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Report on the technical review of the fourth biennial report of Italy

Developed country Parties were requested by decision 2/CP.17 to submit their fourth biennial report to the secretariat by 1 January 2020. This report presents the results of the technical review of the fourth biennial report of Italy, conducted by an expert review team in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". The review took place from 16 to 20 March 2020 remotely.

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Contents

Abbreviations and acronyms

AEA	annual emission allocation
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CTF	common tabular format
DTU	Technical University of Denmark
EFISCEN	European Forest Information Scenario model
ERT	expert review team
ESD	European Union effort-sharing decision
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GHG	greenhouse gas
G4M	Global Forest Model
HFC	hydrofluorocarbon
IE	included elsewhere
IMELS	Italian Ministry for the Environment, Land and Sea
INECP	Integrated National Energy and Climate Plan of Italy
IPPU	industrial processes and product use
ISPRA	Italian National Institute for Environmental Protection and Research
LULUCF	land use, land-use change and forestry
MOU	memorandum of understanding
Mtoe	million tonnes of oil equivalent
NA	not applicable
NC	national communication
NE	not estimated
NF_3	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
non-Annex I Party	Party not included in Annex I to the Convention
N_2O	nitrous oxide
OECD	Organisation for Economic Co-operation and Development
PaMs	policies and measures
PFC	perfluorocarbon
RES	renewable energy source(s)
SF_6	sulfur hexafluoride
TIMES	The Integrated Market Allocation-Energy Flow Optimization Model System
UNEP	United Nations Environment Programme
UNFCCC reporting guidelines on BRs	"UNFCCC biennial reporting guidelines for developed country Parties"
UNFCCC reporting guidelines on CTF tables	common tabular format for the "UNFCCC biennial reporting guidelines for developed country Parties"
UNFCCC reporting guidelines on NCs	"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications"
WAM	'with additional measures'
WEM	'with measures'
WOM	'without measures'

I. Introduction and summary

A. Introduction

1. This is a report on the centralized technical review of the BR4[1] of Italy. The review was organized by the secretariat in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention", particularly "Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention" (annex to decision 13/CP.20).

2. In accordance with the same decision, a draft version of this report was transmitted to the Government of Italy, which provided comments that were considered and incorporated into this final version of the report.

3. The review was conducted together with the review of five other Parties included in Annex I to the Convention from 16 to 20 March 2020 remotely[2] by the following team of nominated experts from the UNFCCC roster of experts: Parvana Babayeva (Azerbaijan), Souhila Bouliouta (Algeria), Hakima Chenak (Algeria), Kenel Delusca (Haiti), Ryan Deosaran (Trinidad and Tobago), Craig William Elvidge (New Zealand), Raul Jorge Garrido Vazquez (Cuba), Matej Gasperic (Slovenia), Liviu Gheorghe (Romania), Maria Ana Gonzalez Casartelli (Argentina), Yamikani Idriss (Malawi), Jean Claude Kabamba Lungenyi (Democratic Republic of the Congo), Christopher Manda (Malawi), Tendayi Marowa (Zimbabwe), Naoki Matsuo (Japan), Esther Mertens (Belgium), Detelina Petrova (Bulgaria), Mohan Poudel (Nepal), Janis Rekis (Latvia), Orlando Ernesto Rey Santos (Cuba), Kristina Saarinen (Finland), Mayuresh Sarang (Zimbabwe), Marina Shvangiradze (Georgia) and Robin White (Canada). Mr. Gasperic, Ms. Gonzalez Casartelli, Ms. Petrova, Mr. Rey Santos, Ms. Saarinen and Ms. Shvangiradze were the lead reviewers. The review was coordinated by Hajar Benmazhar, Veronica Colerio, Claudia do Valle Costa, Nalin Srivastava, Sevdalina Todorova and Sina Wartmann (secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the BR4 of Italy in accordance with the UNFCCC reporting guidelines on BRs (annex I to decision 2/CP.17).

1. Timeliness

5. The BR4 was submitted on 30 December 2019, before the deadline of 1 January 2020 mandated by decision 2/CP.17. The CTF tables were also submitted on 30 December 2019.

2. Completeness, transparency of reporting and adherence to the reporting guidelines

6. Issues and gaps identified by the ERT related to the reported information are presented in table 1. The information reported by Italy in its BR4 mostly adheres to the UNFCCC reporting guidelines on BRs.

Table 1
Summary of completeness and transparency of mandatory information reported by Italy in its fourth biennial report

Section of BR	*Completeness*	*Transparency*	*Reference to description of recommendation(s)*
GHG emissions and removals	Complete	Transparent	

[1] The BR submission comprises the text of the report and the CTF tables, which are both subject to the technical review.

[2] Owing to the circumstances related to the coronavirus disease 2019, the technical review of the BR submitted by Italy had to be conducted remotely.

Section of BR	*Completeness*	*Transparency*	*Reference to description of recommendation(s)*
Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	Complete	Mostly transparent	Issue 1 in table 3
Progress in achievement of targets	Complete	Mostly transparent	Issues 1 and 4 in table 5 Issue 1 in table 7
Provision of support to developing country Parties	Complete	Mostly transparent	Issue 1 in table 14

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in chapter III below. The assessment of completeness and transparency by the ERT in this table is based only on the "shall" reporting requirements.

