specific EFs are substantially lower (lower by approximately one fiftieth for limestone and one thirtieth for dolomite). During the review, the Party provided summary information on how it derived country-specific EFs for limestone and dolomite in a document submitted to the TERT on the development of CO₂ EFs based on the use of urea and lime in accordance with the 2006 IPCC Guidelines. The Party explained that it conducted field experiments during the growing season over three years using limestone and dolomite with isotopes (¹³C) and quantified seasonal CO₂ fluxes by applying varying amounts of lime (0–2,000 kg/ha). It developed the country-specific EFs by performing a linear regression analysis on the amount of lime applied and ¹³CO₂ emissions. The Party clarified that the unit of the country-specific EFs is kg carbon/kg limestone or dolomite rather than kg CO₂/kg limestone or dolomite as reported in the NID. The TERT recommends that the Party use the correct unit for its country-specific EFs for limestone and dolomite in the NID and the correct EF values in CRT 3.G-J.

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 20 and 39 of the MPGs Land representation – NA	The TERT analysed the data contained in CRTs 4.1 and 4.A–4.F for the entire time series and found some issues with the reporting of land representation. The areas of land-use categories reported in CRT 4.1 for the end of one year are inconsistent with those reported for the beginning of the next year, which means that the TERT was unable to monitor the integrity of the time series. In addition, the total land area (i.e. the sum of the areas reported for the individual land-use subcategories) varies across the time series and between the CRTs. Furthermore, the total land area reported in CRT 4.1 increases overall from 1990 to 2022, while the total land areas calculated from the sum of the areas reported in CRTs 4.A–4.F decrease over the same period, with no explanation being provided for these differences. The TERT also noticed a sharp peak in total land area in CRT 4.1 in 1998. During the review, the Republic of Korea explained that the unstable trend is due to how changes in the total national land area may occur annually owing to land reclamation activities and administrative boundary adjustments in island regions. The Party provided the TERT with a document clarifying the variations in the total national land area. As referred to in NID section 6.1.2.2, the Party confirmed its intention to conduct research into using a higher-tier level to create a land-use matrix and commented that this approach is expected to clarify the reasons for the varying trends across the CRTs. The Party finally explained that the sharp increase in total land area observed for 1998 is an error. The TERT recommends that the Party report the correct total land area for 1998 and explain the variations in the total land area reported and the differing trends between the CRTs.
6.L.2	Specified in paragraphs 20 and 47 of the MPGs Land representation – NA	The TERT noted issues with the reporting of land representation and the accounting of land conversions between land-use categories. The Party used approach 1 from the 2006 IPCC Guidelines to report GHG emissions and removals from the LULUCF sector but did not report on most categories or pools, in particular for land-use change categories.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		During the review, the Party indicated its intention, as referred to in NID section 6.1.2.2, to conduct research into using a higher-tier level to create a land-use matrix. The Party clarified that it estimated N₂O emissions from land converted to cropland on the basis of the increase in cropland compared with 20 years previously. The Party also clarified that AD are only available for approach 1 and do not provide information on the previous land-use category prior to conversion to cropland and that it is therefore not feasible for the Party to identify whether N₂O emissions result from conversions of forest land, grassland or other land to cropland. The TERT recommends that the Party report estimates of carbon stock change pools for which there are methodologies in the 2006 IPCC Guidelines and transition to approach 2.
