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Report on the technical expert review of the first biennial transparency report of Italy

Addendum

Summary

This addendum to the report on the technical expert review of the first biennial transparency report of Italy, 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, and presents capacity-building needs identified by the Party and by the technical expert review team in consultation with the Party during the review. The review took place from 19 to 23 May 2025 in Rome.

Please recycle

Abbreviations and acronyms

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
2019 Refinement to the 2006 IPCC Guidelines	*2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*
AD	activity data
BTR	biennial transparency report
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CRT	common reporting table
CTF	common tabular format
DE	digestible energy
EF	emission factor
EU	European Union
EU ETS	European Union Emissions Trading System
EUROCONTROL	European Organisation for the Safety of Air Navigation
Eurostat	statistical office of the European Union
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
MASE	Ministry of Environment and Energy Security
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
N_2O	nitrous oxide
NA	not applicable
NDC	nationally determined contribution
NE_m	net energy for maintenance
NID	national inventory document
NO	not occurring
OECD	Organisation for Economic Co-operation and Development
PaMs	policies and measures
SOC	soil organic carbon
TERT	technical expert review team
Y_m	methane conversion rate

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 Italy in its BTR1. All recommendations and encouragements contained in the tables are for the next BTR or national inventory report, unless otherwise specified.

A. General reporting provisions

Table 1
Areas of improvement relating to general reporting provisions

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

B. Greenhouse gas emissions and removals

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

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
2.G.1	Specified in paragraph 46 of the MPGs CRTs	There were several errors in the Party's CRTs, as well as missing information. In the IPPU sector: (a) CRT 2(I) is missing emission estimates and/or notation keys for 1990–2022 for category 2.A.4 other process uses of carbonates; (b) CRT 9 does not include an explanation for the use of "IE" for CO_2 emissions from lead production; (c) Different values were reported for CO_2 emissions from lubricant use under category 2.D non-energy products from fuels and solvent use in CRT 2(I).A-H (row 63) and CRT 1.A(d) (row 23) for almost all years of the time series. In the LULUCF sector: (a) There are discrepancies in the emission estimates by gas between the NID (table 6.1) and the CRTs (specifically, CRTs 10s2 (CO_2), 10s3 (CH_4), 10s4 (N_2O) and 10s1 (kt CO_2 eq)); (b) CRT 4(IV) has missing data for AD and IEFs, even though emissions and notation keys are listed for the associated subsectors; (c) There are discrepancies between CRT 4(IV) and NID table 6.52 in the information reported for CH_4 and N_2O in 2022; (d) CRT 4.Gs2 has missing data for 1961–1989, and no explanation was provided. NID figure 6.10 suggests that these data are available for the whole time series. In the waste sector: (a) CRT 9 does not contain an explanation for the use of "IE" for N_2O emissions from industrial wastewater treatment and discharge; (b) CRT 5D erroneously reported N_2O plant emissions from domestic and commercial wastewater treatment as N_2O effluent. During the review, the Party explained that these issues were linked to challenges with the data submission software (the CRT reporting tool), which required the Party to manually enter data into the CRTs. The TERT recommends that Italy strengthen its quality assurance/quality control procedures to ensure consistency between the CRTs and the NID, noting that

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

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

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		future submissions should include only numerical values or appropriate notation keys in the CRTs, each supported by a clear justification, and solve the issues mentioned in this area of improvement.