II. Technical review of the information reported in the fourth biennial report

A. Information on greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target

1. Technical assessment of the reported information

7. Total GHG emissions[3] excluding emissions and removals from LULUCF decreased by 17.4 per cent between 1990 and 2017, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 20.4 per cent over the same period. Emissions reached their highest point in 2005 and decreased thereafter. The decline in emissions reflects the slowdown in both economic and population growth, the lingering effects of the economic recession, which led to reduced activity in the energy and industrial sectors, and the impact of climate change policies across sectors (see chap. II.C.1 below). The decarbonization of the economy was driven mainly by factors such as an increase in the use of RES (e.g. hydropower, wind power, photovoltaic energy production and biomass for heating), energy efficiency improvements, the use of natural gas instead of fuel oil for energy and heat production in the manufacturing sector, the installation of abatement technologies in adipic and nitric acid production plants, and reductions in the cattle population and the use of fertilizers.

8. Table 2 illustrates the emission trends by sector and by gas for Italy. Note that information in this paragraph and table 2 is based on Italy's 2019 annual submission, version 1. All emission data in subsequent chapters are based on Italy's BR4 CTF tables unless otherwise noted. The emissions reported in the 2019 annual submission are the same as those reported in CTF table 1.

Table 2
Greenhouse gas emissions by sector and by gas for Italy for 1990–2017

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2016*	*2017*	*1990–2017*	*2016–2017*	*1990*	*2017*
Sector									
1. Energy	425 232.61	459 094.71	418 614.60	350 284.32	345 851.74	–18.7	–2.0	82.1	80.9
A1. Energy industries	137 158.26	149 461.31	136 668.31	104 358.71	104 769.24	–23.6	–3.5	26.5	24.5
A2. Manufacturing	93 234.97	92 195.35	61 589.04	52 192.09	51 128.88	–45.2	0.0	18.0	12.0

[3] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of CO_2 eq excluding LULUCF, unless otherwise specified.

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2016*	*2017*	*1990–2017*	*2016–2017*	*1990*	*2017*
industries and construction									
A3. Transport	102 216.82	123 808.39	115 247.85	103 137.88	99 486.61	–2.7	0.2	19.7	23.3
A4. and A5. Other	79 745.48	82 810.58	96 279.59	83 367.87	83 373.60	4.5	0.0	15.4	19.5
B. Fugitive emissions from fuels	12 877.07	10 819.08	8 829.82	7 227.78	7 093.41	–44.9	–1.9	2.5	1.7
C. CO_2 transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	40 471.72	39 177.96	36 747.51	32 556.04	32 826.57	–18.9	0.8	7.8	7.7
3. Agriculture	34 739.37	33 945.95	30 012.21	31 000.17	30 780.40	–11.4	–0.7	6.7	7.2
4. LULUCF	–3 283.49	–16 229.02	–34 673.61	–36 557.97	–18 378.89	459.7	–49.7	NA	NA
5. Waste	17 301.95	21 887.13	20 398.72	18 278.48	18 249.14	5.5	–0.2	3.3	4.3
6. Other[a]	NO	NO	NO	NO	NO	NA	NA	NA	NA
Gas[b]									
CO_2	439 639.71	470 293.76	426 350.97	353 487.27	348 991.36	–20.6	–1.3	84.9	81.6
CH_4	48 262.93	50 765.19	46 918.91	43 576.61	43 852.32	–9.1	0.6	9.3	10.3
N_2O	26 083.81	28 444.59	18 825.62	17 943.64	17 796.11	–31.8	–0.8	5.0	4.2
HFCs	444.00	2 476.87	11 723.95	15 045.11	15 294.12	3 344.6	1.7	0.1	3.6
PFCs	2 906.86	1 488.50	1 520.39	1 613.73	1 313.68	–54.8	–18.6	0.6	0.3
Unspecified mix of HFCs and PFCs	NA, NO	19.26	19.26	19.26	19.26	NA	0.0	NA	0.0
SF_6	408.35	604.31	393.79	399.42	417.49	2.2	4.5	0.1	0.1
NF_3	NA, NO	13.26	20.17	33.98	23.50	NA	–30.8	NA	0.0
Total GHG emissions excluding LULUCF	**517 745.65**	**554 105.75**	**505 773.05**	**432 119.01**	**427 707.85**	**–17.4**	**–1.0**	**100.0**	**100.0**
Total GHG emissions including LULUCF	**514 462.17**	**537 876.73**	**471 099.44**	**395 561.04**	**409 328.96**	**–20.4**	**3.5**	**NA**	**NA**

Source: GHG emission data: Italy's 2019 annual submission, version 1.
[a] Emissions and removals reported under the sector other (sector 6) are not included in the total GHG emissions.
[b] Emissions by gas without LULUCF. The Party did not report indirect CO_2 emissions.

9. In brief, Italy's national inventory arrangements were established in accordance with legislative decree 51 of 7 March 2008, which instituted the national system for the Italian GHG inventory and made ISPRA the single national entity responsible for preparing and compiling the inventory and IMELS responsible for endorsing and submitting it to the secretariat. IMELS was also made responsible for managing the national registry for carbon sinks instituted by the ministerial decree of 1 April 2008, which further made ISPRA and the State Forestry Corps providers of technical and scientific support to IMELS, with ISPRA being responsible for preparing emission and removal estimates for the LULUCF sector and supplementary information on LULUCF activities under Article 7, paragraph 1, of the Kyoto Protocol. In 2013, an amendment to that ministerial decree made the Institute of Services for the Agricultural and Agro-food Market responsible for the technical coordination of the cropland and grazing land management section of the national registry for carbon sinks. With respect to the institutional, legal and procedural arrangements for reporting and archiving inventory information, Italy's BR4 refers to the information provided in the publicly available annual reports of ISPRA[4] and the Party's NIRs. The Party specified that there have been no changes in the national inventory arrangements since its NC7 and BR3.

