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

Addendum

Summary

This addendum to the report on the technical expert review of the first biennial transparency report of Bulgaria, 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 Sofia.

* In the symbol for this document, 2025 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
CKD	cement kiln dust
CO	carbon monoxide
CO_2	carbon dioxide
CRF	common reporting format
CRT	common reporting table
CSC	carbon stock change
CTF	common tabular format
DE%	digestible energy expressed as a percentage of gross energy
DOM	dead organic matter
EF	emission factor
ETF	enhanced transparency framework under the Paris Agreement
EU	European Union
EU ETS	European Union Emissions Trading System
Eurostat	statistical office of the European Union
FAOSTAT	statistical database of the Food and Agriculture Organization of the United Nations
GE	gross energy intake
GHG	greenhouse gas
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	nitrogen
N_2O	nitrous oxide
NA	not applicable
NDC	nationally determined contribution
NE	not estimated
Nex	nitrogen excretion
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
QA/QC	quality assurance/quality control
TERT	technical expert review team
VS	volatile solid(s)
WAM	‘with additional measures’
WM	‘with measures’

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 Bulgaria 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 paragraphs 10(d) and 118 of the MPGs	Bulgaria's BTR1 does not include sections on technology development and transfer and capacity-building support provided under Articles 10–11 of the Paris Agreement. During the review, Bulgaria explained that, given the absence of a fully operational national system for tracking international climate-related support when preparing its BTR1, it did not identify information on technological or in-kind support for technology development and transfer or capacity-building support provided in 2021–2022 that could be reported in accordance with paragraphs 126–129 of the MPGs. The TERT encourages Bulgaria to follow the outline in chapter V of the MPGs and include all sections and subsections specified therein. If no information on certain sections or subsections is available at the time of preparing the submission, the TERT encourages Bulgaria to include the respective section or subsection in its BTR together with an explanation for not reporting the related information, including any associated challenges or limitations it faced, as well as any planned improvements.

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 30–31 of the MPGs Completeness	Bulgaria reported categories for which methods are included in the 2006 IPCC Guidelines and used notation keys for completing the CRTs. However, Bulgaria did not report complete information on the use of "NE" and "IE" in CRT 9, where information on source/sink categories, explanations for the use of notation keys and details of the allocation of emissions are missing for several entries. As a result, the TERT was unable to complete a full cross-sectoral assessment of the Party's use of notation keys in accordance with the MPGs. During the review, Bulgaria provided the missing explanations for the use of notation keys in CRT 9 and indicated that it will include them in the "NK explanation" section of the CRTs in the 2026 submission. The TERT recommends that the Party complete CRT 9 by ensuring that information on all source/sink categories, explanations for the use of notation keys and details of the allocation of emissions are provided for all entries reported as "NE" or "IE", and that complete information is provided in the "NK explanation" field (or equivalent) in the ETF GHG inventory reporting tool, to enable a complete cross-sectoral assessment of the Party's use of notation keys in accordance with paragraph 31 of the MPGs.

[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.

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 23 of the MPGs 1.A Fuel combustion – sectoral approach – liquid and solid fuels – CO_2	Bulgaria reported in its NID (pp.71–83 and 119–121) information on the methodologies used for estimating GHG emissions for categories 1.A.1 energy industries, 1.A.2 manufacturing industries and construction, 1.A.3.b road transportation and 1.A.4 other sectors. The TERT noted that categories 1.A.1 – liquid and solid fuels, 1.A.2 – liquid and solid fuels, 1.A.3.b – liquid fuels and 1.A.4 – liquid and solid fuels are among the Party's key categories according to NID table 22 (p.70). The Party used a tier 1 method for estimating CO_2 emissions from all liquid fuels and some solid fuels for those categories (NID pp.71–78). However, the Party did not provide sufficient information in its NID on the reasons why it could not apply higher-tier estimation methods for those categories, which is not in line with paragraph 23 of the MPGs. During the review, the Party informed the TERT that a tier 1 method was applied for estimating emissions from liquid fuels and some solid fuels (e.g. coking coal, sub-bituminous coal, oil shale and tar sands, brown coal briquettes, patent fuel, gas coke, coal tar, gas works gas, coke oven gas, blast furnace gas and oxygen steel furnace gas). The Party explained that the main reason for not applying higher-tier estimation methods for the above-mentioned fuels was because of their insignificant shares in total fuels consumed in the country. However, this information was not clearly explained in the Party's NID. The TERT recommends that the Party increase the transparency of its reporting by clearly documenting in the relevant sections of the NID the reasons why the methodological choice for estimating GHG emissions from significant sources for liquid fuels and solid fuels for the above-mentioned categories was not in line with the corresponding decision tree of the 2006 IPCC Guidelines (vol. 2, chap. 1, figure 1.2).
3.E.2	Specified in paragraph 39 of the MPGs 1.A.3.e Other transportation – gaseous fuels – CO_2	In its NID (pp.138–140), Bulgaria provided information on the methods, AD and EFs used to estimate GHG emissions for subcategory 1.A.3.e other transportation. The TERT noted that subcategory 1.A.3.e – gaseous fuels is a key category according to NID table 22 (p.70). However, the Party did not report sufficient information in the NID on the methodologies used, the rationale for the choice of methods and the descriptions, assumptions, references and sources of information used in accordance with paragraph 39 of the MPGs. During the review, Bulgaria explained the method applied to estimate emissions for subcategory 1.A.3.e – gaseous fuels, noting that it used the country-specific EFs presented in NID tables 27–29 (pp.75–78) in the section on the methodologies used for the different categories. The TERT recommends that the Party clearly document in the relevant section of its NID the methodologies used for estimating GHG emissions for subcategory 1.A.3.e – gaseous fuels, including the rationale for the choice of method, and the descriptions, assumptions, references and sources of information used for the EFs and AD in order to increase the transparency of the reporting.
3.E.3	Specified in paragraph 31 of the MPGs 1. General (energy sector)	Bulgaria reported emissions for some subcategories in the energy sector as "NO" for 1988 in several NID tables (e.g. table 67, p.110; table 70, p.112; and table 86, p.134), even though GHG emissions from these activities were significant in 1990. However, the Party partially explained in its NID (section 3.3.5, p.70) the reasons for not reporting this information for 1988 for some subcategories. During the review, the Party provided a brief explanation for using the notation key "NO", which helped the TERT to identify that its use was not in accordance with the reporting requirements for the use of notation keys as per paragraph 31 of the MPGs. The Party explained that some subcategories were reported as "NO" where it was unable to estimate and report GHG emissions for 1988 and 1989 owing to incomplete and inconsistent data sources, even if those emissions were in fact estimated and included under other categories in the energy sector. The TERT recommends that the Party use appropriate notation keys for those subcategories of the energy sector for 1988 and 1989 where numerical values for the GHG emission estimates are not available and clearly indicate why emissions from the sources and associated data for specific sectors, categories or gases are

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		not reported. Specifically, if the Party is unable to report GHG emissions for 1988 and 1989 owing to an allocation mismatch between data sources (data inconsistency), but those emissions are in fact estimated and included under other categories, the notation key "IE" should be used in the NID and the CRTs.
3.E.4	Specified in paragraph 21 of the MPGs 1.A Fuel combustion – sectoral approach – liquid fuels – CO_2	Bulgaria reported in its NID (pp.71–83 and 125–130) information on the methodologies used for estimating GHG emissions for categories 1.A.1 energy industries, 1.A.2 manufacturing industries and construction, 1.A.3.b road transportation and 1.A.4 other sectors. The TERT noted that categories 1.A.1 – liquid fuels, 1.A.2 – liquid fuels, 1.A.3.b – liquid fuels and 1.A.4 – liquid fuels are key categories according to NID table 22 (p.70). The Party used default EFs for estimating CO_2 emissions for those categories, which is not in accordance with paragraph 21 of the MPGs, according to which each Party should make every effort to use a recommended method (tier level) for key categories in accordance with the 2006 IPCC Guidelines (vol. 2, chap. 1, figure 1.2, p.1.9). During the review, Bulgaria explained that a tier 1 method was applied for estimating emissions from liquid fuels for the above-mentioned categories, which was not explicitly stated by the Party in its NID. The TERT recommends the Party use higher-tier methods for all key categories, specifically for estimating emissions from liquid fuels for categories 1.A.1, 1.A.2, 1.A.3.b and 1.A.4 in order to increase the accuracy of the estimates and, if unable to do so, document in the NID the reasons for not following the relevant decision tree from the 2006 IPCC Guidelines.
3.E.5	Specified in paragraph 21 of the MPGs 1.A Fuel combustion – sectoral approach – solid fuels – CO_2	Bulgaria reported in its NID (pp.71–83) information on the methodologies used for estimating GHG emissions for categories 1.A.1 energy industries, 1.A.2 manufacturing industries and construction, 1.A.3.b road transportation and 1.A.4 other sectors. The TERT noted that categories 1.A.1 – solid fuels, 1.A.2 – solid fuels, 1.A.3.b – solid fuels and 1.A.4 – solid fuels are key categories according to NID table 22 (p.70). The Party used default EFs for estimating CO_2 emissions for those categories, except for anthracite, other bituminous coal, lignite and petroleum coal (NID, p.73), which is not in accordance with paragraph 21 of the MPGs, according to which each Party should make every effort to use a recommended method (tier level) for key categories in accordance with the 2006 IPCC Guidelines (vol. 2, chap. 1, figure 1.2, p.1.9). During the review, Bulgaria explained that a tier 2 method was applied for estimating emissions from solid fuels for the above-mentioned categories, as explicitly stated by the Party in its NID (pp.71–73). The Party also explained that, owing to the insignificance of the shares of CO_2 emissions from other solid fuels such as coking coal, sub-bituminous coal, oil shale and tar sands, brown coal briquettes, patent fuel, gas coke, coal tar, gas works gas, coke oven gas, blast furnace gas and oxygen steel furnace gas, a tier 1 method was applied for estimating the GHG emissions. The TERT encourages the Party to use higher-tier methods for all key categories, specifically for estimating emissions from all solid fuels for categories 1.A.1, 1.A.2, 1.A.3.b and 1.A.4 in order to increase the accuracy of the estimates.
3.E.6	Specified in paragraph 35 of the MPGs 1. General (energy sector)	Bulgaria reported in its NID (pp.37–45) information on the QA/QC system implemented for the energy sector. The TERT noted that the Party did not provide information on category-specific QC procedures for the key categories in the energy sector, which is not accordance with paragraph 35 of the MPGs. During the review, Bulgaria clarified that the unified QA/QC system was implemented as part of the GHG inventory compilation process for the energy sector and provided a brief description of the system. The TERT encourages the Party to apply additional category-specific QC procedures for the key categories in the energy sector, as identified in NID table 22 (p.70), and for categories in which significant methodological changes and/or data revisions have occurred, noting that it is good practice to give additional attention to the key categories when implementing QA/QC procedures.