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 31 of the MPGs 1.B.1.a Coal mining and handling – CH_4	Emissions from abandoned underground coal mines were inconsistently reported between CRT 1.B.1 and the NID. "NO" was reported for years before 2015 in the CRT. However, the NID indicates that the only underground mine was closed between 1994 and 1999, in which case "NO" should not be reported for 2000–2015. During the review, Italy confirmed that the only underground mine was closed between 1994 and 1999, reopened in 2000 and closed again in 2016. The TERT recommends that Italy improve the transparency of its reporting in future NIDs by clarifying why "NO" is reported for abandoned underground coal mines for 2000–2015.
3.E.2	Specified in paragraph 39 of the MPGs 1.B.2.b Natural gas – CH_4	For category 1.B.2.b.ii natural gas production and gathering, the CH_4 IEF used for 2016 onward is significantly lower compared with previous years. In the NID, the Party explained that this was due to management improvements and data being collected directly from the main gas operators. However, the Party only reported the use of tier 1 and tier 2 methods for this category, even though AD being collected directly from the main gas operator should result in the use of a tier 3 method. During the review, Italy confirmed that in 2016 the national oil and gas operator introduced new standards for reducing fugitive emissions from its gas and oil production sites, which impacted the leakage rate from the sites of gas and oil operations for 2016 onward. EFs were calculated on the basis of the amount of gas produced and fugitive leakage, as communicated by the main gas operators, so the methodology could be considered to lie between tiers 2 and 3 for 2016 onward. The TERT recommends that Italy improve the transparency of its reporting for future NIDs by updating the description of the methodology used to estimate fugitive CH_4 emissions from category 1.B.2.b.ii natural gas production and gathering while ensuring time-series consistency.
3.E.3	Specified in paragraph 53 of the MPGs International aviation – CO_2	For domestic and international aviation, the data sources and methodology used for separating international aviation fuel consumption from other fuel consumption for domestic aviation were not clearly reported. During the review, Italy provided further information, explaining that aviation fuel consumption data are compared with data from other sources, such as EUROCONTROL. Since 2005, EUROCONTROL has provided emission estimates for the aviation sector for each EU member State under both the UNFCCC and the Convention on Long-range Transboundary Air Pollution for landing and take-off cycles and cruise phases for domestic and international aviation, including data on fuel consumption and EFs. To ensure consistency with the data reported in the national energy balance, Italy only considers the fuel consumption data reported by EUROCONTROL as part of this data set for landing and take-off cycles (domestic and international) and domestic cruise; for international cruise, by contrast, fuel consumption is derived on the basis of the difference between those values and the total fuel consumption reported in the national energy balance. The TERT encourages Italy to improve the transparency of reporting for future NIDs by clarifying the data sources and methodologies used for separating international aviation fuel consumption from other fuel consumption for domestic aviation.
3.E.4	Specified in paragraph 54 of the MPGs Feedstocks, reductants and other non-energy use of fuels – CO_2	For anthracite used in the metal industry under non-energy use of fuels, the Party did not describe the data source or explain how double counting was avoided between the energy and IPPU sectors in the NID. During the review, Italy provided more information, explaining that all coal data were taken from a joint questionnaire under the International Energy Agency,

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		Eurostat and the United Nations Economic Commission for Europe, which is the template for national communications to Eurostat, the International Energy Agency and OECD. The Party noted that additional information on the use of anthracite is available under the EU ETS scheme through data collected from different installations, where the declarants report whether the fuels or materials used fall under combustion, balance or process emissions. A project involving the experts who compile the energy balance is currently under way and is aimed at incorporating information from the EU ETS. The TERT encourages Italy to improve the transparency of its reporting for future NIDs by including information related to the separation of combustion and process emissions (energy and IPPU) for anthracite used in the metal industry through the use of data from the EU ETS scheme.

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 39 of the MPGs 2.A.1 Cement production – CO_2	According to figure 4.1 of the NID (p.141), the CO_2 IEF for clinker production for 2022 (around 450 kg CO_2/Mg clinker) is significantly lower than the CO_2 IEFs for previous years (ranging from 520 to 530 kg CO_2/Mg clinker). The NID notes that this drop is due to an increase in decarbonized materials fed into the kilns of a grou of clinker facilities. However, table 4.5 of the NID shows minor changes in the replacement of natural raw materials between 2021 and 2022. During the review, the Party clarified that table 4.5 of the NID only reports on the replacement of primary raw materials with secondary ones, and the amount of decarbonized material is not specified. Therefore, the change in the CO_2 IEF between 2021 and 2022 cannot be directly linked to variations in the use of secondary raw materials. The TERT recommends that the Party provide in its next NID additional information to explain the significant change in the CO_2 IEF for clinker production between 2022 and previous years and explain how the replacement of natural raw materials impacts the IEF.