[4] Available at http://www.sinanet.isprambiente.it/it/sia-ispra/serie-storiche-emissioni (in Italian).

2. Assessment of adherence to the reporting guidelines

10. The ERT assessed the information reported in the BR4 of Italy and recognized that the reporting is complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

B. Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies

1. Technical assessment of the reported information

11. For Italy the Convention entered into force on 14 July 1994. Under the Convention Italy committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020.

12. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. The legislative package regulates emissions of CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 using global warming potential values from the AR4 to aggregate the GHG emissions of the EU until 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms as well as new market mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Operators and airline operators can use such units to fulfil their requirements under the EU ETS, and member States can use such units for their national ESD targets, within specific limitations.

13. The EU 2020 climate and energy package includes the EU ETS and the ESD (see paras. 27–28 below). The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emission cap has been put in place for 2013–2020 with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. Emissions from ESD sectors are regulated through member State specific targets that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020.

14. The European Green Deal, launched in 2019, represents a commitment by the EU to become climate neutral by 2050, and presents a road map that encompasses all sectors of the economy. It calls for increased ambition in the 2030 emission reduction target to at least 50 per cent below the 2005 level. Member States will translate any increased ambition into action through their revised national energy and climate plans.

15. Under the ESD, Italy has a target of reducing its total GHG emissions to 13 per cent below the 2005 level by 2020. National emission targets for ESD sectors for 2020 have been translated into binding quantified AEAs for 2013–2020. Italy's AEAs change following a linear path from 308,161.63 kt CO_2 eq in 2013 to 291,006.10 kt CO_2 eq in 2020.[5]

16. Italy reported on the additional commitments of EU member States under the EU climate and energy package to achieve a 20 per cent improvement in energy efficiency, a 20 per cent share of renewable energy in the final energy consumption and a 10 per cent share of biofuels in the fuel consumption of the transport sector by 2020. In line with the EU directive on renewable energy (directive 2009/28/EC), 17 per cent of the final energy consumption of Italy should come from RES by 2020. In terms of the absolute level of primary and final energy consumption in 2020, the indicative targets for Italy, set pursuant to the EU directive on energy efficiency (directive 2012/27/EU), amount to 158 and 124 Mtoe, respectively.

17. Italy also reported on EU commitments beyond 2020 set under the Paris Agreement and the EU 2030 climate and energy framework,[6] including binding targets to be reached by 2030: at least a 40 per cent reduction in GHG emissions compared with the 1990 level (43 and 30 per cent below the 2005 level for the EU ETS sectors and ESD sectors, respectively);

[5] European Commission decision 2017/1471 amended decision 2013/162/EU to revise member States' AEAs for 2017–2020.

[6] See https://ec.europa.eu/clima/policies/strategies/2030_en.

at least 32 per cent of all energy consumed and 14 per cent of the energy consumed in road and rail transport to come from RES (EU directive 2018/2001); and at least a 32.5 per cent improvement in energy efficiency (EU directive 2018/2002).

18. The EU effort-sharing regulation, on binding annual GHG emission reductions by member States from 2021 to 2030 that contribute to climate action to meet commitments under the Paris Agreement, sets Italy an emission reduction target of 33 per cent below the 2005 level for ESD sectors. This target is to be met by annual emission limits that follow a linear emission reduction path, where appropriate allowing for some flexibility (e.g. intraperiod banking and borrowing transactions and emission allocation transfers with other member States and the net removal of CO_2 by the forestry sector (EU regulation 2018/841 on GHG emissions and removals related to LULUCF)). In terms of the absolute level of primary and final energy consumption in 2030, Italy is pursuing targets of 125.1 and 103.8 Mtoe, respectively.

2. Assessment of adherence to the reporting guidelines

19. The ERT assessed the information reported in the BR4 of Italy and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 3.

Table 3
Findings on the assumptions, conditions and methodologies related to the quantified economy-wide emission reduction target from the review of the fourth biennial report of Italy

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation*
1	Reporting requirement specified in paragraph 5 Issue type: transparency Assessment: recommendation	The Party reported in its BR4 (p.24) that, since it will not be using international market-based mechanisms to meet its emission reduction target under the Convention, CTF tables 2(e)I and 2(e)II had not been completed. The ERT noted that the previous ERT recommended that Italy include accurate information on the possible scale of contributions from international market-based mechanisms towards the achievement of its target under the Convention in CTF table 2(e)I, consistently with that reported in the textual part of the BR. However, CTF table 2(e)I does not contain any values, footnotes or notation keys that provide information on the use of units from market-based mechanisms. During the review, Italy confirmed that it does not plan to use market-based mechanisms to meet its commitments under the Convention, and that it might sell some of its excess emission units within the framework of the ESD to other EU member States. The Party stated that, in its next BR, it will report the relevant notation key in CTF table 2(e)I, namely "NA". The ERT reiterates the recommendation from the previous review report for Italy to include information on the possible scale of contributions from international market-based mechanisms towards the achievement of its target under the Convention in CTF table 2(e)I, consistently with that reported in the textual part of the BR, or explain why such information cannot be provided. The ERT noted that the transparency of the reporting in CTF tables 2 could be improved by using clearly defined notation keys (e.g. "NA" for the use of market-based mechanisms under the ESD and for the base year for NF_3 emissions) and footnotes (e.g. to explain the use of market-based mechanisms under the EU ETS, including reference to the EU BR).