6.L.3	Specified in paragraph 55 of the MPGs 4. General (LULUCF) – NA	The Party did not report information on whether it estimated the emissions and subsequent removals from natural disturbances on managed lands and did not report information on the approach taken. It is also not clear to the TERT whether these estimates are included in the Party's national totals. During the review, the Party clarified the approach it used for estimating emissions and removals from natural disturbances. Direct emissions from biomass burning due to wildfires were estimated and reported in accordance with the 2006 IPCC Guidelines. Other natural disturbances were not estimated separately; however, their impacts on carbon stocks were reflected in the estimation of net emissions and removal. Consequently, emissions and subsequent removals associated with natural disturbances were included in the GHG inventory and reflected in the national totals. The TERT recommends that the Party include information on whether it took into account the emissions and subsequent removals from natural disturbances on managed lands and, in the event that it did, report information on the approach taken and how it is consistent with IPCC guidance.
6.L.4	Specified in paragraph 20 of the MPGs 4. General (LULUCF) – NA	The TERT noted discrepancies between the NID and CRTs in the types of forest reported under category 4.A total forest land. NID table 6-12 lists the types of forest reported alongside their areas. This list includes unstocked land under the forest type "other". However, the Party did not report the area of unstocked forest land in CRT 4.A. This resulted in different values being reported for total forest areas between the NID and CRT 4.A and between CRTs 4.1 and 4.A. During the review, the Party acknowledged the discrepancies in the reported forest land area between the NID and CRTs, which resulted from an input error. As indicated in NID section 6.1.1, all forest land in the country is considered managed land, and unmanaged forest land does not exist and so is reported as "NO". The Party noted that the national forest definition is consistent with that of the Food and Agriculture Organization of the United Nations. It explained that, under the national forest inventory system, managed forest land is classified as both stocked and unstocked forest land, with the latter comprising land from which tree cover has temporarily been removed owing to natural disturbances (e.g. forest fires) or anthropogenic activities (e.g. timber harvesting) but which is expected to regenerate, and thus remains classified as forest land. These areas are included in the GHG inventory under subcategory 4.A.1 forest land remaining forest land. The TERT recommends that the Party report consistent information on the structure of forest land in the NID and the CRTs.
6.L.5	Specified in paragraph 20 of the MPGs 4.F Other land – NA	The Party reported in CRT 4(III) that the area of other land converted to cropland was 27.59 kha in 2022 and that the N mineralized in mineral soils associated with loss of soil carbon from soil organic matter in subcategory 4(III).B.2.e other land converted to cropland is 3,968.43 kt N/year. The TERT noted that the N mineralized in mineral soils associated with loss of soil carbon from soil organic matter in this subcategory is extremely high (143.84 t N/ha). During the review, the Party informed the TERT of a factor 1,000 typographical error in the value of N mineralization in mineral soils associated with loss of soil carbon from soil organic matter and stated that it will correct this figure from around 4 Mt N/year to around 4 kt N/year for the next submission. In addition, the Party indicated that the estimates of N₂O emissions will be reassessed taking into consideration the nature of other land converted to cropland under approach 1.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		The TERT recommends that the Party use the correct value for the N mineralized in mineral soils associated with loss of soil carbon from soil organic matter and clarify its reporting on N ₂ O emissions from N mineralization/immobilization associated with the loss or gain of soil organic matter resulting from a change in land use or management of mineral soils.