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 24 of the MPGs 3.A.1.a. Dairy cattle – CH_4	In the NID (section 5.2.2, p.227), the Party reported using a tier 2 approach to estimate enteric CH_4 emissions from dairy cattle, which is a key category. Although several parameters, such as average animal weight, milk production, feed digestibility and milk fat content, are based on detailed national data reflecting productivity, feeding regimes and regional differences, the default coefficient for calculating NE_m from the 2006 IPCC Guidelines (vol. 4, chap. 10, table 10.4) was still applied. The Party did not explain how this default value adequately represents the specific characteristics of Italian dairy cattle within the tier 2 framework. During the review, the Party clarified that the default coefficient for calculating NE_m is considered appropriate for national conditions as it aligns with typical feeding practices in Italy. The Party also noted that national data, including on average body weight, feed digestibility, milk yield, DE and Y_m, were used in developing EFs, demonstrating that detailed livestock information is available. The Party stated that experts from the Research Centre on Animal Production support the use of the IPCC default value, and further consultation with experts is planned in the context of applying the 2019 Refinement to the 2006 IPCC Guidelines. The TERT encourages the Party to provide a clear explanation of how the IPCC default value for NE_m (vol. 4, chap. 10, table 10.4) adequately reflects the characteristics of Italian dairy cattle.
5.A.2	Specified in paragraph 24 of the MPGs	In the NID (section 5.2.2, pp.231–232), the Party reported using a tier 2 approach to estimate enteric CH_4 emissions from sheep, which is a key category. Although

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
	3.A.2 Sheep – CH_4	several parameters, such as average animal weight, milk and wool production, weight gain, birth rates and time on pasture, are based on detailed national data reflecting sheep productivity and management practices, the default DE value from the 2006 IPCC Guidelines (65 and 75 per cent, as per vol. 4, chap. 10, table 10.2) was still applied. The Party did not explain how this default value adequately represents the characteristics of sheep production systems in Italy within the tier 2 framework. During the review, the Party clarified that national studies support the use of the IPCC default DE value as an appropriate parameter by suggesting that it reflects typical feeding practices across Italy. The Party also noted that it intends to revisit the DE value in future submissions, particularly when applying the 2019 Refinement to the 2006 IPCC Guidelines (chap. 10), and indicated that it will continue to engage with national research institutions to assess any updates. The TERT encourages the Party to provide the results of further analysis or evidence of the representativeness of the default DE value across regions or production systems. The TERT also encourages the Party to develop and apply country-specific or regionally differentiated DE values for sheep, using national studies and in collaboration with research institutions, and explain any recalculations in the NID.
5.A.3	Specified in paragraph 24 of the MPGs 3.A.4.a. Buffalo – CH_4	In the NID (section 5.2.2, p.231), the Party reported using a tier 2 approach to estimate enteric CH_4 emissions from buffalo. Although several parameters, such as average body weight, milk production, milk fat content, feed digestibility, weight gain, proportion of calving cows and pasture use, are based on national data sources for Italian buffalo management and production systems, the default coefficient for calculating NE_m and the default Y_m from the 2006 IPCC Guidelines (0.386 MJ d^{-1} kg^{-1} from vol. 4, chap. 10, table 10.4 and 6.5 per cent from vol. 4, chap. 10, table 10.12) were still applied. The Party did not present a structured plan or justify the continued use of these default values or demonstrate how they are representative of Italian buffalo breeds. Given that enteric fermentation from buffalo is a key subcategory under category 3.A.4, applying country-specific NE_m and Y_m values where data are available would improve the transparency and accuracy of the estimates. During the review, the Party clarified that no national data on physiological or productivity parameters of buffalo are currently available for deriving country-specific values for NE_m and the Y_m. The Party also indicated that there are no ongoing or planned national studies related to these parameters, although it plans to engage with academic institutions as part of a broader effort to align future estimates with the 2019 Refinement to the 2006 IPCC Guidelines (chap. 10). The TERT encourages the Party to explain how the IPCC default values for the coefficient for calculating NE_m and Y_m from the 2006 IPCC Guidelines are representative of Italian buffalo breeds in terms of management, productivity and regional context. The TERT also encourages the Party to put in place a structured process for deriving country-specific values for NE_m and the Y_m for buffalo, using national expertise and in collaboration with research institutions.
5.A.4	Specified in paragraphs 21 and 23 of the MPGs 3.D Agricultural soils	In the NID (section 5.5.1, p.259), the Party reported using a tier 1 methodology and IPCC default EFs to estimate direct and indirect N_2O emissions from managed soils, which is a key category. The Party did not provide a clear rationale for the continued use of a tier 1 method for this key source or outline a strategy for transitioning to a higher-tier approach, as encouraged by the 2006 IPCC Guidelines. During the review, the Party clarified that it continued to use a tier 1 methodology owing to a lack of comprehensive data on nitrogen inputs disaggregated by crop type, land use, agricultural management and environmental conditions, as required for a tier 2 estimation method. The Party also clarified that, within the tier 1 framework, it applies several country-specific parameters, such as nitrogen excretion rates by animal category, fractions of crop residues returned to soils, volatilization fractions and national leaching estimates derived from hydrological data. Although national agricultural monitoring systems exist, the Party confirmed that there are no ongoing efforts or plans to systematically collect the detailed data