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs or to the CTF table number from the UNFCCC reporting guidelines on CTF tables. The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

C. Progress made towards achievement of the quantified economy-wide emission reduction target

1. Mitigation actions and their effects

(a) Technical assessment of the reported information

20. Italy provided information on its package of PaMs implemented and planned, by sector and by gas, in order to fulfil its commitments under the Convention. During the review, the Party explained that its set of PaMs for meeting its 2030 targets is still under development. Italy reported on its policy context and legal and institutional arrangements in place for implementing its commitments and monitoring and evaluating the effectiveness of its PaMs.

21. Italy provided information on a set of PaMs similar to those previously reported, although a number of PaMs had been newly introduced. Pursuant to EU regulation 2018/1999, Italy submitted the first draft of the INECP to the European Commission. The draft was finalized in December 2018 and submitted in 2019 for extensive public consultation and a strategic environmental assessment. Italy explained that the list of PaMs in the BR4 has been revised since the BR3 to include the new measures developed for the preparation of the draft INECP. The final version of the INECP[7] was issued in January 2020 and provided to the ERT. During the review, Italy stated that it was currently working on its long-term strategy for 2050, whose adoption would likely lead to the development of additional measures.

22. Italy indicated that there have been no changes since its previous submission to the institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target. The ERT noted that the INECP includes information on the planned additions to the institutional and legal arrangements (e.g. law 141 of 12 December 2019 converting decree law 111 of 14 October 2019, known as the climate decree, establishes a permanent interministerial working group on the climate crisis within IMELS).

23. Italy did not provide estimated emission reduction impacts for many of its PaMs. In its BR4 (p.30), the Party explained that the potential emission reductions had been assessed up to 2030 for two types of PaMs: those implemented by 31 December 2016 and those planned. Information on the impact of the implemented measures was provided in CTF table 3; however, the ERT noted that, while the BR3 contained information on the individual impact of measures, the BR4 provides aggregated information at the sectoral level, without a clear explanation of how measures had been grouped in CTF table 3. The impact assessment of planned PaMs that are consistent with those reported in the draft INECP has not yet been conducted at the individual level for each measure, but only for a package of measures (calculated using TIMES). During the review, Italy explained how the measures were grouped to estimate their impact. In describing the general methodology used to estimate the impacts of its PaMs, the Party explained that avoided emissions were calculated on the basis of the level of the target parameter (saving of electricity or natural gas, share of RES in electricity generation, etc.) multiplied by the average emission factor of the fuel mix for the measure. If the measure is financial, such as subsidies for renewable capacity, the hypothetical new renewable power capacity was estimated on the basis of the specific investment cost and other technological parameters, and avoided emissions were calculated on the basis of the estimated production multiplied by the average emissions from the thermoelectric plants.

24. Italy did not report on its self-assessment of compliance with its emission reduction targets and national rules for taking action against non-compliance.

25. The key overarching related cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO_2 emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation,

[7] Available at https://www.mise.gov.it/images/stories/documenti/it_final_necp_main_en.pdf.

namely the 7th Environment Action Programme and the clean air policy package. The 2030 climate and energy framework, adopted in 2014, includes more ambitious targets, which are expected to be revised further upwards owing to the European Green Deal.

26. The 2021–2030 EU-wide policies are operationalized through national energy and climate plans (see para. 21 above). These plans will be periodically updated to reflect changes to EU policy, such as the implementation of the European Green Deal.

27. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities), which produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 target (a 21 per cent emission reduction below the 2005 level) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013 and the system now includes aircraft operations (since 2012) as well as N_2O emissions from chemical industry, PFC emissions from aluminium production and CO_2 emissions from some industrial processes that were not covered in the previous phases of the EU ETS (since 2013). For 2030, an emission reduction target of 43 per cent below the 2005 level has been set for the EU ETS.

28. The ESD became operational in 2013 and covers transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The aim of the ESD is to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020, and it includes binding annual targets for each member State for 2013–2020. The EU effort-sharing regulation, successor to the ESD, was adopted in 2018. It sets national emission reduction targets for 2030 ranging from 0 to 40 per cent below the 2005 level, and trajectories with annual limits for 2021–2030, for all member States, and keeps many of the flexibilities of the ESD.

29. Italy highlighted the EU-wide mitigation actions that are under development, such as the revision of the EU ETS and ESD rules in line with the EU 2030 emission reduction target under the 2030 EU climate and energy framework (see para. 17 above). Among the mitigation actions that will have a significant impact on future emissions and Italy's contribution to attaining the EU emission reduction target for the sectors covered by the EU ETS are phasing out coal use, significantly accelerating the use of RES, improving energy efficiency in manufacturing processes and setting a higher carbon price. For ESD sectors, the most important contribution will come from the transport and civil (residential and tertiary) sectors, combining measures for using and increasing the efficiency of renewables.

30. Italy introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported are in the areas of renewable energy and energy efficiency. The National Action Plan for Renewable Energy 2010 and legislative decree 28/2011, transposing EU directive 2009/28, define the mechanisms, incentives and institutional, financial and legal tools required to meet the Party's 2020 targets for renewable energy use. The white certificates system is a cross-cutting policy aimed at promoting energy efficiency and delivering emission reductions in end-use energy sectors, that is, the industrial, residential and service sectors. Other measures include feed-in tariffs supporting the expansion of photovoltaic and thermodynamic plants (Conto Energia); incentives for small plants to improve their energy efficiency and for the production of thermal energy from RES under the thermal energy support scheme (Conto Termico); minimum mandatory standards for new and existing buildings; numerous regulations in the transport sector (infrastructural measures, emission standards for new cars, mandatory use of biofuels); reducing N_2O emissions from nitric acid production; rationalizing nitrogen fertilizer use; and separating urban waste for collection. Significant impacts from individual measures are expected in the energy sector with the wider use of RES promoted by green certificates and feed-in tariffs (estimated aggregated impact of 8,600 kt CO_2 eq in 2020), improved energy efficiency in buildings (7,190 kt CO_2 eq in 2020) and the white certificates system (5,810 kt CO_2 eq in 2020). The mitigation effect of the measures in the transport sector reported in aggregate is the most significant (20,250 kt CO_2 eq in 2020). Other policies that will deliver significant emission reductions include the increased separation of urban waste (3,700 kt CO_2 eq in 2020).