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 20 of the MPGs 2. General (IPPU) – CO_2	The Party reported direct and indirect CO_2 emissions from other solvent use in NID table 130 (pp.234–235), as well as direct CO_2 emissions from domestic solvent use, other product use and vegetable oil production in NID tables 153, 156 and 159 (pp.266–267, 270 and 273) respectively. The TERT notes that CO_2 emissions from these sources are due to atmospheric oxidation of NMVOC emissions; however, they were not reported as indirect CO_2 emissions in CRT 6. During the review, the Party recognized that there are inconsistencies between the NID and the CRTs for other solvent use and vegetable oil production, which are partly due to technical issues encountered when completing the CRTs. In addition, the Party agreed that CO_2 emission estimates for other solvent use, domestic solvent use, other product use and oil production are indeed indirect CO_2 emissions resulting from atmospheric oxidation of NMVOCs. The TERT recommends that the Party reallocate indirect CO_2 emissions from atmospheric oxidation of NMVOCs reported in CRT 2(I).A-H for category 2.G.4 other to CRT 6, in line with the 2006 IPCC Guidelines (vol. 1, chap. 7). Furthermore, the TERT recommends that the Party, in its next NID, clarify how indirect CO_2 emissions from solvent use and other product use are accounted for in the inventory by clarifying that the estimates of CO_2 emissions from domestic solvent use, other solvent use, other product use and vegetable oil production relate to indirect CO_2 emissions.
4.I.2	Specified in paragraphs 26 and 39 of the MPGs 2.A.1 Cement production – CO_2	The Party reported in its NID (p.170) that CO_2 emissions from cement production were calculated using a tier 2 method for 1988–2021, while emissions for 2022 were calculated on the basis of the operators' EU ETS reports. The TERT noted that it is not clear from the description in the NID whether the method used to estimate CO_2 emissions is consistent across the time series. During the review, the Party explained that there is no inconsistency in the method used, as data corresponding to information in the verified reports submitted under the EU ETS were requested by official letter from the operators for 1988–2021. The TERT recommends that the Party clarify in the NID that the method used for estimating CO_2 emissions from cement production is consistent over the time series. The TERT also encourages the Party to ensure that a consistent estimation method is applied across the entire time series, including when using operator-specific data comparable to those reported under the EU ETS.
4.I.3	Specified in paragraph 39 of the MPGs 2.A.1 Cement production – CO_2	The Party reported in its NID (p.170) that the CKD correction factor for estimating CO_2 emissions from cement production was assumed to be 1.02 for 1988–2008 and 1.00 for 2009 onward. The Party further stated that the factor for 2009 onward is based on the modern status of cement plants and the fact that the cement plants recycle 100 per cent of their CKD. However, the NID does not provide supporting evidence for the assumption that 100 per cent of CKD has been recycled since 2009. During the review, the Party explained that the information supporting a CKD correction factor of 1.00 for 2009 onward is based on verified reports submitted under the EU ETS and that information prior to 2009 is most likely based on official requests to the cement producers. Since 2009, all cement producers have participated in the EU ETS. The TERT recommends that the Party explain in the NID that the CKD factor of 1.00 for 2009 onward is based on information from verified reports submitted under the EU ETS and covers all cement producers.
4.I.4	Specified in paragraph 39 of the MPGs 2.A.2 Lime production – CO_2	The Party reported in its NID (p.173) that data on total lime production were provided by the National Statistical Institute; however, there is no mention of whether non-marketed lime is included in the data. The 2006 IPCC Guidelines (vol. 3, chap. 2, section 2.3.1.4) state that reported production typically accounts for only part of the actual production (i.e. product that is sold on the market).

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		During the review, the Party explained that the lime produced for the operators' own needs was also taken into account when estimating the emissions, such as soda ash production plants (the largest producer holds about 80–90 per cent) and paper production plants. The TERT recommends that the Party explain in the NID that non-marketed lime is taken into account when calculating CO_2 emissions from lime production, which industries produce non-marketed lime, and how data on non-marketed lime are collected.
4.I.5	Specified in paragraph 20 of the MPGs 2.A.3 Glass production – CO_2	The Party explained in its NID (p.176) that CO_2 emissions from soda ash use in glass production are reported under subcategory 2.A.4.b other uses of soda ash. The TERT noted that CO_2 emissions from soda ash use in glass production should be reported under category 2.A.3 glass production in accordance with the 2006 IPCC Guidelines (vol. 3, chap. 2, section 2.4.1.4). The TERT also noted that the Party is planning to reallocate emissions from soda ash use in glass production (NID p.178). During the review, the Party explained that emissions from soda ash use are reported under subcategory 2.A.4.b on the basis of apparent consumption calculated from production, imports and exports following recommendations from a previous review. The Party further explained that the emissions are not reported under subcategory 2.A.3 because the balance does not allow the share attributable specifically to glass production to be identified. The TERT recommends that the Party obtain the necessary data to reallocate CO_2 emissions from soda ash use in glass production to category 2.A.3 in accordance with the 2006 IPCC Guidelines. If all the necessary data are not available, the Party may wish to apply the guidance on resolving data gaps in the 2006 IPCC Guidelines (vol. 1, chap. 5, section 5.3).
4.I.6	Specified in paragraphs 26 and 39 of the MPGs 2.A.4 Other process uses of carbonates – CO_2	The Party reported in its NID (p.186) that AD on the amounts of carbonates used for desulphurization were obtained from EU ETS reports. However, there is no information on the data source used for the years prior to the introduction of the EU ETS. During the review, the Party explained that plant-specific data on the amounts of carbonates used were applied for the years prior to the introduction of the EU ETS. The TERT recommends that the Party clarify in the NID the data sources used for each year of the time series, including information on how time-series consistency was ensured and explaining that plant-specific data on the amounts of carbonates used were applied for the years prior to the introduction of the EU ETS. In addition, the TERT encourages the Party to ensure time-series consistency when integrating plant-specific data used prior to the introduction of the EU ETS with data derived from EU ETS reports.
4.I.7	Specified in paragraph 39 of the MPGs 2.A.4 Other process uses of carbonates – CO_2	The Party reported in its NID (p.186) that the EFs for calcium carbonate and magnesium carbonate used for estimating emissions from flue gas desulphurization are 0.440 and 0.522 t CO_2/t carbonate, respectively, in accordance with the 2006 IPCC Guidelines. However, the IEFs reported in NID table 122 (p.187) are below 0.440 t CO_2/t carbonate for 2010–2022. During the review, the Party explained that plant-specific AD on the amounts of carbonates used were obtained from EU ETS reports, and that only high-calcium limestone is used for flue gas desulphurization. It further explained that the AD reported in NID table 122 (p.187) refer to limestone with minor impurities, resulting in IEFs below 0.440 t CO_2/t limestone for 2010–2022. The TERT recommends that the Party clarify in the NID that only high-calcium limestone is used for flue gas desulphurization in Bulgaria, and that the AD reported in NID table 122 (p.187) refer to limestone with minor impurities, rather than calcium carbonate, resulting in IEFs below 0.440 t CO_2/t limestone for 2010–2022.
4.I.8	Specified in paragraph 39 of the MPGs 2.B.1 Ammonia production – CO_2	The Party reported in its NID (p.190) that the EFs for ammonia production for the whole time series were estimated using plant-specific data from the plants currently operating in the country, and that an IEF was used to recalculate the CO_2 emission estimates for the two closed ammonia-producing plants. The TERT noted