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		necessary to support a transition to the use of a tier 2 methodology for this category. The TERT recommends that the Party, when applying the methodological guidance provided in the 2006 IPCC Guidelines (vol. 4, chap. 2), including in the decision trees, document the selection of an appropriate tier for its methodology to estimate direct and indirect N_2O emissions from managed soils. In addition, the TERT encourages the Party to put in place a structured data-collection strategy to support the implementation of a tier 2 approach for estimating N_2O emissions from agricultural soils, which should cover, inter alia, the development of national data on nitrogen inputs disaggregated by crop type, land use and management practices for use in the next submission.

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 paragraph 39 of the MPGs 4. General (LULUCF)	The Party reported: (a) In NID table 6.8 the SOC stock changes in the upper 30 cm of mineral soils under the forest land remaining forest land category at the national level. However, the Party did not clearly explain how this table was developed or the meaning of the values reported; (b) In the NID (chap. 6.1, p.281) the Party explained that the assumptions on land-use conversions are based on expert judgment, but did not cite any sources or provide any supporting documentation. The TERT noted that a rule-based method was applied using known patterns in land-use change, but no documentation was provided, as specified in the MPGs (para. 19(c)). During the review, the Party clarified that: (a) NID table 6.8 reflects annual SOC stock changes in the top 30 cm of soil and provided the AD for the whole time series, explaining the estimation process; (b) The expert judgments were provided in accordance with the 2006 IPCC Guidelines (vol. 1, chap. 2.2 and annex 2A.1). Italy explained that experts' qualifications were verified, and the judgments were approved by the sectoral inventory compiler and the head of the GHG inventory team and discussed with national experts and during previous GHG inventory reviews under the UNFCCC. The TERT recommends that the Party: (a) Provide the AD for the whole time series and explain the calculation process for estimating the SOC stock changes in the upper 30 cm of soil for the mineral soil pool in forest land remaining forest land at the national level; (b) Include a brief description of the documentation of and process for expert judgments, including any established protocols, with a view to enhancing the transparency of reporting with regard to the development of AD for land-use conversions.
6.L.2	Specified in paragraph 39 of the MPGs 4(IV) Biomass burning – CH_4, N_2O	In chapter 6.11.5 of the NID, the Party reported recalculations of CH_4 and N_2O emission estimates from wildfires for forest land, cropland and grassland across the entire time series. The recalculations were attributed to the use of (1) updated EFs aligned with the 2006 IPCC Guidelines and (2) a revised ratio of carbon to dry matter (revised from 0.5 to 0.47). However, no explanation was provided for the change in the EFs. During the review, the Party clarified that, for the 2024 submission, it used the default EF values from the 2006 IPCC Guidelines for dry wood, replacing the values based on the data from 2003 previously used. This update ensures consistency with models such as the For-est model, which is used to estimate carbon stock changes in biomass pools. The TERT recommends that the Party include a detailed description of how it calculated CH_4 and N_2O emissions from wildfires for forest land, cropland and grassland, covering EFs and calculation parameters, with a view to improving the transparency of the GHG estimates.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*