31. Italy highlighted the domestic mitigation actions that are under development, such as the promotion of a circular economy with a focus on manufacturing in the food, textiles, construction and transport sectors; incentives for the wider use of renewables and the electrification of the industrial, civil and transport sectors; the ongoing preparation of new legislation for the transposition of the EU waste package[8] in order to improve national performance in terms of collecting and recycling waste, concurrently reducing the quantity of waste disposed to landfill; and a package of measures in the agriculture sector, including those for the application of the Common Agricultural Policy 2021–2027. Among the mitigation actions that provide a foundation for significant additional emission reduction are the gradual phasing out of coal use for electricity production by 2025, continuous rapid increase in renewable energy use and planned infrastructural changes (using innovative technologies and flexible generation networks and storage systems) over the coming years. The overall mitigation impact of these measures is included under the energy production and transformation measure (CTF table 3, row 23) and amounts to a 24,600 kt CO_2 eq emission reduction in 2030. Significant actions are also planned in the transport sector, including mandatory biofuel mixing up to 2022 and incentives to meet the biofuel emissions quota using biomethane and other advanced biofuels. The estimated mitigation impact of these additional measures was provided at sectoral level for the transport sector (13,900 kt CO_2 eq in 2030) and the civil sector (12,700 kt CO_2 eq in 2030). Table 4 provides a summary of the reported information on the PaMs of Italy.

Table 4
Summary of information on policies and measures reported by Italy

Sector	*Key PaMs*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*	*Estimate of mitigation impact in 2030 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	EU ETS	NE[a]	NE
Energy	Energy production and transformation	NE	24 600
Transport	Measures in the transport sector, including:	20 250	NE
	• Infrastructural measures (EU regulation 443/2009)	IE[b]	NE
	• Emission standards for new cars (EU regulation 443/2009)	IE[b]	NE
	• Mandatory use of biofuels (legislative decrees 128/05 and 28/2011, transposing EU directives 2003/30 and 2009/28, respectively)	IE[b]	NE
Renewable energy	Promotion of electricity production from renewables through:	8 600	NE
	• Feed-in tariffs (Conto Energia)	IE[b]	NE
	• Green certificates and all-inclusive feed-in tariffs	IE[b]	NE
Energy efficiency	Improvement of energy efficiency in buildings through:	7 190	NE
	• Tax deduction for energy savings in buildings	IE[b]	NE
	• Thermal energy support scheme (Conto Termico)	IE[b]	NE
	White certificates system	5 810	NE
	Minimum energy performance requirements	3 610	4 000
IPPU	Reduction of N_2O emissions from nitric acid production	740	NE
	EU regulation on F-gases (517/2014)	NE[c]	NE[c]
Agriculture	Rationalization of nitrogen fertilizer use	790	NE
	Electricity generation from animal waste	400	NE

[8] See https://ec.europa.eu/environment/waste/target_review.htm.

Sector	*Key PaMs*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*	*Estimate of mitigation impact in 2030 (kt CO_2 eq)*
LULUCF	National Forest Strategy (2019–2030)	NE[c]	NE[c]
Waste	Increased separation of urban waste for collection	3 700	NE

Note: The estimates of mitigation impact are estimates of emissions of CO_2 eq avoided in a given year as a result of the implementation of mitigation actions.

[a] The impact of this cross-sectoral measure is reflected in the impacts of the sectoral PaMs reported in this table.

[b] Reported as cumulative impact at sectoral level.

[c] Not reported in CTF table 3 and not quantified.

(b) Policies and measures in the energy sector

32. **Energy efficiency.** EU directive 2012/27, which establishes a common framework for promoting energy efficiency, has been transposed into legislative decree 102/2014. Italy has an indicative national target for final energy consumption of 124 Mtoe in accordance with the EU energy efficiency target of a 20 per cent reduction in energy use by 2020 (see para. 16 above). Between 2005 and 2016, primary energy demand (excluding non-energy uses) decreased by 18 per cent, from 181.5 to 148.4 Mtoe. Around 37 per cent of the savings originate from the mandatory white certificates scheme, which promotes energy efficiency in all end-uses, including combined heat and power and the industrial and commercial sectors. The energy savings made by each project are certified by means of energy efficiency titles, where one title is equivalent to 1 Mtoe. Legislative decree 102/2014 also provided for the establishment of a national energy efficiency fund that provides guarantees and easier access to credit for investment in energy-efficient industrial processes, district heating and cooling, building retrofitting and specific infrastructure (roads, airports, etc.).