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		that without information on how the production technology of the two closed plants compares with that used in the two currently operating plants, it is difficult to assess whether the method applied by the Party to estimate emissions from the two closed plants results in accurate emission estimates. During the review, the Party explained that the production technology of the two closed plants was identical to that used by the two plants currently in operation; therefore, using the same IEF based on the two currently operating plants for the two closed plants is an appropriate assumption. The TERT recommends that the Party explain in the NID that the two closed plants, for which emissions were estimated using an IEF derived from the two currently operating plants, used the same production technology as the currently operating plants, thereby supporting the method applied by the Party for estimating emissions.
4.I.9	Specified in paragraph 39 of the MPGs 2.B.1 Ammonia production – CO_2	The Party reported in its NID (p.190) that CO_2 recovered for downstream use (urea production) was subtracted from the reported CO_2 emissions. However, there is no information in the NID on the data source used for the amounts of CO_2 recovered in urea production. In addition, there is no information on where else CO_2 emissions from urea use are reported in the inventory. During the review, the Party explained that data on urea production were obtained from the National Statistical Institute, and CO_2 recovered during urea production was calculated using the stoichiometric ratio. The Party also explained that some of the urea produced was exported and some was used in agriculture, with emissions from the use of urea reported under category 3.H urea application. The TERT recommends that the Party include in the NID information on the data source used for the amounts of CO_2 recovered in urea production and explain under which categories urea use is reported.
4.I.10	Specified in paragraph 39 of the MPGs 2.B.7 Soda ash production – CO_2	The Party reported in its NID (p.201) that coke used for calcination of limestone was considered as a fuel under the energy sector. According to the 2006 IPCC Guidelines (vol. 3, chap. 3, box 3.7), CO_2 emissions from coke used in soda ash production should be accounted for in the IPPU sector, and coke used in the production process should be deducted from the energy sector as a non-energy use of fuel. During the review, the Party explained that coke used for soda ash production is accounted for under category 2.B.7 soda ash production and deducted from the energy sector as a non-energy use of fuel. The TERT recommends that, in its next NID, the Party clarify that coke used in soda ash production is accounted for under category 2.B.7 and deducted from the energy sector as a non-energy use of fuel.
4.I.11	Specified in paragraph 39 of the MPGs 2.C.1 Iron and steel production – CO_2	The Party reported in its NID (p.214) that CO_2 emissions from pig iron production were reported together with basic oxygen furnace steel production for 1988–2008. The Party reported in the NID (p.211) that the production-specific EF for basic oxygen furnace steel production was calculated on the basis of the amount of carbon in the raw materials and final products. The TERT notes that, without further details on which raw materials and final products are accounted for in the carbon mass balance for the different processes of sintering, pig iron production and basic oxygen furnace steel production, it is difficult to assess the reported emissions. In addition, it is not clear from the NID whether emissions from integrated coke production are included in the carbon mass balance and, if so, where these emissions are reported in the inventory. During the review, the Party explained that the reported emissions cover the entire production from integrated coke production, sintering, blast furnace pig iron production and basic oxygen furnace steel production. It further explained that the emissions were calculated using a mass balance approach established in cooperation with the EU expert review team that conducted the review of the EU effort-sharing decision in 2012 and shared the calculation spreadsheet with the TERT. The Party also explained that emissions from integrated coke production were reported under the energy sector in accordance with the 2006 IPCC Guidelines.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT recommends that, in its next NID, the Party include a clear description of the method used for calculating CO_2 emissions from integrated iron and steel production for 1988–2008, including which inputs and outputs are included for each process and how emissions from integrated coke production were considered in the energy sector.
4.I.12	Specified in paragraph 39 of the MPGs 2.C.5 Lead production 2.C.6 Zinc production – CO_2	The Party reported in its NID (pp.220 and 222) that emissions from primary lead and zinc production were reported in CRTs 2.C.5 and 2.C.6 respectively. However, the NID does not mention whether there is secondary lead or zinc production in Bulgaria. During the review, the Party explained that data for the one plant producing primary and secondary lead and zinc were obtained from the EU ETS, and emissions from secondary lead and zinc production at that plant are therefore accounted for. In addition, there are two plants producing secondary lead and secondary zinc, respectively, that do not emit process emissions, and for which emissions from fuel used are accounted for under the energy sector. The Party confirmed that no reductants are used in processes at the secondary lead and zinc plants. The TERT recommends that, in its next NID, the Party explain that secondary lead and zinc production at the integrated lead and zinc production plant is accounted for under categories 2.C.5 and 2.C.6 respectively and that other secondary lead and zinc production does not result in process emissions.

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 35 of the MPGs 3. General (agriculture)	In its NID, Bulgaria used CRF codes instead of CRT codes to report the key emissions sources for the agriculture sector (NID table 163, p.277); an overview of subcategories for the agriculture sector (NID table 164, p.277); GHG emissions from enteric fermentation (NID table 165, p.278); the uncertainty of the subcategories under enteric fermentation (NID table 177, p.291); CH_4 emissions from manure management (NID table 178, p.292); N_2O emissions from manure management (NID table 193, p.301); the uncertainty of the subcategories under manure management for 2022 (NID table 196, p.301); N_2O EFs for agricultural soils (NID table 196, p.305); and the uncertainty of the subcategories under agricultural soils for 2022 (NID table 203, p.308). The TERT also noted that the mislabelling of categories made it difficult to cross reference the information in the NID with the CRTs and CRT reporting structure. It also created difficulties in verifying key categories, emission estimates and uncertainties. During the review, the Party explained that an error occurred in the NID, whereby CRF codes were used instead of the appropriate CRT codes, and that the codes for agriculture-related tables will be corrected for the 2026 submission. The TERT encourages Bulgaria to replace the CRF codes used in its NID with the appropriate CRT codes to ensure consistency between the NID tables and the CRTs.
5.A.2	Specified in paragraph 39 of the MPGs 3.A Enteric fermentation – CH_4	Bulgaria reported in its NID (p.289) that live weight data for most animal categories were provided by the Agrostatistics Department of the Ministry of Agriculture, Food and Forestry. The NID states that the data are not published and are considered to represent expert judgment. Bulgaria also reported that the live weight of animals is assumed to be constant over time. During the review, Bulgaria indicated that it will work in cooperation with experts from the Agrostatistics Department to improve the methodological robustness of the live weight data. Bulgaria added that it will request a clear justification of the statistical survey methods used to derive the live weight estimates and will provide this information in the section on improvements in its 2026 submission. The Party further explained that the live weight data could be reported for each year from 1988 onward, as data prior to 1988 are not available. The TERT recommends that Bulgaria improve the documentation on the methodologies used to derive live weight data by providing a clear justification of

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		the statistical survey methods used by the Agrostatistics Department, clarifying the basis for treating the data as expert judgment and assessing the possibility of developing year-specific live weights, particularly for the period after 1988.
5.A.3	Specified in paragraph 24 of the MPGs 3.B.4 Other livestock – CH_4	Bulgaria reported in its NID (p.289) that it used default parameters from the 2006 IPCC Guidelines (vol. 4, chap. 10, tables 10A-6 and 10A-9) to calculate the live weight of buffalo, goats, horses, mules and asses. The TERT noted that the use of default parameters in the absence of country-specific data may not accurately reflect national livestock characteristics and could affect the emission estimates. During the review, Bulgaria clarified that country-specific live weight data for buffalo and goats are available from the Ministry of Agriculture and Food, although not for the entire time series. The Party indicated that it will consider using these country-specific data in the future with the aim of improving the accuracy of the estimates while ensuring time-series consistency. The TERT encourages Bulgaria, where possible, to incorporate country-specific live weight data for buffalo and goats into the inventory's emissions estimates, while ensuring time-series consistency (e.g. through data interpolation) and document any data gaps in its next NID.
5.A.4	Specified in paragraph 39 of the MPGs 3.B.3 Swine – CH_4	In its NID (p.293), Bulgaria used a country-specific VS value of 0.23 kg dry matter/head/day for swine instead of the IPCC default value of 0.32 kg dry matter/head/day. The Party did not provide information on how this value was derived. During the review, Bulgaria clarified that the value of 0.23 kg dry matter/head/day is country-specific. To improve the accuracy of the VS estimates, swine were divided into subcategories beyond simply pigs for breeding and pigs for market. For each subcategory, different country-specific DE% and GE values were determined. The TERT recommends that Bulgaria provide a clear explanation in the NID of how the country-specific VS value for swine was derived, including the subcategory approach and associated DE% and GE values used, to enhance the transparency of the emission estimates for manure management.
5.A.5	Specified in paragraph 22 of the MPGs 3.B.3 Swine – CH_4	In its NID (p.293), Bulgaria reported that country-specific DE% and GE values were used for swine. The Party did not explain how the country-specific DE% and GE values were determined for each subcategory under swine. During the review, Bulgaria clarified that the country-specific DE% and GE values were derived from a study conducted for the national GHG inventory by Plovdiv Agrarian University on the development of a methodology for determining the excretion of volatile inorganic substances from pig and poultry farming in Bulgaria. The Party further indicated that these values were applied consistently across the time series. The TERT recommends that Bulgaria provide a detailed description in the NID of the methodology, data sources, assumptions and key parameters underlying the country-specific DE% and GE values used for each subcategory under swine and provide the main results of the referenced study.
5.A.6	Specified in paragraph 39 of the MPGs 3.B.3 Swine – CH_4	Bulgaria reported in its NID (p.295) that all farms with more than 50 sows store manure in liquid systems; all farms with 10–50 sows store manure in dry lot; and all farms with up to 10 sows use solid manure storage. The TERT notes that no data sources were provided for determining the relationship between the sow population size and the MMS used. During the review, Bulgaria clarified that this information is based on a study conducted jointly between Plovdiv Agrarian University and the Agrostatistics Department at the Ministry of Agriculture, Food and Forestry and that the study is considered to be representative of the entire country. The TERT recommends that Bulgaria provide a detailed description of the referenced study in the NID, including the methodology, data source and national representativeness of the study used to establish the relationship between the sow population size and MMS used.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
5.A.7	Specified in paragraph 39 of the MPGs 3.B.3 Swine – CH_4	In its NID (table 182, p.295), Bulgaria reported the shares of MMS for swine and sheep (e.g. liquid systems, solid storage, dry lot and pasture/range/paddock). However, this information was not reported in CRT 3.B(a) under "Additional information (for Tier 2)". During the review, Bulgaria clarified that information on the shares of MMS for swine and sheep was not included in CRT 3.B(a) owing to a technical issue encountered during the reporting process. Bulgaria further indicated that this issue has been resolved and that the MMS allocations for swine and sheep have been correctly included in the 2025 submission. The TERT encourages Bulgaria to ensure that the MMS allocations for livestock categories including swine and sheep are fully reported in CRT 3.B(a) in future submissions to ensure the completeness and transparency of the reported information.
5.A.8	Specified in paragraphs 35 and 47 of the MPGs 3.A.4 Other livestock – CH_4	Bulgaria did not report complete information on the shares of MMS for buffalo and horses in CRT 3.B(a), as the sum of the reported values for each of these species is not 100 per cent. Buffalo account for only 53 per cent, and horses for only 42 per cent. During the review, Bulgaria clarified that there was an error in the percentages of the shares of MMS for buffalo and horses reported in CRT 3.B(a) owing to a technical issue encountered when transferring the data from the CRF to the CRT format. The Party indicated that this issue has been resolved and that the sum of the percentage distributions for these categories is now 100 per cent. The TERT recommends that Bulgaria strengthen its QA/QC procedures relating to data transfer between different formats (e.g. from the CRF to the CRT format) to avoid similar technical issues in future submissions.
5.A.9	Specified in paragraph 39 of the MPGs 3.B Manure management – N_2O	In its NID (p.296), Bulgaria used country-specific data to report Nex rates for cattle, swine and poultry. However, the Party did not describe in detail the methodology used to calculate the country-specific Nex values for cattle, swine and poultry. During the review, Bulgaria clarified that the country-specific Nex values for cattle and swine were derived from a study on animal feed intake conducted in collaboration with the Institute of Animal Sciences. Using data on crude protein content in feed for mature dairy cattle, mature non-dairy cattle and heifers, together with the N content and percentage of indigestible N, daily Nex rates were calculated for each animal category using the equation daily N intake × % non-digested N × 365 = annual Nex. Experts from the Agricultural University of Plovdiv and Trakia University of Stara Zagora provided the country-specific Nex values for swine. The same general equation was applied to all swine categories, with specific adjustments for piglets under 20 kg and for pregnant and lactating sows. For piglets under 20 kg, 8 g N from the mother's milk was added to the daily N intake: (daily N intake + 8) × % non-digested N × 365 = annual Nex. For pregnant and lactating sows, feed intake was adjusted according to national swine growing standards: daily N intake (pregnancy) × % non-digested N × 302 + daily N intake (lactation) × % non-digested N × 63 = annual Nex. For poultry, annual Nex per head was estimated for laying hens, broilers, turkeys and other poultry using data from NID table 188 and equation 10.30 from the 2006 IPCC Guidelines (vol. 4, chap. 10). A weighted average was then calculated across categories for reporting in the CRTs. Bulgaria explained that more detailed methodological descriptions will be included in the next NID to further improve transparency. The TERT recommends that Bulgaria include a detailed description of the methodology, data sources, assumptions and category-specific adjustments used to calculate country-specific Nex rates for cattle, swine and poultry, including weighted averages for poultry and modifications for piglets and sows, to enhance the transparency of the estimates.
5.A.10	Specified in paragraph 24 of the MPGs 3.B.1 Cattle – N_2O	In its NID (table 184, p.297), Bulgaria used constant values for daily Nex for mature dairy cattle (267.2 g), mature non-dairy cattle (178.6 g) and bovine cattle and heifers (135.5 g). During the review, Bulgaria clarified that the values reported in its NID are country-specific and were derived from a study conducted by the Institute of