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 39 of the MPGs 5.A Solid waste disposal on land – CH_4	The Party reported in its NID (section 7.2.2, p.332) that landfill composition was estimated on the basis of composition data (Tecneco, 1972; National Research Council, 1980; Ferrari, 1996; Italian Institute for Environmental Protection and Research, 2010) used to derive waste composition for four separate periods of time. The assumed composition for each period is reported in tables 7.4 (1950–1970), 7.5 (1971–1990), 7.6 (1991–2005), 7.7 (2006–2015) and 7.8 (2016–2022) of the NID. It was not clear from the NID how missing AD were addressed over the time series, and in particular, which methodologies were applied for which years. During the review, the Party clarified that estimates were produced for missing AD using methods from the 2006 IPCC Guidelines (vol. 1, chap. 5), primarily interpolation and the overlap method, on the basis of data from tables 7.4–7.7 of the NID. The TERT recommends that the Party describe in the NID how estimates were produced for missing AD across the time series, including a clear explanation of the methodologies applied (e.g. interpolation or overlap), the years addressed and the data sources used.
7.W.2	Specified in paragraph 24 of the MPGs 5.D.1 Domestic wastewater – CH_4	The Party reported in the NID (section 7.5.2, p.356) that CH_4 emissions from domestic wastewater were estimated using a tier 2 approach. However, according to CRT summary table 1, CH_4 emissions from wastewater treatment and discharge were estimated using a tier 1 methodology. During the review, the Party clarified that it used a mix of tier 1 and tier 2 approaches. AD and the EF for biochemical oxygen demand are country-specific, whereas other parameters such as the CH_4 correction factors are default values from the 2006 IPCC Guidelines (vol. 5, chap. 6, table 6.3). The Party also noted that further investigation is planned, including an assessment of EFs for wastewater treatment plants. The TERT encourages the Party to continue to investigate the development of country-specific parameters for key treatment pathways. In addition, given that CH_4 emissions from wastewater is a key category, the TERT recommends the Party adopt country-specific CH_4 correction factors to improve the accuracy of estimates.
7.W.3	Specified in paragraph 39 of the MPGs 5.D.1 Domestic wastewater – CH_4	The Party noted in its NID (section 7.5.2, p.359) that total CH_4 recovered was estimated on the basis of CH_4 production and the efficiency of capture. Capture is assumed to be 100 per cent efficient for anaerobic digestion systems as they are fully enclosed. However, it is not clear what proportion of the total organic load in wastewater is treated in anaerobic and aerobic processes. During the review, the Party clarified the treatment pathways for domestic and commercial wastewater. Wastewater sludge is treated using both aerobic (Imhoff and latrine systems) and anaerobic digestion processes. All wastewater treated at wastewater treatment plants is subject to anaerobic digestion, where 100 per cent efficiency is assumed for CH_4 capture. Wastewater sludge treated outside of domestic and commercial wastewater treatment plants is directed to Imhoff or latrine systems. In this case, sludge is collected and disposed of in landfills, applied to agricultural land or treated in composting processes. Emissions from wastewater sludge treated via these aerobic pathways are accounted for under the relevant waste subsector or the agriculture sector. The TERT recommends that the Party provide more information in the NID on the treatment pathways for sludge in domestic and commercial wastewater treatment; for example, by explaining that the 100 per cent efficiency rate for CH_4 capture is only applied to total organic load in wastewater in sludge treated at wastewater treatment plants, and CH_4 generated from sludge treated in Imhoff or latrine systems is accounted for under the waste and agriculture sectors, as appropriate.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
7.W.4	Specified in paragraph 40 of the MPGs 5.F Solid waste disposal on land – CO_2	The Party reported a 67 per cent decrease in long-term storage of carbon in solid waste disposal sites between 1990 and 2022 (CRT 10s1). However, the reason for this declining trend is not clear, given that the Party reported continued disposal activity in the NID (section 7.2.5, table 7.15, p.344) and applied the default IPCC value of 0.5 for fraction of degradable organic carbon that decomposes, meaning that 50 per cent of all degradable organic matter disposed to landfill is stored over a long period (section 7.2.2, p.337). During the review, the Party provided four data files used to estimate long-term storage of carbon in controlled and uncontrolled landfills in dry and wet regions. The Party noted that the four contributions were added together to estimate the long-term storage of carbon. An analysis of the data files revealed that memo item 5.F.1 (long-term storage of carbon) was erroneously reported as an annual value, rather than a cumulative volume, which resulted in memo item 5.F.2 (annual change in long-term storage of carbon) being incorrectly calculated and reported. The Party agreed to review and correct the reporting of memo items 5.F.1 and 5.F.2 for future submissions. The TERT recommends that the Party review the estimates for long-term carbon storage in landfill sites (memo item 5.F.1), ensuring that the estimate reflects cumulative storage rather than annual values, and correctly report memo item 5.F.2, which represents the annual change in long-term storage of carbon, on the basis of the revised cumulative data from memo item 5.F.1.