33. **Energy supply and renewables.** According to EU directive 2009/28/EC, 17 per cent of the final energy consumption of Italy should come from RES by 2020. The directive was transposed by legislative decree 28/2011, which defined the mechanisms and tools necessary to achieve the targets and provided for substantial reorganization of existing incentive schemes, in particular green and white certificates. Following implementation of the package of measures for RES, Italy reported an overall share of RES in final energy consumption of 18.3 per cent in 2017, higher than its 2020 target. Electricity production from renewables increased markedly from 2010 to 2018, from about 77 to 107 GWh. The implemented measures primarily support expansion of photovoltaic plants (Conto Energia) and other RES plants (green certificates) through feed-in tariffs. As of 2016, any installations still entitled to green certificates receive, for the remaining period of entitlement, an incentive for the supported share of net production as a supplement to revenue earned from energy pricing. Owing to the exhaustion of the budget of Conto Energia (set at EUR 6.7 billion/year), any operations that took place in 2015 and 2016 were mainly supported through net metering or tax deductions (the latter only being available for small installations fitted on buildings). The impact of the measures in 2018 is estimated at 11.2 Mt CO_2 eq avoided emissions. Ministerial decree 23/2016 provided for updating existing schemes for incentives and subsidies for electricity generated from RES, including thermal solar installations. Italy plans to pursue the target of 30 per cent of gross final energy consumption from RES by 2030 by providing incentives for new renewable energy plants with a high level of technological maturity.

34. **Residential and commercial sectors.** From 1990 to 2017, GHG emissions from energy consumption in the residential and commercial sectors increased by 5.6 per cent, attributable to the increasing number of buildings and their heating systems. The PaMs deployed in these sectors comprise regulations and fiscal measures (e.g. tax deductions for energy renovation staggered over 10 years) to improve energy efficiency through specific actions targeting both existing and new buildings and appliances. Legislative decree 102/2005 (subsequently amended by legislative decree 311/2006) transposes the EU directive on energy efficiency and provides for the adoption of RES in the construction sector. The EU directive on the energy performance of buildings (directive 2010/31/EC), transposed into domestic law by legislative decree 63/2013, sets mandatory standards for new buildings. In particular, article 9 provides that, after 31 December 2018, new buildings

occupied and owned by public authorities should be nearly zero energy and that, by 31 December 2020, all new buildings should be nearly zero energy.

35. Ministerial decree 28/2012 provided for the introduction of a thermal energy support scheme (Conto Termico) for incentivizing small-scale energy efficiency measures in public buildings and production of thermal energy from RES (in both the public and the private sector). Applications under the scheme grew by 81 per cent between 2015 and 2016 and by 289 per cent between 2016 and 2017, reflecting its popularity. A particularly high number of applications were made by public bodies. According to the INECP, in 2017, requests were made for around 40,000 fit-outs of RES facilities. Newly adopted PaMs in the area include the legislative decree 34/2019, which provides for investment in energy efficiency and sustainable local development, and the Party's 2020 Budget Law, which provides for contributions of up to EUR 500 million per year to the municipalities for investment in public works that increase energy efficiency. Areas for investment include public lighting, energy saving in publicly owned buildings and public housing, and establishing renewable energy production plants.

36. **Transport sector.** GHG emissions from the transport sector were 2.7 per cent lower in 2017 than in 1990. After peaking in 2007, owing to an increase in the movement of goods and passengers, emissions from the transport sector fell by 23.2 per cent by 2017. This was primarily attributable to the economic crisis, which contributed to a reduction in movement, and the market penetration of low energy consumption vehicles. The Party described a number of measures for this sector, including infrastructural measures for enhancing the urban public transport network; emission standards for new cars; updating the fleet to improve efficiency of the vehicles and providing subsidies for trading in older cars for new ones; and mandatory use of biofuels. The objective of the national plan for electric charging infrastructure, provided for by law 134 of 7 August 2012 and adopted by the Ministry of Infrastructure and Transport, is to construct infrastructure networks for recharging electric vehicles. The plan also defines guidelines for guaranteeing the uniform development of electric vehicle charging services in the national territory. Moreover, the Party's Budget Law of 2019 provides for a tax deduction for the purchase and establishment of vehicle-charging infrastructure, valid from March 2019 to December 2021. The deduction is equal to 50 per cent of expenses incurred, split into 10 annual instalments.

37. The average emission standard for new cars was updated to 120 g CO_2/km for 2015 and 95 g CO_2/km for 2020. The Party's Stability Law 2017 provided for the launch of a significant funding plan to replace the road fleet used for local public transport (e.g. with electric and methane buses) from 2019 to 2033. It is intended to gradually review the vehicle tax system (registration tax, ownership tax, fuel duties, etc.) and to provide subsidies to those who purchase vehicles with CO_2 emissions below 70 g/km. Similar measures have been adopted for commercial vehicle fleets (decree 221/2018) to promote the purchase of industrial vehicles powered by compressed natural gas (methane), liquefied natural gas and electricity (full electric). Legislative decree 28/2011 (transposing EU directive 2009/28/EC) provides for the mandatory use of biofuels in the transport sector (10 per cent by 2020). The mandatory use of renewable electricity in relation to railways also figures among the Party's PaMs. In 2017, approximately 1.2 Mt biofuels (primarily biodiesel) were consumed in the transport sector (equivalent to 1.06 Mtoe).

38. **Industrial sector.** GHG emissions from manufacturing industries and construction decreased markedly from 1990 to 2017 (by 45.2 per cent) in line with the implementation of directive 2006/32/CE on energy end-use efficiency and energy services in the industrial sector. The white certificates scheme is the most significant measure in terms of emission reduction potential for the sector (4,600 kt CO_2 eq in 2020) and is due to be extended to 2030. Other measures include using of economic, regulatory and fiscal instruments to improve energy efficiency in the sector. A measure relating to energy audits in companies, implemented in 2015 but with a limited impact so far, will be updated to increase its effectiveness by directing audits in large companies and energy-intensive companies in the gas sector, and the fiscal benefit received by energy-intensive users will be linked to the implementation of energy efficiency interventions. A national industry plan (Impresa 4.0) has been rolled out to encourage companies (in particular micro, small and medium-sized enterprises and innovative start-ups) to invest in innovation through tax breaks and

reductions. The main objective of the plan is to stimulate investment in high-tech solutions strictly connected to energy efficiency.