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		Animal Sciences in Kostinbrod on the acquisition of current data, scientific justifications and calculations for the diet of cows, sheep and pigs (digestible energy, average feed rations per day, amount of crude protein in the daily portion and the percentage of nitrogen in it). The study used data on crude protein content, N content and the proportion of indigestible N in feed to calculate daily Nex rates by animal category. Bulgaria added that year-specific data are not yet available, and efforts are ongoing within the Ministry of Agriculture and Food to include annual data in the national GHG inventory regulations. The study conducted by the Institute of Animal Sciences currently provides the most reliable data for estimating N_2O emissions for category 3.B manure management. The TERT encourages Bulgaria to work with the Ministry of Agriculture and Food to obtain and incorporate year-specific Nex data for cattle in the NID while continuing to document the methodology and assumptions used for the study conducted by the Institute of Animal Sciences in order to improve the transparency of the N_2O emission estimates.
5.A.11	Specified in paragraph 39 of the MPGs 3.B.4 Other livestock – N_2O	Bulgaria reported in its NID (table 188, p.299) that the Nex values for poultry are based on the quantities of poultry manure per day and the N content of poultry manure. Bulgaria did not explain how Nex rates for different poultry categories (laying hens, broilers, turkeys, ducks) were aggregated for reporting in CRT 3.B(b), including implied Nex rates (kg N $head^{-1}$ $year^{-1}$). During the review, Bulgaria clarified that Nex rates for different categories of poultry (laying hens, broilers, turkeys, ducks) were summarized in CRT 3.B(b) (kg N $head^{-1}$ $year^{-1}$) under subcategory 3.B.4.g N_2O and NMVOC emissions from poultry. Bulgaria further explained that the Nex rates were first estimated per head for laying hens and broilers, and then for turkeys and other poultry using data from NID table 188 and equation 10.30 from the 2006 IPCC Guidelines (vol. 4, chap. 10). These values were then combined into a weighted average for reporting in CRT 3.B(b). The TERT recommends that Bulgaria report Nex values separately for each poultry category in the NID and CRT 3.B(b), and clearly document the calculation methods and weighting approach used to aggregate the Nex values in order to improve the transparency of the estimates.
5.A.12	Specified in paragraph 39 of the MPGs 3.C.1 Irrigated rice cultivation – CH_4	Bulgaria reported in its NID (p.302) that the rate of organic amendment for irrigated rice cultivation was estimated on the basis of the good agricultural practices set out in the Program of measures to reduce and prevent nitrate pollution from agricultural sources. The Party did not report the numerical value and methodology for the application rate of organic amendment used in the estimations. During the review, Bulgaria clarified that the numerical value for the rate of organic amendment applied in the estimations was 22.81 t/ha (fresh weight). This value was applied across the time series and for all rice cultivation areas. To improve transparency, the Party indicated that it will include the numerical value for the application rate of organic amendment in table 194 of its next NID. The TERT recommends that Bulgaria report in the NID the numerical value, methodological basis and justification for the application rate of organic amendment used in rice cultivation.
5.A.13	Specified in paragraph 21 of the MPGs 3.D Direct and indirect N_2O emissions from agricultural soils – N_2O	Bulgaria identified N_2O emissions from agricultural soils as a key category; however, the Party relied predominantly on IPCC default EFs, loss fractions and uncertainty values to estimate the emissions. The Party did not provide sufficient justification for the continued use of tier 1 defaults for this key category, nor did it include information on planned methodological improvements. During the review, Bulgaria acknowledged that N_2O emissions from agricultural soils was identified as a key category. It confirmed that the calculations are currently performed using tier 1 default EFs loss fractions and uncertainty values from the 2006 IPCC Guidelines. Bulgaria also indicated that it is assessing the feasibility of developing country-specific (tier 2) parameters. This includes reviewing relevant scientific publications and studies to evaluate their applicability, strengthening cooperation between the inventory team, agricultural research institutes and the Ministry of Agriculture and Food, and collecting additional data on inorganic fertilizer use. In this context, the national regulation governing the

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		organization of GHG and air pollutant inventories was amended in 2024 to facilitate the systematic collection of country-specific data on fertilizer use. Bulgaria further explained that the development and implementation of a tier 2 method for estimating N_2O emissions from agricultural soils has been identified as a priority, subject to the availability of sufficient data and resources, in addition to the need to ensure time-series consistency. Until such improvements have been implemented, the Party considers the continued use of IPCC default values to be the most reliable and methodologically sound approach. The TERT encourages Bulgaria to estimate N_2O emissions from agricultural soils, which is a key category, using country-specific data. If the Party is unable to adopt a higher-tier method for the category owing to a lack of resources, the TERT recommends that the Party explain why its chosen method is not in line with the corresponding decision tree of the 2006 IPCC Guidelines.
5.A.14	Specified in paragraph 26 of the MPGs 3.D.1.a Inorganic N fertilizers – N_2O	Bulgaria reported in its NID (section 5.7.2.3, p.305) that the data on synthetic fertilizer consumption for 1988–2016 were provided through official letters from the Bulgarian Food Safety Agency/National Service for Plant Protection. Since 2017, data have been provided by the Ministry of Agriculture, Food and Forestry and cross-checked with the information in the National State of the Environment Report published annually. The TERT notes that the synthetic fertilizer AD were derived from multiple official sources and cross-checked with international databases. However, the Party did not sufficiently explain how methodological consistency was ensured across data sources and over time. During the review, Bulgaria clarified that AD on the total amount of N fertilizers (in t N/year) were provided by different sources (by the Bulgarian Food Safety Agency for 1988–2016 and by the Ministry of Agriculture, Food and Forestry for 2017–2022). Unlike AD on the amount of urea used in agricultural soils, data on the total amount of N fertilizers have always been reported to Eurostat by both institutions, thereby ensuring methodological consistency between data sources over time. The TERT encourages Bulgaria to clearly describe in the NID how the methodological consistency of synthetic fertilizer AD is maintained across institutional changes, including an explanation of how data harmonization procedures are applied over the time series.
5.A.15	Specified in paragraph 29 of the MPGs 3.D Direct and indirect N_2O emissions from agricultural soils – N_2O	In its NID (section 5.7.3 and table 203, p.308), Bulgaria reported that the uncertainty for direct N_2O emissions from agricultural soils is 200 per cent and for indirect N_2O emissions is 500 per cent, which are notably high values. During the review, Bulgaria confirmed that these uncertainty values correspond to the default uncertainty ranges provided in the 2006 IPCC Guidelines (vol. 1, chap. 3). The Party acknowledged that N_2O emissions from agricultural soils constitutes a key category and that the associated uncertainty levels are high; however, at present, Bulgaria indicated that it will continue to apply the IPCC default uncertainty values. The TERT recommends that Bulgaria improve the uncertainty analysis for N_2O emissions from agricultural soils, particularly given that this is a key category, and document any planned steps to improve the accuracy of these estimates for future NIDs.
5.A.16	Specified in paragraph 39 of the MPGs 3.F Field burning of agricultural residues – CH_4	Bulgaria reported in its NID (section 5.8, p.308) that the estimates of field burning of agricultural residues are based on expert judgment, whereby 3 per cent of the vegetal residues left on fields after yielding the crops are burned. However, no information was provided in the NID on the assumptions used for the expert judgment. During the review, Bulgaria clarified that the 3 per cent value is based on a study conducted by the Plovdiv Agrarian University on behalf of the national inventory team. The Party indicated that no further documentation on or detailed explanation of the methodology used to determine this percentage is currently available. The TERT recommends that the Party provide clear information on the assumptions applied when using expert judgment for the estimations, in accordance with the 2006 IPCC Guidelines (vol. 1, chap. 2, annex 2A.1).