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

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

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

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

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

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

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
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 83 of the MPGs	Italy did not report information on the costs and non-GHG mitigation benefits of each action, policy and measure reported, or on how the mitigation actions interact with each other. During the review, the Party explained that this information is not available for each policy and measure at the national level, noting that some sectoral-level

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		information on costs is reported in the National Energy and Climate Plan, and some non-GHG mitigation benefits are estimated in the emissions scenarios for pollutants covered by the Convention on Long-range Transboundary Air Pollution. The TERT encourages the Party, to the extent possible, to provide information on the costs and non-GHG mitigation benefits of each action, policy and measure and on how the mitigation actions interact with each other. If the Party deems that this is not possible, the TERT encourages it to explain why this is so.
11.2	Specified in paragraph 89 of the MPGs	The Party did not provide information on how its actions and PaMs are modifying longer-term trends in GHG emissions and removals. During the review, Italy explained that the main instrument used to outline its PaMs is the National Energy and Climate Plan, the primary goal of which is to set the pathway for reaching the Party's 2030 targets under EU legislation and the NDC. Therefore, evaluations of each policy are only available up until 2030. The 'with additional measures' scenario, which covers emissions up until 2040 (beyond the 2030 term of the NDC), evaluates how PaMs jointly affect long-term trends in GHG emissions and removals. Italy recently updated its emission projections (under both the 'with measures' and 'with additional measures' scenarios) to take into account the latest GHG inventory data and extended the time-horizon to 2055. The TERT encourages the Party, to the extent possible, to provide information on how its actions and PaMs are modifying longer-term trends in GHG emissions and removals.
11.3	Specified in paragraph 90 of the MPGs	The Party did not provide detailed information on the assessment of economic and social impacts of response measures. During the review, the Party explained that according to its interpretation of the MPGs, paragraph 90 refers to the provision contained in paragraph 78, which only applies to Parties with NDCs that consist of adaptation actions and/or economic diversification plans resulting in mitigation co-benefits consistent with Article 4, paragraph 7, of the Paris Agreement. Italy, as an EU member State, is contributing to the EU NDC, which is a single-year economy-wide net domestic reduction target. However, the TERT notes that paragraph 90 of the MPGs does not refer to the requirement specified in paragraph 78 of the MPGs, and explained this to the Party. The Party acknowledged this explanation and will consider reporting this information in the next submission. The TERT encourages the Party, to the extent possible, to provide detailed information on the assessment of economic and social impacts of response measures.

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

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

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

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
13.1	Specified in paragraph 96(d) of the MPGs	Italy did not provide information on a sensitivity analysis for its projections in its BTR1. During the review, Italy explained that it revised the projections when updating the National Energy and Climate Plan in 2023 and 2024, but the methodology used did not allow for a robust sensitivity analysis to be performed. The Party also stated that it plans to perform a sensitivity analysis in the coming years and report the results in future BTRs. The TERT encourages the Party to report a sensitivity analysis for its projections, together with a brief explanation of the methodologies and parameters used.