(c) Policies and measures in other sectors

39. **Industrial processes.** For the IPPU sector, emissions decreased by 18.9 per cent in 2017 from the 1990 level. The main national measure reported for this sector, the aim of which is to reduce N_2O emissions from nitric acid production through application of the best available technology, resulted in a decrease of nearly 93 per cent (27.7 to 2.1 kt CO_2 eq) from 2005 to 2015. Italy is implementing EU regulation 517/2014 for this sector specifically to address F-gas emissions, mandating a reduction in the supply of HFCs by 27 and 79 per cent below the 2015 level by 2020 and 2030, respectively. Italy explained that these measures are increasing the cost and reducing the availability of synthetic refrigerants with high global warming potential. In Italy, with a number of companies developing innovations and advanced technological solutions to reduce GHG emissions, among other strategies, the domestic market is adapting to the provisions of the above-mentioned regulation much more quickly than forecast. For instance, the domestic refrigeration subsector has already migrated to using natural refrigerants. Between 2016 and 2030, F-gas emissions are expected to decrease by around 81 per cent. No specific additional national measures have been adopted to reduce the use of F-gases.

40. **Agriculture.** In the agriculture sector, emissions fell by 11.4 per cent from 1990 to 2017, owing mainly to decreases in livestock population, cultivated areas, crop production and application of nitrogen fertilizers resulting from implementation of the EU Common Agricultural Policy. The PaMs implemented in this sector at the national level address N_2O emissions from agricultural soils through rationalization of nitrogen fertilizer use and recovery of biogas from animal manure management systems. No additional implemented or planned measures were reported for the sector in the BR4.

41. **LULUCF.** The surface area of land in Italy falling under the forest category was approximately 7,590 kha in 1990, 8,369 kha in 2000, 9,032 kha in 2010 and 9,305 kha in 2015, equivalent to about 31 per cent of the total national surface area. While no PaMs were reported in CTF table 3, the BR outlines some of the latest developments in the sector. Legislative decree 34 of 3 April 2018 provides for the establishment of a new national forest strategy for 2019–2039 to promote sustainable forest management as a means of increasing the net absorption of carbon, to provide guarantees for all forest goods and services, and to promote the production of wood products. The strategy, in line with the provisions of the 2013 EU forest strategy, sets clear goals in relation to forests. In 2018, Italy prepared its National Forestry Accounting Plan, which contains Italy's forest reference level for 2021–2025 in accordance with article 8, paragraph 3, of EU regulation 2018/841.

42. **Waste management.** Between 1990 and 2017, emissions from the waste sector increased by 5.5 per cent, owing mainly to an increase in emissions from solid waste disposal. PaMs for the waste sector are mainly geared towards improving waste management by controlling the composition of landfill waste. These measures set binding targets for biodegradable waste disposed to landfill in the regions. The EU landfill directive (1999/31/EC) has been applied to landfills in Italy since July 2005 by virtue of legislative decree 36 of 13 January 2003. As a result, the volume of organic urban waste sorted and processed increased from 2.4 Mt in 2007 to 5.9 Mt in 2017. Such waste is diverted from landfill and used to produce compost. The volume of organic waste sorted and collected is expected to grow in the future. This is partly as a result of the new EU-wide obligation to recover such waste for use in fertilizer production. The development of local systems for processing organic waste will also contribute to cutting emissions by reducing the need to transport waste to centralized plants. No additional implemented or planned measures for the sector were reported in the BR4.

(d) Response measures

43. Italy did not report on its assessment of the economic and social consequences of its response measures in its BR4. The ERT noted, however, that Italy presented in its 2019 NIR several initiatives aimed at minimizing adverse impacts and information on the minimization of adverse impacts of its mitigation actions in accordance with Article 3, paragraph 14, of the

Kyoto Protocol. It also provided information on the procedures for assessing sustainability at the local and national level for clean development mechanism and joint implementation projects. The Party reported that it contributed 1.6 per cent to the worldwide clean development mechanism project portfolio and, up to February 2019, had been involved in 128 registered clean development mechanism projects, most of which were subject to ex ante assessment. Each participating Party should designate a national authority to evaluate project documentation against a set of pre-defined criteria encompassing social, environmental and economic aspects.

(e) Assessment of adherence to the reporting guidelines

44. The ERT assessed the information reported in the BR4 of Italy and identified issues relating to completeness and transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 5.