Table 7

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

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
7.W.1	Specified in paragraph 32 of the MPGs 5.B.2 Anaerobic digestion at biogas facilities – CH ₄	In CRT 5.B, the Party reported emissions for subcategory 5.B.2 anaerobic digestion at biogas facilities as “NE” for 1990–2009 but reported numerical values for 2010 onward. The Party explained on NID page 7-22 that it reported emissions for 2010 onward but did not estimate any emissions for 1990–2009 owing to its determination that emissions were insignificant in this period. During the review, the Party stated that emissions first occurred for subcategory 5.B.2 in 2010. Since the value estimated for that year was 5 kt CO₂ eq, which is below the threshold for emissions considered as insignificant in accordance with paragraph 32 of the MPGs, the Party considered that emissions in prior years would be zero or insignificant. The TERT encourages the Party to clarify why emissions became reportable for 2010 onward and to reassess whether the reporting of “NE” is appropriate for earlier years in the time series if the activity is only considered to have started in 2010. The TERT also encourages the Party to document this clarification in the NID and/or the documentation box in CRT 5.B to improve transparency and comparability.
7.W.2	Specified in paragraphs 31, 39 and 40 of the MPGs 5.C.1 Waste incineration – CO ₂ , CH ₄ and N ₂ O	The TERT was unable to identify where the emissions and AD reported as “IE” in CRT 5.C for subcategory 5.C.1 waste incineration were reported. Furthermore, the Party reported that it is unknown whether energy recovery occurs at some waste incineration facilities. This limits transparency and traceability. During the review, the Party clarified that it reported emissions and AD for waste incineration with energy recovery in the corresponding category in the energy sector. Specifically, the Party reported renewable municipal waste under category 1.A fuel combustion – biomass, and non-renewable municipal waste under category 1.A fuel combustion – other fossil fuels. During the review, the Party also commented on how it allocated AD for waste incineration between the energy and waste sectors, including by providing specific references to the CRTs and details on how it split the AD across the two sectors. The TERT recommends that the Party report where it includes the emissions and AD reported as “IE” in CRT 5.C by specifying the energy sector categories under which it is reported, for example in the documentation box in CRT 5.C. The TERT notes that to demonstrate that this allocation does not result in any double counting, the Party could provide a reconciliation table (by year) showing the total amount of waste incinerated split into waste incineration with energy recovery (reported in the energy sector) and waste incineration without energy recovery.
7.W.3	Specified in paragraphs 45 and 47 of the MPGs 5.C.1 Waste incineration – CO ₂	In CRT 5.C, the Party reported CO₂ emissions for subcategory 5.C.1.a.ii.4 sewage sludge incineration as “NE” in 1996–1997 despite reporting non-zero values for the surrounding years. During the review, the Party informed the TERT that it did not estimate emissions for subcategory 5.C.1.a.ii.4 in 1996–1997 owing to the absence of historical AD. The Party added that it plans to consult with experts to discuss the need to apply data gap-filling techniques to improve the inventory. The TERT recommends that the Party address the 1996–1997 data gap, as appropriate, including through consultation with experts and the use of interpolation, splicing, surrogate data or other data gap-filling approaches consistent with IPCC guidance. The TERT also recommends that the Party document in the NID and/or the documentation box in CRT 5.C the approach used to address the data gap.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
7.W.4	Specified in paragraph 24 of the MPGs 5.D.2 Industrial wastewater – CH ₄ and N ₂ O	The TERT was unable to assess the consistency of estimates of sludge removed for subcategory 5.D.2 industrial wastewater across the time series because the information reported on the BOD-to-COD conversion factors was insufficient. Furthermore, the TERT found that the information on the development and application of country-specific CH₄ EFs for subcategory 5.D.2 was insufficient, given that these factors were derived from GHG concentration measurements at a subset of major plants for 2013–2020, while the inventory time series covers 1990–2022. During the review, the Party explained that the 2006 IPCC Guidelines do not provide a methodology or default EF for estimating N₂O emissions and BOD concentration for sludge removed. However, the Party commented that it will continue its efforts to develop country-specific parameters. The Party provided additional information on sector-specific BOD-to-COD conversion factors and explained that samples were collected over a 10-year period (2004–2014) to analyse the correlation between BOD and COD. On the basis of this analysis, the Party developed and applied conversion factors for estimating emissions for subcategory 5.D.2. The Party reported that it recalculated the entire time series after developing these conversion factors and that it ensured the representativeness of the country-specific EFs by consistently applying the methodology across the entire time series (1990–2022). The TERT encourages the Party to improve the estimation of sludge removed, including by collecting additional industrial N AD and assessing whether surrogate data or other approximation approaches may be applied. The TERT also encourages the Party to explain in more detail the BOD-to-COD conversion factors applied in estimating emissions for subcategory 5.D.2. The TERT further encourages the Party to clarify in the NID and/or the relevant CRT documentation box how it developed the country-specific CH₄ EFs and applied them across the entire time series.

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

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
8.1	Specified in paragraph 60 of the MPGs	The Republic of Korea reported on the national circumstances relevant to progress made in implementing and achieving its NDC but did not include information on how its national circumstances affect GHG emissions and removals over time. During the review, the Republic of Korea stated that it reported detailed information on its national circumstances and provided detailed AD for each sector. The Party referred the TERT to BTR1 chapter I, which states that a decoupling of economic growth from overall GHG emissions has been observed since 2018. The Republic of Korea also stated that it plans to report in future BTRs on how its national circumstances affect its GHG emissions and removals. The TERT recommends that the Party report information on how its national circumstances affect GHG emissions and removals over time.