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
5.A.17	Specified in paragraph 31 of the MPGs 3.G Liming – CO_2	Bulgaria reported dolomite use as "NO" in CRT 3.G-J. During the review, Bulgaria clarified that no data on dolomite use are currently available. The Party further explained that limestone is predominantly applied in Bulgaria because it is more accessible and less expensive than dolomite, and most acidic soils primarily require calcium. Bulgaria also indicated that it will conduct further research to obtain more accurate data on dolomite use. The TERT recommends that Bulgaria obtain and report accurate data on dolomite use or, where data are unavailable, clearly document the assumptions used for reporting dolomite use as "NO" to ensure transparency and completeness in the NID and CRT 3.G-J.
5.A.18	Specified in paragraph 39 of the MPGs 3.G Liming – CO_2	Bulgaria reported in its NID (section 5.9, p.309) that, based on expert judgment, 10 per cent of grassland and 17 per cent of cropland is potentially subject to liming. During the review, Bulgaria clarified that this assumption is based on a scientific study (Atanassov, 2012), which found that 9.8 per cent of soils in the country have a pH below 5.0. Using this information, the Party considered that approximately 17 per cent of cropland and 10 per cent of grassland is potentially subject to liming. The TERT recommends that Bulgaria clearly document the methodology and assumptions used to estimate areas of cropland and grassland subject to liming, including a reference to the study by Atanassov (2012), to enhance the transparency of the estimates.
5.A.19	Specified in paragraph 27 of the MPGs 3.H Urea application – CO_2	Bulgaria reported in its NID (section 5.10, p.310) that AD on the amount of urea used for 1988–2005 were interpolated on the basis of total consumption of N fertilizers. During the review, Bulgaria clarified that no official AD on urea use are available for 1988–2005. Official and verified information on N fertilizers, including urea, has been provided by the Ministry of Agriculture and Food since 2017. Therefore, AD on urea fertilizers for 1988–2016 were interpolated. Consistency between the interpolated data for 1988–2016 and the reported urea consumption for 2017–2022 and onward was maintained by using total crop production as stable reference data. Bulgaria indicated that it will describe this methodology in detail in its 2026 submission to improve transparency. The TERT encourages the Party to clearly document in the NID the methodology used for interpolating data on urea use for 1988–2016, including the reference data and approaches used for ensuring consistency with the official data for 2017–2022, to enhance the transparency of the estimates.

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 24 and 40 of the MPGs 4.A Forest land – CO_2, CH_4 and N_2O	In the NID (p.354), Bulgaria reported that the annual data for areas affected by fires were obtained from the Executive Forest Agency and cover all forest areas. However, this reporting system does not define whether the fires occur in forest land remaining forest land or land converted to forest land. Consequently, emissions from wildfires were distributed proportionally between these two subcategories according to their relative share of the total forest land area. The Party used IPCC default values to estimate emissions from biomass burning in forest land. The TERT further noted that the Party reported emissions from biomass burning in grassland remaining grassland as "NE" in CRT 4(IV). During the review, the Party clarified that it plans to further improve the estimates of biomass burning for categories under forest land. The Party added that information on forest fires is available at the national level in a structured and partially disaggregated form. The data set includes detailed records of burned areas, allowing for differentiation by vegetation types and fire characteristics. The Party intends to complement this nationally available data set with external data and resources, such as FAOSTAT, the European Forest Fire Information System

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		and IPCC default EFs, to estimate emissions from biomass burning in forest land across the time series. The TERT recommends that the Party implement the above-mentioned revised approach to enhance the accuracy of the emission estimates for biomass burning in forest land. The TERT further encourages the Party to consider collecting disaggregated data on the mass of fuel, combustion factor and EF for the different strata of forests and types of fires.
6.L.2	Specified in paragraphs 31–32 of the MPGs 4.A.1 Forest land remaining forest land – CO_2, CH_4 and N_2O	The Party stratified forest land into three distinct types – coniferous forests, deciduous forests and "out-of-yield". The out-of-yield stratum is defined as including areas covered by mountain pine, which is not subject to harvesting for commercial use. The Party therefore assumed that all gains are equal to losses (tier 1 approach). However, the forest in this stratum increased from 1988 to 2022 (NID table 215, p.325). The estimates of emissions and removals for forest land remaining forest land and land converted to forest land exclude the out-of-yield stratum. During the review, the Party explained that emissions and removals from land-use changes to the out-of-yield stratum were not reported because they are insignificant. The TERT recommends that the Party provide information in the NID explaining that emissions and removals from the out-of-yield forest stratum are insignificant, and report them using the appropriate notation key ("NE") in CRT4.A, in line with paragraph 32 of the MPGs.
6.L.3	Specified in paragraphs 31 and 47 of the MPGs 4.B.1 Cropland remaining cropland – CO_2, CH_4 and N_2O	Bulgaria reported emissions from wildfires on cropland remaining cropland as "NO" in CRT 4(IV). During the review, in response to a question from the TERT on whether wildfires do not occur in perennial cropland, Bulgaria indicated that wildfire incidents could occur in perennial or annual cropland and that this will be further investigated in order to derive the relevant information if that is the case. Bulgaria added that although the Fire Service has statistics on the number of fires that occur in Bulgaria, these statistics are not currently area specific. The TERT recommends that the Party investigate the possibility of the occurrence of wildfires in perennial and annual cropland for estimating emissions from biomass burning for cropland remaining cropland.
6.L.4	Specified in paragraphs 31–32 of the MPGs 4.C.1 Grassland remaining grassland – CO_2	Bulgaria used a tier 1 approach to estimate DOM for grassland remaining grassland, which assumes that the DOM carbon stock in grassland remaining grassland and land converted to grassland is insignificant and/or does not change and is therefore not associated with any emissions or removals. During the review, in response to a question from the TERT on whether there is woody vegetation in grassland, the Party clarified that there are two subcategories of grassland in Bulgaria: pastures and meadows; and shrubs and grassland. Bulgaria further indicated that there is limited or no woody vegetation in the subcategory pastures and meadows. The shrubs and grasslands subcategory has more trees and shrubs but not enough to meet Bulgaria's forest definition. Bulgaria further explained that it reported CSCs in DOM in shrubland as "NE" owing to a lack of information. The TERT notes that for activities that do occur but do not result in emissions, the appropriate notation key is "NA", in accordance with paragraph 31 of the MPGs. The TERT further noted that if "NE" is reported for an activity, the Party should demonstrate that the emissions are insignificant in accordance with paragraph 32 of the MPGs. The TERT recommends that the Party use the appropriate notation key ("NA") for activities that do occur but do not result in emissions. The TERT also encourages the Party to investigate, through studies, the possibility of CSCs in DOM in shrubland and whether emissions associated with CSCs in DOM in shrubland are insignificant, in accordance with paragraph 32 of the MPGs.
6.L.5	Specified in paragraphs 32 and 47 of the MPGs	In CRT 4(IV), the Party reported emissions from wildfires in grassland remaining grassland as "NE". The TERT notes that in accordance with paragraph 32 of the MPGs, a Party may use "NE" when the estimates would be insignificant in terms of the level estimated using approximated AD and IPCC default EFs.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
	4.C.1 Grassland remaining grassland – CO_2, CH_4 and N_2O	During the review, Bulgaria indicated it is planning to check if data from the Food and Agriculture Organization of the United Nations could be used to estimate emissions from biomass burning in grassland remaining grassland. The TERT recommends the Party collect the necessary data or use globally available approximated AD and IPCC default EFs to estimate emissions from biomass burning in grassland remaining grassland, or provide information demonstrating that these emissions are insignificant.
6.L.6	Specified in paragraphs 22 and 40 of the MPGs 4.E.2 Land converted to settlements – CO_2	In the NID (p.324), Bulgaria indicated that although information is available on all land-use changes from cropland and grassland to other land uses, there is no information on whether the changes occurred specifically in cropland or grassland. The information reported in the NID is based on the relative shares of cropland and grassland to the total area of agricultural land. During the review, in response to a question from the TERT, the Party clarified that the information on land-use changes was provided by the Ministry of Agriculture and refers to the total area of agricultural land that is subject to land-use change as a result of construction activities, and therefore relates only to land-use changes from cropland and grassland to settlements. The information provided by the Ministry of Agriculture does not disaggregate agricultural land into cropland and grassland. The total agricultural land converted to settlements is therefore distributed between cropland and grassland on the basis of their relative share of the total area of agricultural land. The Party further explained that the land-cover classification used for the Bulgarian Survey of the Agricultural and Economic Conjuncture and the Agricultural Land Parcel Identification System is detailed enough to disaggregate agricultural land into the subcategories of cropland and grassland. The Party added that although the land-cover classification used for the Bulgarian Survey of the Agricultural and Economic Conjuncture and the Agricultural Land Parcel Identification System is detailed enough to disaggregate conversions from cropland and grassland to settlements, there may be some errors in the areas of land-use conversions, and the data on land-use conversions provided by the Ministry of Agriculture are therefore deemed more accurate. The TERT notes that a combination of both approaches could have been adopted by the Party to correct any potential conversion errors in the spatially explicit data and further enhance the accuracy of the estimates. The TERT recommends that the Party make efforts to obtain disaggregated data on land-use changes from cropland and grassland to settlements by analysing the data contained in the different national data sets.
6.L.7	Specified in paragraph 31 of the MPGs 4.F.2 Land converted to other land –NO_X, CO and NMVOCs	In CRT 4, Bulgaria reported NO_X, CO and NMVOC emissions for land converted to other land as “NA”. During the review, the TERT requested clarification on whether conversions from land to other land occur but do not lead to emissions or removals, in accordance with the definition of “NA” in paragraph 31 of the MPGs. Bulgaria explained that such conversions do not occur. The TERT recommends that Bulgaria report the appropriate notation key (“NO”) for emissions from land converted to other land in CRT 4.