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

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

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

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

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

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

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

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

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

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(l) of the MPGs	The MPGs state that Parties are to provide information on financial support provided through multilateral channels, including on the sector, as available. The Party indicated in CTF tables III.2 that information on sectors is not available but did not explain the reasons for this. The Party clarified during the review that it was unable to report this information, as the sector related to multilateral contributions is linked to multilateral outflows, but Italy only reported on its inflows to multilateral channels. The TERT recommends that the Party include information on sectors, as available, or, if this information is not available, explain why this information cannot be reported.

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

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
19.1	Specified in paragraph 127 of the MPGs	The Party included information on projects related to support for technology development and transfer in section 5.4 and table 5.5 of its BTR1. The table includes information on projects implemented by MASE, but the projects reported therein were not included in CTF table III.4. The Party clarified that the projects reported in table 5.5 of the BTR1 are still relevant in terms of actions related to support for developing countries; however,

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		the related financial transactions were completed in a period outside the scope of the BTR1. The TERT recommends that the Party ensure consistency between CTF table III.4 and the BTR text in terms of the projects reported, or explain in the BTR why certain projects were not included in the CTF table.
19.2	Specified in paragraph 127 of the MPGs	Under the MPGs, Parties are to provide information on the status of measures or activities related to support for technology development and transfer, to the extent possible and as relevant. The Party indicated in CTF table III.4 that information on the status of measures or activities is not available but did not explain the reasons for this. The Party clarified during the review that information on the status of measures or activities is not collected through the Creditor Reporting System data-collection system of the Development Assistance Committee of OECD, meaning that it is not possible for MASE to compile this information in a robust and reliable manner, and the information was therefore reported as not available. The TERT recommends that the Party include information on the status of measures or activities related to support for technology development and transfer, to the extent possible and as relevant, or if such information is not available, explain why the information cannot be reported.

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 129 of the MPGs	The Party included information on projects providing capacity-building support in section 5.5 and table 5.6 of its BTR1. The table includes information on projects implemented by MASE, but the projects reported therein are not included in CTF table III.5. The Party clarified that the projects reported in table 5.6 of the BTR1 are still relevant in terms of actions aimed at supporting developing countries; however, the related financial transactions were completed in a period outside the scope of the BTR1. The TERT recommends that the Party ensure consistency between CTF table III.5 and the BTR text in terms of the projects reported, or explain in the BTR why certain projects were not included in the CTF table.
20.2	Specified in paragraph 129 of the MPGs	Under the MPGs, Parties are to provide information on the status of measures or activities related to capacity-building support, to the extent possible and as relevant. The Party indicated in CTF table III.5 that information on the status of measures or activities is not available but did not explain the reasons for this. The Party clarified during the review that information on the status of measures or activities is not collected through the Creditor Reporting System data-collection system of the Development Assistance Committee of OECD, meaning that it is not possible for MASE to compile this information in a robust and reliable manner, and the information was therefore reported as not available. The TERT recommends that the Party include information on the status of measures or activities related to capacity-building support, to the extent possible and as relevant, or if such information is not available, explain why the information cannot be reported.

Annex

Documents and information used during the review

A. Reference documents

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

BTR1 CTF tables of Italy. 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 Italy. 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. 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.

Report on the technical expert review of the BTR1 of the EU. 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 Emanuele Peschi and Daniela Romano (Italian Institute for Environmental Protection and Research), including additional material. The following references were provided by Italy and may not conform to UNFCCC editorial style as some have been reproduced as received:

G. Molle, M. Decandia, A. Cabiddu, S.Y. Landau,A. Cannas. *An update on the nutrition of dairy sheep grazing Mediterranean pastures*. Available at https://doi.org/10.1016/j.smallrumres.2008.03.003.

Laura Valli, Giuseppe Bonazzi, Claudio Fabbri, Rocío D. Cóndor Golec. *Progetto Meditairaneo Settore Agriocltura*. Agenzia per la Protezione dell'Ambiente e per i Servizi Tecnici.