Table 9

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

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
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 65 of the MPGs	The Republic of Korea reported in BTR1 section 2.1.1 and CTF table 1 that the indicator selected to track progress towards the implementation and achievement of its NDC is annual national total GHG emissions (excluding LULUCF). According to BTR1 table II-19 and the CTF appendix, the scope and coverage of the NDC also include the LULUCF sector. The TERT noted that it is unclear how the contribution of LULUCF will be assessed and how changes in emissions and removals from LULUCF will be tracked to enable a comprehensive assessment of overall progress in implementing and achieving the NDC. During the review, the Republic of Korea explained that it reported its annual net GHG emissions (including LULUCF) in BTR1 chapter I. The Party stated that in future BTRs, it will present annual net GHG emissions (including LULUCF) as an indicator selected to track progress in implementing and achieving the NDC to ensure consistency with the existing method used to calculate the NDC. The TERT recommends that the Republic of Korea provide information on how its chosen indicator is relevant to the NDC, the scope and coverage of which also include LULUCF.
10.2	Specified in paragraph 71 of the MPGs	In CTF table 3, the Party reported “NA” in four rows related to optional information on accounting of its first NDC consistent with decision 4/CMA.1. During the review, the Republic of Korea explained that it reported this information as “NA” because this information is only mandatory for the second and subsequent NDCs. The TERT encourages the Party to report information on accounting of its first NDC consistent with decision 4/CMA.1.
10.3	Specified in paragraph 73 of the MPGs	The TERT noted that CTF table 2 states that the following sectors are defined differently in the NDC than in the NIR: power generation, industry, building, transportation, agriculture/livestock farming/fisheries, waste, and carbon sinks (LULUCF). The Party did not explain these differences in the BTR1. During the review, the Republic of Korea explained that the NDC sectors are a reconfiguration of the NIR sectors, enabling the practical establishment and implementation of mitigation PaMs by grouping them in a way that is aligned with key policies or industry sectors. This also helps the Party to manage the performance of key domestic policies, such as the national emissions trading system and the First National Framework Plan for Carbon Neutrality and Green Growth. The TERT recommends that the Party provide information on how sectors in the NDC are defined differently than in the NIR.
10.4	Specified in paragraph 76(c) of the MPGs	The Republic of Korea’s GHG inventory reported in the NIR was compiled on the basis of methodologies from the 2006 IPCC Guidelines and GWPs from the AR5 and includes NF₃. The GHG inventory used for the NDC was compiled on the basis of methodologies from the <i>Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories</i> and GWPs from the AR2 and does not include NF₃. In the BTR1 (section 2.2.2) and CTF table 3, the Party acknowledges the differences in the targeted GHGs, calculation methodologies and common metrics between the NDC and NIR. However, the TERT found little information in the BTR1 on the inconsistency between the GHG values excluding LULUCF in CTF table 4 for 2021 and 2022 with the values reported in the GHG inventory in the NIR. During the review, the Republic of Korea referred the TERT to annex 3 of the NIR, which provides more detailed information on the variations between the two sets of IPCC methodological guidance. However, this information was not sufficient for the TERT to assess the inconsistencies. The Party stated that as the Second National Framework Plan for Carbon Neutrality and Green Growth is scheduled to be established in 2026 on the basis of the 2006 IPCC Guidelines, it plans to ensure statistical consistency by applying the 2006 IPCC Guidelines to

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		track the 2030 NDC. The Republic of Korea is also considering using GWPs from the AR5 for its NDC.
		The TERT recommends that the Party clarify all differences due to methodological inconsistencies between the GHG inventory used for the NDC and the GHG inventory in the NIR.
10.5	Specified in paragraph 77(b) of the MPGs	In CTF table 4, the Republic of Korea did not fully report information on GHG emissions and removals consistent with the coverage of its NDC, as the GHG emissions reported for 2021 and 2022 were not net emissions that included LULUCF. During the review, the Republic of Korea explained that the net emissions required to achieve the 2030 NDC target are calculated by taking into account LULUCF removals from the national inventory and future mitigation results from carbon capture, utilization and storage and internationally transferred mitigation outcomes under Article 6 of the Paris Agreement. In the BTR1, uncertainty exists in the calculation of net emissions, as the results for carbon capture, utilization and storage and internationally transferred mitigation outcomes are not yet quantifiable. The TERT recommends that the Republic of Korea report information in CTF table 4 on GHG emissions and removals consistent with the coverage of its NDC.