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 31 of the MPGs 5.A.1 Managed waste disposal sites – CH_4	Bulgaria reported emissions from flaring as “NE” in CRT 5.A for subcategory 5.A.1.a managed waste disposal sites – anaerobic. The NID (p.419) mentions that the landfill site near Silistra does not collect landfill gas and has a flaring system. However, the TERT noted that no explanation was provided for reporting emissions from flaring as “NE”. During the review, Bulgaria explained that the notation key “NE” was not appropriate for reporting emissions from flaring. The Party indicated that, according to a survey conducted in 2021 covering all regional environmental and water inspectorates, no landfill sites had a working system for removing and burning CH_4 by flaring at that time. The Party therefore explained that the

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		appropriate notation key should be "NO". The Party also clarified that the reference in the NID to the flaring system near Silistra is outdated and should be removed. In addition, the Party indicated that it plans to conduct a new survey during the preparation of the 2027 submission. The TERT recommends that the Party apply the appropriate notation key ("NO") for emissions from flaring in CRT 5.A for subcategory 5.A.1.a and update the NID to reflect the current status of landfill flaring, including by removing outdated references to the flaring system near Silistra, and include the results of any future surveys on landfill gas management, including any flaring activities.
7.W.2	Specified in paragraphs 31, 32 and 39 of the MPGs 5.B Biological treatment of solid waste – CH_4 and N_2O	Bulgaria reported CH_4 and N_2O emissions for category 5.B.1 composting in NID table 266 (p.422), and CH_4 emissions for category 5.B.2 anaerobic digestion at biogas facilities in NID table 267 (p.422), with N_2O emissions reported as "NE". The NID explains that the significant reduction in the amount of waste composted between 2017 and 2018 was a result of the implementation of an ordinance on the separate collection and treatment of biodegradable waste, which introduced more stringent requirements for the fraction of separated waste to be composted. However, the TERT noted significant fluctuations in the AD, in particular around 2018. For category 5.B.1, the reduction in 2018 is followed by persistently lower levels in subsequent years, whereas for category 5.B.2, the decrease appears to be limited to 2018 only. Further clarification of the trends in AD across the reported time series, including verification of the explanations provided, would improve transparency and understanding of the reported emission trends. During the review, Bulgaria explained that the reduction in the amount of composted waste between 2017 and 2018 was a result of the implementation of the ordinance for the separate collection of biowaste and treatment of biodegradable waste. Regarding anaerobic digestion at biogas facilities, the Party clarified that the reduction in 2018 is unrelated to composting and that the AD for 2014–2020 and CH_4 emission estimates were based on tier 1 methodology from the 2006 IPCC Guidelines (vol. 5, section 4.1.3.1, table 4.1, p.4.6), using data from annual reports for plants with integrated pollution prevention and control permits, including the installation at Khan Bogrov. The Party also indicated that for the 2026 submission, a detailed study has been conducted involving additional installations using data from the Executive Environment Agency and the electronic waste information system. The TERT recommends that the Party provide in the NID a clearer explanation of AD trends across the reported time series for categories 5.B.1 and 5.B.2, including a more detailed explanation of the factors underlying the changes observed in 2017–2018.
7.W.3	Specified in paragraph 35 of the MPGs 5.C.1 Waste incineration – CO_2, CH_4 and N_2O	Bulgaria reported CO_2, CH_4, and N_2O emissions from incineration of clinical and hazardous waste in NID table 268 (p.424). The TERT noted inconsistencies between the values reported in NID table 268 and the totals reported in CRT 5.C for category 5.C.1 waste incineration. For example, in 2022, CO_2 emissions from hazardous waste were reported as 3.29 kt in the NID, but as 10.97 kt for non-biogenic and 0.37 kt for biogenic emissions in CRT 5.C. In addition, CH_4 and N_2O emissions from clinical waste were reported only as non-biogenic in the NID, whereas the totals reported in CRT 5.C reflect the sum of the biogenic and non-biogenic fractions. Similar inconsistencies were observed for previous years of the time series (e.g. 2020 and 2021) regarding the total CO_2, CH_4 and N_2O emissions reported in the NID compared with those reported in CRT 5.C. During the review, Bulgaria explained that a technical error occurred during the completion of CRT 5.C and indicated that this issue has been corrected for future submissions. The Party clarified that the correct values are those reported in NID table 268. The TERT encourages the Party to ensure consistency between the values reported in the NID and those reported in CRT 5.C for category 5.C.1 in future submissions.
7.W.4	Specified in paragraph 31 of the MPGs	Bulgaria reported the amount of CH_4 flared as "NE" in CRT 5.D for category 5.D.1 domestic wastewater. However, the TERT noted that no explanation was

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
	5.D.1 Domestic wastewater – CH_4	provided in the NID or in CRT 5.C for reporting "NE" for the amount of CH_4 flared. During the review, Bulgaria explained that the amount of CH_4 used for energy recovery was reported as the sum of CH_4 stored in tanks, CH_4 recovered for energy purposes and CH_4 flared by operators of water treatment and sewage systems. The Party indicated that the notation key "NE" used for reporting the amount of CH_4 flared is not appropriate and should be replaced with "IE", with a justification for doing so provided in the NID. The TERT recommends that the Party apply the appropriate notation key ("IE") for the amount of CH_4 flared in CRT 5.D for category 5.D.1 and provide a justification for using this notation key in the NID.

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*
8.1	Specified in paragraphs 61–62 of the MPGs	Bulgaria did not report in its BTR1 information on the domestic institutional arrangements in place to track progress in implementing and achieving its NDC under Article 4 of the Paris Agreement. Specifically, Bulgaria provided information on institutional arrangements at the EU level and national legal arrangements, but did not provide information on institutional, administrative and procedural arrangements for domestic implementation, monitoring, reporting, archiving of information and stakeholder engagement related to the implementation and achievement of its NDC under Article 4. During the review, Bulgaria provided detailed information on its institutional arrangements for tracking NDC progress. The Party clarified the roles and responsibilities of the Climate Change Policy Directorate within the Ministry of Environment and Water, the Executive Environment Agency and other institutions and entities included in the governance mechanism, and the corresponding domestic procedures and administrative arrangements. The Party also provided information on stakeholder engagement and clarified that this information is included in the National Energy and Climate Plan. The TERT recommends that the Party include information on legal, institutional, administrative and procedural arrangements for domestic implementation, monitoring, reporting, archiving of information and stakeholder engagement.

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*
NA	NA	No areas of improvement identified

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 80 of the MPGs	Although Bulgaria reported information on PaMs in its BTR1 and CTF table 5, it did not identify which of those PaMs have the most significant impact on GHG emissions or removals and which affect key categories in the national GHG inventory, as required by paragraph 80 of the MPGs. During the review, Bulgaria explained that its approach to reporting PaMs in the BTR1 and CTF table 5 was based on the consideration of PaMs for each sector (energy, transport, IPPU, agriculture, LULUCF and waste) and identified those PaMs that have a significant quantified mitigation impact and those that affect key categories in the national GHG inventory. Additionally, the PaMs were selected owing to their inclusion within the framework established by an interministerial working group for preparing the "Decarbonisation" section of the National Energy and Climate Plan, and that the reported PaMs are aligned with the programmes of the respective institutions, including the operational programmes supporting their financing. The TERT recommends that Bulgaria provide information in the next BTR on the PaMs that have the most significant impact on GHG emissions or removals, as well as those impacting key categories in the national GHG inventory, as provided during the review.
11.2	Specified in paragraph 82(e) and (i) of the MPGs	The TERT noted inconsistencies in the information reported by Bulgaria in BTR1 chapter 3.4 and CTF table 5 in relation to the status of and implementing entity or entities for its actions and PaMs, in accordance with paragraph 82(e) and (i), respectively, of the MPGs. Regarding information on the status of PaMs, the measure "introduction of a new measure/activity – fast growing tree species" in the LULUCF sector was reported as "planned" in CTF table 5, while it was associated with the WM scenario in BTR1 chapter 3.4. In addition, some PaMs for the waste sector that were reported as "planned" in CTF table 5 (e.g. construction of waste recycling plants; and separate collection and recycling of construction waste) were described in BTR1 chapter 3.4 without indicating whether they were reflected in the WM and/or WAM scenario. Regarding information on the implementing entity or entities, in CTF table 5 the implementing entity was reported as "National Government" for all PaMs, while in BTR1 chapter 3.4, the responsible or implementing entities were not consistently identified for all PaMs across sectors. During the review, Bulgaria provided additional information clarifying which PaMs were reflected in the WM and WAM scenarios, together with an Excel file (Table 5_BGR-CTF-NDC-2024_entity.xlsx) containing sector-specific information on the entities responsible for implementing the reported PaMs. The TERT considers that the information provided during the review clarified which PaMs were reflected in the WM and WAM scenarios, as well as the entities responsible for implementing them. The TERT recommends that Bulgaria ensure consistency in the information reported on the status of PaMs and the implementing entity or entities between the narrative part of the BTR and CTF table 5, or provide a clear cross-reference to where such information is provided.
11.3	Specified in paragraph 83 of the MPGs	Bulgaria did not report information on the costs and non-GHG mitigation benefits of the reported PaMs, and did not clearly report, as appropriate, how the mitigation actions as identified in paragraph 80 of the MPGs interact with each other. During the review, Bulgaria explained that the reported PaMs are part of the National Energy and Climate Plan until 2030 and are grouped by sector and priority axes, with their overall effects reflected in the scenarios and projections of GHG emissions until 2030. Bulgaria also provided general information on interactions among GHG emissions, and renewable energy and energy efficiency policies, including the interaction between the EU ETS and other climate-related PaMs. It noted that, owing to the interactions between some PaMs, it may be

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		more appropriate to assess impacts for groups of PaMs, rather than for individual PaMs. The TERT encourages Bulgaria to provide in the next BTR, to the extent possible, information on the costs and non-GHG mitigation benefits of the reported PaMs and clearer information on how the mitigation actions as identified in paragraph 80 of the MPGs interact with each other, as appropriate.
11.4	Specified in paragraph 85 of the MPGs	Bulgaria did not report estimates of achieved GHG emission reductions for the reported PaMs in CTF table 5, which includes only estimates of expected GHG emission reductions for 2025 and 2030. During the review, Bulgaria explained that the expected impacts reported in CTF table 5 are based on the National Energy and Climate Plan modelling provided by E3-Modelling S.A. The quantification of policy options was carried out using the (Bulgarian) Energy System Tool model. Bulgaria further explained that the modelling covers the energy sector and that emissions from other sectors, sources and sinks (agriculture, LULUCF and waste) were simulated using accounting methods and marginal abatement cost curves. The Party acknowledged that the achieved impacts of PaMs were not explicitly reported in its BTR1 and CTF table 5, and that ex post assessment of achieved impacts is challenging, particularly in distinguishing between the effects of individual and overlapping PaMs. The Party also provided a table presenting an overview of emission reductions by gas and by sector from the base year to the latest reporting year, as well as changes in emissions between 2021 and 2024 following the implementation of the first National Energy and Climate Plan. The TERT recommends that the Party, to the extent possible, report estimates of achieved GHG emission reductions for the reported PaMs in CTF table 5, in addition to the estimates of expected GHG emission reductions already reported, in particular for those with the most significant mitigation impact. Where estimates of achieved GHG emission reduction are not available, the Party should clearly explain this in its BTR and/or CTF table 5.
11.5	Specified in paragraph 85 of the MPGs	Bulgaria reported several PaMs in CTF table 5 as “IE” (e.g. promoting the production of biofuels) and/or “NE” (e.g. the introduction of intelligent transport systems on the national and urban road network; and the establishment of a national scheme to support the construction of recharging infrastructure), instead of expected emission reduction values for 2025 and/or 2030, without providing a clear explanation for doing so in CTF table 5 or a cross-reference to the relevant information in the BTR1. During the review, Bulgaria clarified that the measure on promoting the production of biofuels was reported as “IE” because its impact is included under the measure on increasing the share of biofuels. Bulgaria also clarified which of the PaMs were reported as “NE” (e.g. enabling offshore wind energy development; and planning priority zones for accelerated development of energy sites for the production of electricity from wind energy). Bulgaria also acknowledged that, for these PaMs, the notation key “NA” would have been more appropriate because, owing to their nature, expected emission reduction values cannot be quantified. In addition, Bulgaria clarified that the following PaMs were reported as “NE” only for 2025: long-term national strategy to support the renovation of the national stock of residential and non-residential buildings by 2050; introduction of a mandatory energy efficiency scheme; prohibitions and restrictions for fluorinated greenhouse gases; promoting carbon capture and storage projects; establishment of a national scheme to support the construction of recharging infrastructure; and promoting the production and consumption of alternative renewable fuels, namely hydrogen, because these PaMs will be implemented only after 2025 and, therefore, expected emission reduction values for 2025 could not be quantified. The TERT recommends that Bulgaria improve the transparency of its reporting, to the extent possible, and provide in the relevant cells and/or custom footnotes to CTF table 5, or in the BTR text, a clear explanation or cross-reference in cases where “IE” and/or “NE” are used to report expected emission reduction values for 2025 and/or 2030.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
11.6	Specified in paragraph 86 of the MPGs	Bulgaria reported estimates of expected emission reductions or removals for many mitigation PaMs in BTR1 chapter 3.4. However, Bulgaria did not provide information on the methodologies and assumptions used to estimate the GHG emission reductions or removals due to each action, policy and measure in the BTR1 and CTF table 5. During the review, Bulgaria explained that the general framework used for quantifying GHG emission reductions or removals resulting from its PaMs is based on the (Bulgarian) Energy System Tool model and that, for some PaMs in non-energy sectors, sector-specific accounting methods and marginal abatement cost curves were used, with information on the relevant methodologies and assumptions documented in the National Energy and Climate Plan. The TERT recommends that Bulgaria, to the extent possible, provide a description of the methodologies and key assumptions used for estimating GHG emission reductions or removals due to each action, policy and measure in future BTRs.
11.7	Specified in paragraph 90 of the MPGs	Bulgaria did not report in its BTR1 information on the assessment of the economic and social impacts of response measures, as referred to in paragraph 90 of the MPGs. During the review, Bulgaria provided detailed information on the EU and national frameworks for assessing the environmental, economic and social impacts of PaMs. The TERT encourages Bulgaria, to the extent possible, to provide information on a qualitative and/or quantitative 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*
12.1	Specified in paragraph 91 of the MPGs	Bulgaria did not provide a summary of its GHG emissions and removals in tabular format, in accordance with paragraph 91 of the MPGs. The Party provided a summary of GHG emissions and removals in narrative format in BTR1 chapter 2; however, all cells in CTF table 6 were left empty. During the review, Bulgaria explained that the cells in CTF table 6 were left empty owing to a technical issue. The TERT recommends that Bulgaria complete CTF table 6 in order to provide a summary of GHG emissions and removals for all reporting years corresponding to its most recent NIR in tabular format, in accordance with paragraph 91 of the MPGs.
12.2	Specified in paragraph 91 of the MPGs	The TERT noted a lack of transparency in the presentation of information in Bulgaria's BTR1 on the years included in the inventory. BTR1 section 2.1 indicates that Bulgaria's NIR covers 1990–2022, whereas section 2.2 presents trends in GHG emissions for 1988–2022. However, the BTR1 does not clearly explain the reason for including 1988 in section 2.2. During the review, Bulgaria clarified that 1988 is its base year under the Convention. The TERT recommends that Bulgaria clearly explain the use of 1988 as its base year under the Convention and ensure consistency and transparency between the inventory period covered by its most recent NIR and the years presented in the summary of trends in GHG emissions in the BTR.

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 96(d) of the MPGs	Bulgaria reported in its BTR1 (chap. 3.6) that a sensitivity analysis was not performed for the projections.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		During the review, Bulgaria explained that the appropriate methodology for performing a sensitivity analysis has not been considered. It further explained that a sensitivity analysis can be conducted for the energy and IPPU sector projections and that this is planned as part of the development of the next projection scenarios. Bulgaria noted the need to improve its capacity to enable it to conduct such an analysis in sectors other than energy and IPPU. The TERT encourages the Party to enhance its capacity to conduct a sensitivity analysis and report thereon in its next BTR.
13.2	Specified in paragraph 100 of the MPGs	Bulgaria did not report clear information in its BTR1 on the inclusion of LULUCF in its projections. In BTR1 chapter 3.6, Bulgaria reported net GHG emissions and projections with LULUCF, while in CTF tables 7–8, the Party reported its projections with and without LULUCF. During the review, Bulgaria explained that it encountered a technical issue when preparing BTR1 chapter 3.6, as a result of which only net GHG emission projections with LULUCF are presented. The Party explained that the figures presented in CTF tables 7–8, which contain emission projections both with and without LULUCF, are correct. The TERT recommends that the Party ensure the consistency of the information reported in the BTR and the CTF tables and provide information on any associated challenges faced.