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

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
11.1	Specified in paragraph 82 of the MPGs	In CTF table 5, the Republic of Korea did not report the start year of implementation for the policy on the establishment of a future power grid system. During the review, the Republic of Korea explained that it did not report the start year of implementation for the policy on the establishment of a future power grid system because the start year of implementation has not yet been decided. The TERT recommends that the Party, to the extent possible, report the start year of implementation for all PaMs. If the Party deems that it is not possible to report this information, the TERT recommends that the Party provide an explanation for this in the BTR.
11.2	Specified in paragraph 83 of the MPGs	The Republic of Korea did not report the costs and non-GHG mitigation benefits for each action, policy and measure or how the mitigation actions interact with each other, as appropriate. During the review, the Republic of Korea explained that it focused on mandatory (“shall”) provisions of the MPGs when compiling its BTR1. The Party stated that the Government of the Republic of Korea manages the costs and finances of GHG mitigation actions and PaMs at the national level and that the Government has set up the Climate Response Fund to support and manage the key financial resources allocated to these actions and PaMs. The Government has also established the GHG Reduction Responsive Budgeting System, which is an institutional framework for managing mitigation costs and investments. This system analyses the impact of national budgets on GHG emissions in advance and incorporates the results into fiscal management. The Party also stated that it has established an air pollutant inventory that includes non-GHGs and has implemented various pollutant reduction policies through initiatives such as the National Air Quality Improvement Plan. The Government plans to use data from these initiatives to research the co-mitigation effects on GHGs and non-GHGs resulting from the implementation of actions and PaMs. Finally, the Party stated that there are methodological limitations and a lack of relevant data related to quantitative assessments of interactions between individual actions and PaMs. The TERT encourages the Republic of Korea to provide information in the description column of CTF table 5 or in the BTR on costs and non-GHG mitigation benefits of each action, policy and measure reported and on how the mitigation actions interact with each other, and if appropriate, explain why this information is not provided.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
11.3	Specified in paragraph 85 of the MPGs	In CTF table 5, the Republic of Korea only reported estimates of expected and achieved GHG emission reductions for a few of its actions and PaMs. When it did report such estimates, these were mainly reported for 2021 and 2022, but not 2030. Furthermore, the Party reported the effect of the PaMs on its emissions trading system and target management system as “IE”. During the review, the Republic of Korea explained that it is very challenging to quantify the expected and achieved emission reductions of individual actions and PaMs owing to the interactions between actions and PaMs and a lack of data for analysing their specific mitigation effects. The macro-level policy directions and sectoral reduction targets for achieving the NDC also make it technically challenging to estimate the expected and achieved GHG emission reductions for individual actions and PaMs using a bottom-up approach. The Party stated that the Government will explore ways to advance estimation methodologies that account for policy interactions and the aim is to include the expected and achieved GHG emission reductions for individual actions and PaMs, including for 2030, in future BTRs, where possible. The Party also stated that it reported the effect of the PaMs on its emissions trading system and target management system as “IE” because other mitigation activities and investments have resulted from those PaMs. The TERT recommends that the Party, to the extent possible, estimate the expected and achieved GHG emission reductions for each of its actions and PaMs and report these estimates in CTF table 5. If this is not possible, the TERT recommends that the Party explain the reason for this. If the Party reports the effect of any of its actions or PaMs as “IE”, the TERT recommends that the Party indicate the actions or PaMs in which these effects have been included.
11.4	Specified in paragraph 86 of the MPGs	The Republic of Korea did not report on the methodologies and assumptions used to estimate the GHG emission reductions or removals due to each action, policy and measure. During the review, the Republic of Korea provided information on the methodologies and assumptions used to estimate the GHG emission reductions for the PaMs on phasing down ageing coal power plants, increasing mandatory biodiesel blend ratio, extended producer responsibility system and high value added timber utilization. The Party also provided information on the methodologies used for afforestation, forest restoration and marine forest creation. The TERT recommends that the Party, to the extent available, describe the methodologies and assumptions used to estimate the GHG emission reductions or removals due to each action, policy and measure.
11.5	Specified in paragraph 88 of the MPGs	The Republic of Korea reported in the BTR1 (section 3.3.3) that it participates in international community efforts to reduce GHG emissions from international transport, such as aviation and shipping, and has established domestic implementation measures and specific plans for reducing these emissions. However, the BTR1 does not identify any actions or PaMs that influence GHG emissions from international transport. During the review, the Republic of Korea provided information on the Act on Management of International Aviation Carbon Emissions, which was enacted in February 2024 and establishes a systematic framework for managing emissions from the aviation sector. The Government of the Republic of Korea is preparing to enforce a mandatory 1 per cent blending requirement for sustainable aviation fuel for all international flights departing from domestic airports, starting in 2027. The Party is also continuously improving operational efficiency by advancing air traffic flow management and expanding direct air routes. In the shipping sector, the key PaMs influencing GHG emissions from international transport primarily focus on promoting eco-friendly ships and expanding the supply of alternative maritime power. The TERT encourages the Party to identify its actions and PaMs that influence GHG emissions from international transport or, if the Party does not have any actions or PaMs influencing GHG emissions from international transport, to state this clearly.