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*
15.1	Specified in paragraph 119 of the MPGs	Bulgaria did not provide information in its BTR1 on national circumstances and institutional arrangements relevant to reporting on the provision of support to developing country Parties in accordance with paragraph 119 of the MPGs. During the review, Bulgaria explained that, at the time of preparing the BTR1, it did not have a dedicated centralized national system to identify, track and report international climate finance provided and mobilized through public interventions under Article 9 of the Paris Agreement. However, Bulgaria mentioned its plans to progressively establish a national framework for tracking and reporting this information, including developing a coordinated institutional mechanism for collecting data among relevant ministries and implementing entities; introducing methodological guidance for identifying climate-specific support, drawing on internationally recognized standards such as the Rio markers of the Development Assistance Committee of the Organisation for Economic Co-operation and Development; integrating climate-relevant tagging within existing public finance and development cooperation reporting processes; and strengthening inter-institutional coordination to improve the completeness, comparability and accuracy of the information on financial support reported in future BTRs. The TERT encourages the Party to include information on national circumstances and institutional arrangements relevant to reporting on the provision of support to developing country Parties, including the challenges faced at the time of preparing the BTR, and on its plans to progressively establish a national framework for tracking and reporting international climate finance provided and mobilized, as explained during the review.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
15.2	Specified in paragraph 120 of the MPGs	Bulgaria did not report information on national circumstances and institutional arrangements for the provision of technology development and transfer, and capacity-building support, including on whether this information is available. During the review, Bulgaria explained that, owing to limitations relating to decentralized data-collection processes and the absence of a fully operational national system for tracking international climate-related support, it was unable to identify information on the provision of such support to developing country Parties for 2021–2022 in a manner that could be reported in accordance with paragraph 120 of the MPGs. Bulgaria also noted that work is currently envisaged to further develop the institutional arrangements for identifying, tracking and reporting such support. The TERT encourages the Party to include information on national circumstances and institutional arrangements for the provision of technology development and transfer, and capacity-building support to developing country Parties. If Bulgaria deems that it is not possible to report this information consistently with paragraph 120 of the MPGs, the TERT encourages the Party to describe this in the BTR, as it did during the review.

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*
16.1	Specified in paragraph 121 of the MPGs	Bulgaria did not provide a description of the underlying assumptions, methodologies and definitions, as applicable, used to identify and/or report on financial, technology development and transfer, and capacity-building support provided under Articles 9–11 of the Paris Agreement in accordance with paragraph 121 of the MPGs. During the review, Bulgaria explained that, given the absence of a fully operational national system for tracking international climate-related support provided to developing country Parties, it was unable to identify information on such support in a manner that could be reported in accordance with paragraph 121 of the MPGs, including the assumptions, methodologies and definitions necessary to do so. Bulgaria also noted that work is currently envisaged to further develop the institutional arrangements for identifying, tracking and reporting international climate finance and related capacity-building support. The TERT encourages the Party to include a description of the underlying assumptions, methodologies and definitions, as applicable, used to identify and/or report on financial, technology development and transfer, and capacity-building support in accordance with paragraph 121 of the MPGs. If this information is not available, the TERT encourages Bulgaria to explain the related challenges and limitations, as well as planned efforts to improve its reporting, as described during the review.
16.2	Specified in paragraph 122 of the MPGs	Bulgaria did not report in its BTR1 information on the underlying assumptions, definitions and methodologies used to provide information on technology development and transfer, and capacity-building support. During the review, Bulgaria explained that the current institutional arrangements for identifying and tracking international climate-related support are still under development and do not yet allow for the systematic capture of all potentially relevant activities implemented by different institutions. The TERT encourages the Party to provide information on the underlying assumptions, definitions and methodologies used to provide information on technology development and transfer, and capacity-building support. If this information is not available, the TERT encourages the Party to explain the related challenges and limitations, as well as planned efforts to improve its reporting, as described during the review.

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	Bulgaria did not report information on financial support provided through bilateral, regional and other channels in either CTF table III.1 or the BTR1 in tabular format. During the review, Bulgaria explained that the current institutional arrangements for identifying and tracking international climate-related support are still under development and do not yet allow for the systematic capture of all potentially relevant financial support provided through bilateral, regional or other channels. The TERT encourages the Party, to the extent possible, to provide information on financial support provided through bilateral, regional and other channels in a tabular format in its next BTR. If this information is not available, the TERT encourages the Party to explain this 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*
18.1	Specified in paragraph 124 of the MPGs	Bulgaria completed CTF table III.2 on support provided through multilateral channels for 2021–2022. However, some entries referred to core (general budget) contributions to the UNFCCC, the Kyoto Protocol and the United Nations Environment Programme that do not necessarily qualify as financial resources provided to support developing country Parties with respect to mitigation and adaptation, in line with Article 9 of the Paris Agreement. During the review, Bulgaria confirmed that, while the mandates of the organizations referred to in CTF table III.2 include substantial climate-related activities, the contributions were not earmarked for project-specific funding. Bulgaria therefore agreed that, in the absence of a methodology to determine the climate-specific share of core multilateral contributions, and in line with the objective of avoiding the overestimation of support provided and ensuring the comparability of the reported data, such contributions should not be reported as climate-specific financial support provided under Article 9 of the Paris Agreement. The TERT encourages Bulgaria, when completing CTF table III.2, to distinguish between core or general budget contributions to multilateral institutions and those contributions earmarked as climate-specific support provided and mobilized for mitigation and adaptation in developing country Parties, in order to clearly identify financial support provided under Article 9 of the Paris Agreement.

Table 19
Areas of improvement of the information on technology development and transfer support provided under Article 10 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
19.1	Specified in paragraph 126 of the MPGs	Bulgaria did not report in its BTR1 information, in textual format, on support for technology development and transfer provided under Article 10 of the Paris Agreement in accordance with paragraph 126 of the MPGs. During the review, Bulgaria explained that the current institutional arrangements for identifying and tracking international climate-related support are still under development and do not yet allow for the systematic capture of all potentially relevant financial support for technology development and transfer. The TERT encourages the Party, to the extent possible, to include information on support provided for technology development and transfer in accordance with paragraph 126 of the MPGs and, if such information is not available, explain the challenges and limitations it faced in reporting it, as described during the review.
19.2	Specified in paragraph 127 of the MPGs	Bulgaria did not report quantitative and/or qualitative information in a common tabular format on measures or activities related to support for technology

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		development and transfer in either CTF table III.4 or the BTR1, in accordance with paragraph 127 of the MPGs. During the review, Bulgaria explained that the current institutional arrangements for identifying and tracking international climate-related support do not yet allow for the systematic capture of all potentially relevant financial support for technology development and transfer. The TERT encourages the Party to report quantitative and/or qualitative information in a common tabular format on measures or activities related to support for technology development and transfer in line with paragraph 127 of the MPGs. If such information is not available, the TERT encourages Bulgaria to explain the challenges and limitations it faced in reporting it, as described during the review.

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 of the MPGs	Bulgaria did not report in its BTR1 information, in textual format, on capacity-building support provided under Article 11 of the Paris Agreement in accordance with paragraph 128 of the MPGs. During the review, Bulgaria explained that the current institutional arrangements for identifying and tracking international climate-related support are still under development and do not yet allow for the systematic capture of all potentially relevant financial support for capacity-building. Nevertheless, Bulgaria provided information during the review on a specific capacity-building project in North Macedonia, elaborating on the estimated amount of climate-relevant financial support provided. The TERT encourages the Party, to the extent possible, to include information on capacity-building support provided in accordance with paragraph 128 of the MPGs. If this information is not available, the TERT encourages that Bulgaria explain the challenges and limitations it faced in reporting it, as described during the review.
20.2	Specified in paragraph 129 of the MPGs	Bulgaria did not report quantitative and/or qualitative information in a common tabular format on measures or activities related to capacity-building support implemented or planned since its previous report in either CTF table III.5 or the BTR1 in accordance with paragraph 129 of the MPGs. During the review, Bulgaria explained that the current institutional arrangements for identifying and tracking international climate-related support are still under development and do not yet allow for the systematic capture of all potentially relevant financial support for capacity-building. However, the Party provided information on a specific capacity-building project in North Macedonia and presented a revised CTF table III.5 with the inclusion of information on this project. The TERT encourages the Party to include quantitative and/or qualitative information in a common tabular format on measures or activities related to capacity-building support implemented or planned since its previous report in accordance with paragraph 129 of the MPGs. If this information is not yet available, the TERT encourages Bulgaria to explain this in the BTR, as it did during the review.

Annex

Documents and information used during the review

A. Reference documents

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

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

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

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

CRTs of Bulgaria. Available at https://unfccc.int/first-biennial-transparency-reports.

CRTs of the EU. Available at https://unfccc.int/first-biennial-transparency-reports.

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

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

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

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

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

NDC of Bulgaria. Available at https://unfccc.int/NDCREG.

NDC of the EU. Available at https://unfccc.int/NDCREG.

NID of Bulgaria. Available at https://unfccc.int/first-biennial-transparency-reports.

NID of the EU. Available at https://unfccc.int/first-biennial-transparency-reports.

Report on the technical expert review of the BTR1 of the EU. FCCC/ETF/TERR.1/2024/EU and Add.1. 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 Detelina Petrova (Ministry of Environment and Water of Bulgaria), including additional material. The following references were provided by Bulgaria and may not conform to UNFCCC editorial style as some have been reproduced as received:

Penkov, D., Gerzilov, V., & Bojinov, B. *Methodology for the calculation and determination of nitrogen from agricultural mammals (cattle, sheep and pigs) in the period 1992–2010*, 3B Project (English version). used as a source of country-specific agricultural

parameters (e.g. information on field burning), pp. 2, University of Agriculture Plovdiv, Plovdiv, Bulgaria.

Institute of Animal Sciences – Kostinbrod. *Acquisition of current data, scientific justifications and calculations for the diet of cows, sheep and pigs*. Scientific report, Kostinbrod, Bulgaria. (Bulgarian Language)

Penkov, D. S. (2016). *Development of a methodology for determining the excretion of volatile inorganic substances from pig and poultry farming in the Republic of Bulgaria*. Technical report prepared under an individual civil contract with the Executive Environment Agency. Plovdiv, Bulgaria.

Atanassov, (2012). Ministry of Environment and Water of Bulgaria. *National Programme for Measures to Reduce and Prevent Nitrate Pollution from Agricultural Sources*. Sofia, Bulgaria. (Bulgarian Language)