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
11.6	Specified in paragraph 89 of the MPGs	The Republic of Korea did not provide information about how its actions and PaMs are modifying longer-term trends in GHG emissions and removals. During the review, the Republic of Korea stated that the projections presented in the BTR1 reflect the effects of actions and PaMs implemented up until 2021. These actions and PaMs thereby influence longer-term trends in GHG emissions and removals. The TERT encourages the Party, to the extent possible, to provide information about how its actions and PaMs are modifying longer-term trends in GHG emissions and removals.
11.7	Specified in paragraph 90 of the MPGs	The Republic of Korea did not provide detailed information on the assessment of economic and social impacts of response measures. During the review, the Republic of Korea explained that it focused on mandatory (“shall”) provisions of the MPGs when compiling its BTR1. The Party stated that the Government, led by the Presidential Commission on Climate Crisis Response, which oversees national climate policy, is assessing the overall socioeconomic impacts of GHG mitigation measures and the transition to carbon neutrality. These impacts include job creation and transition, as well as national industrial competitiveness. The TERT encourages the Party, to the extent possible, to provide detailed information on the assessment of economic and social impacts of response measures.

Table 12

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

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
NA	NA	No areas of improvement identified

Table 13

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

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
13.1	Specified in paragraph 94 of the MPGs	The Party did not report a WAM projection or a WOM projection of all GHG emissions and removals. During the review, the Party noted that it focused on reporting a WM projection when compiling its BTR1 because this was the first time that it had developed and made such a projection available to the international community. The Party stated that it plans to develop methodologies and criteria for a WAM projection and WOM projection with a view to including these projections in future BTRs. The TERT encourages the Party to report a WAM projection and a WOM projection of all GHG emissions and removals or to clarify why these projections are not reported.
13.2	Specified in paragraph 96 of the MPGs	In its reporting on projections, the Party: (a) Provided a high-level description of the approach used for projections, stating that sector-specific technical working groups reviewed various econometric models and other projection methodologies and selected the most appropriate methods. However, the Party did not report information on individual models and methodologies selected and used for projections; (b) Did not report information on assumptions on PaMs included in the WM projections; (c) Did not report information on sensitivity analysis for any of the projections, together with a brief explanation of the methodologies and parameters used. During the review, the Party provided the TERT with a separate document containing descriptions of the models and methodologies used for each sector, together with sector-specific inputs and assumptions. The Party added that PaMs implemented up until 2021 are reflected in the projections and have influenced longer-term trends. However, the BTR1 does not include assumptions used for

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
		individual PaMs. The Party stated that it plans to consider ways of providing such information on PaMs in future BTRs. In terms of sensitivity analysis, the Party explained that it focused on reporting a WM projection when compiling its BTR1 because this was the first time that it developed and made such a projection available to the international community. The Party stated that it plans to include a brief explanation of the methodologies and parameters used for sensitivity analysis in future BTRs. The TERT encourages the Party to report information on: (a) Individual models and methodologies selected and used for projections; (b) Assumptions on PaMs included in the WM projections; (c) Sensitivity analysis for any of the projections, together with a brief explanation of the methodologies and parameters used.
13.3	Specified in paragraph 98 of the MPGs	In its reporting on projections, the Party did not report projections on a sectoral basis in CTF table 7 or the BTR1. In addition, the Party reported projections by gas, but the aggregate sum is not consistent with the total and net emissions. During the review, the Party provided the TERT with a separate document containing a table and a graph of projections up until 2040 disaggregated by sector. However, the document does not include a description of emission trends. The Party confirmed that there was a rounding discrepancy (due to differences in the units used in the sectoral calculations) in the aggregate sum of projections by gas in CTF table 7 and BTR1 table II-67 and that the total and net emissions reported are correct. The TERT recommends that the Party report projections on a sectoral basis and report projections by gas that are consistent with the total and net emissions.
13.4	Specified in paragraph 97 of the MPGs	In CTF table 10, the Party included projections of two key indicators (net GHG emissions, including LULUCF and total GHG emissions, excluding LULUCF). However, in BTR1 section 2.1.2 (and CTF tables 1 and 4), the Party specified that the indicator selected to track progress in implementing and achieving the NDC is annual national total GHG emissions (excluding LULUCF). The TERT noted that it is unclear whether the projections of key indicators to determine progress towards the Party's NDC (in CTF table 10) exclude NF₃ in accordance with the scope and coverage of the Party's NDC. During the review, the Party stated that it will also present annual net GHG emissions (including LULUCF) as a selected indicator in future BTRs to ensure consistency with the existing method used to calculate the NDC. The Party confirmed that the projections of key indicators in CTF table 10 include NF₃ despite NF₃ being excluded from the indicator selected to track progress in implementing and achieving the NDC. The TERT recommends that the Party provide projections of key indicators to determine progress towards its NDC in CTF table 10 that are consistent with its description of those indicators.

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

<i>ID#</i>	<i>Reporting requirement</i>	<i>Description of area of improvement with recommendation or encouragement</i>
NA	NA	No areas of improvement identified

Annex

Documents and information used during the review

A. Reference documents

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

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

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

EEA. 2005. *EMEP/CORINAIR emission inventory guidebook – 2005*. Technical report no. 30. Copenhagen: EEA.

“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. 1997. *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. J.L. Houghton, L.G. Meira Filho, B. Lim, et al. (eds). Paris: IPCC/Organisation for Economic Co-operation and Development/International Energy Agency. Available at <https://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html>.

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/193408>

NDC of the Republic of Korea. Available at <https://unfccc.int/NDCREG>.

NID of the Republic of Korea. Available at <https://unfccc.int/first-biennial-transparency-reports>.

B. Additional information provided by the Party

Responses to questions during the review were received from Donghyuk Shin (Ministry of Climate, Energy and Environment of the Republic of Korea), including additional material. The following references were provided by the Republic of Korea and may not conform to UNFCCC editorial style as some have been reproduced as received:

National Institute of Agricultural Sciences. 2017. *Development of CO₂ emission factor caused by use of urea and lime according to 2006 new guideline*.

Republic of Korea. 2015. *First Master Plan for National Greenhouse Gas Inventory (2015-2019)*.

Republic of Korea. 2020. *Second Master Plan for National Greenhouse Gas Inventory (2020-2024)*.

Republic of Korea. 2026. *Note for TERT (2024_NID_CRT)(Republic of Korea)_260128*.