Table 5
Findings on mitigation actions and their effects from the review of the fourth biennial report of Italy

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation*
1	Reporting requirement specified in paragraph 6 Issue type: transparency Assessment: recommendation	The Party reported in its BR4 information on its mitigation actions, including on the PaMs implemented or planned since its last NC or BR to achieve its economy-wide emission reduction target. However, the ERT noted some issues with the PaMs reported. For example, some PaMs are reported twice in CTF table 3: the thermal energy support scheme (Conto Termico) is reported as both implemented (row 15) and planned (row 40); renewables in new buildings (row 36) and renewables in existing buildings (row 35) are also covered under renewables in existing and new buildings (row 41); and the national energy efficiency fund is reported both under the headings energy (row 42) and transport (row 63). In addition, the status of some measures (e.g. Conto Termico) is not clear. Renewables in new buildings is reported as a planned measure in CTF table 3 (row 36), starting in 2020, but the description of the measure in the BR4 (pp.33–34) refers to obligations established prior to 2020. According to the BR4 (p.43), implementation of the programme for the energy refurbishment of public buildings of the central administration began in 2011 and is due to continue from 2021 to 2030. However, CTF table 3 lists the programme (row 46) as planned and gives 2020 as its start year of implementation. Furthermore, Italy failed to report any PaMs addressing HFCs, PFCs or SF_6 in CTF table 3, despite the recommendation to this effect in the previous review report and the references to the EU regulation on F-gases (517/2014) and the EU directive on air-conditioning systems used in small motor vehicles (2006/40/EC) in the BR4 (pp.54–55). The ERT noted that most EU member States included the EU regulation on F-gases among the measures reported in their CTF table 3. During the review, Italy explained why the thermal energy support scheme is reported twice and with different responsible entities: the national energy service operator is responsible for the implementation and management of the measure as reported in row 15 of CTF table 3, and the Ministry of Economic Development and IMELS for the legal and administrative arrangements relating to the implementation of the measure as reported in row 40. The Party also explained that measures relating to renewables in buildings are reported for more than one sector because they are liable to have an impact on multiple sectors (e.g. electricity production or consumption in buildings). With regard to Conto Termico, its mitigation impact is accounted for in row 15 of CTF table 3. The measure is also reported as planned because it is due to be updated under the INECP. During the review, Italy further explained that PaMs relating to F-gases were omitted from CTF table 3 because no specific additional national measures have been adopted to reduce their use other than the actions provided for in EU regulations. The impact of the measures is negligible for 2020 and is accounted for under the WEM scenario for 2030. The ERT recommends that Italy include in its next BR transparent information on PaMs, clearly identifying the status of each measure in accordance with the ongoing reshaping of climate and energy policies and ensuring consistent reporting between the BR and CTF table 3 for all gases (including F-gases) and sectors.

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation*
2	Reporting requirement specified in paragraph 8 Issue type: transparency Assessment: encouragement	The Party did not report in its BR4 on the assessment of the economic and social consequences of its response measures. The ERT noted that the previous ERT had encouraged the Party to include this information in its next BR. During the review, Italy explained that relevant information on the economic and social consequences of response measures is included in its NIR every year and is reviewed annually alongside the emissions inventory (see para. 43 above). The Party noted that an assessment of the economic and social impact of planned measures is reported in paragraph 5.2 of the INECP. The ERT reiterates the encouragement from the previous review report for Italy to provide, to the extent possible, in its next BR detailed information on the assessment of the economic and social consequences of its response measures and/or to include references to documents where such information can be found.
3	Reporting requirement specified in paragraph 24 Issue type: completeness Assessment: encouragement	Italy did not report in its BR3 or BR4 on its self-assessment of compliance with emission reduction targets and national rules for taking action against non-compliance with emission reduction targets in accordance with paragraph 24 of the UNFCCC reporting guidelines on BRs. During the review, Italy explained that compliance with emission reduction targets is assessed annually on the basis of the national emissions inventory results, and that IMELS updates the document on the state of implementation of commitments to reduce GHG emissions through an annex to the Party's Financial Law (as reported in section 4.2 of the BR4). So far, the Party has not identified any need for special domestic arrangements for non-compliance as it has been compliant and intends to comply with its future commitments both under EU policies and frameworks and under the Convention. Moreover, the INECP and the long-term strategy for 2050 have been prepared in consultation with all relevant ministries and institutional stakeholders, including local and regional administrations. Noting that Italy complies with its set targets, the ERT reiterates the encouragement from the previous review report for the Party to report in its next BR, to the extent possible, on the domestic arrangements in place for its self-assessment of compliance with emission reduction targets and on its progress in establishing national rules for taking local action against domestic non-compliance with emission reduction targets.
4	Reporting requirement specified in CTF table 3 Issue type: transparency Assessment: recommendation	Italy did not provide information on estimated emission reduction impacts for most of its PaMs, including for some measures that were already reported in the BR3, and reported "IE" (without indicating where the impact is included) or "NE" for most PaMs in CTF table 3. In addition, some measures reported in the BR3 did not appear in the BR4, without a clear explanation as to why. Further, no information was provided on the cost and time scale of mitigation actions. During the review, the Party clarified its use of notation keys in CTF table 3 and explained how the measures were grouped to estimate their impact. For example, for the transport sector, the impact of all individual measures was reported as "IE" and the aggregated impact was presented in row 16 of CTF table 3 (measures in the transport sector). With regard to the general consistency of CTF table 3 between the BR4 and the BR3, Italy explained that, as reported in section 4.3 of the BR4, a thorough revision of PaMs has been carried out to ensure the coherence of all documents submitted in 2019 and to help to meet 2030 targets. While the final version of the INECP has been issued, it is binding only in terms of EU targets and is not directly applicable in the context of national PaMs, so new sets of measures are still being identified and no further information is available at this time. The Party added that detailed cost assessments of measures are likewise unavailable, although some general information about future investment and macro-economic impacts is reported in the INECP. For example, EUR 733 million has been allocated to the national energy efficiency fund for 2021–2030 (see para. 32 above). The ERT recommends that the Party include in its next BR the missing estimates of the impacts of its mitigation actions in CTF table 3, or provide adequate justification for reporting "NE" in the textual part of the BR, explaining why such impacts could not be estimated in view of its national circumstances in accordance with information provided during the review, and clarify all reporting of "IE", as it did during the review. The transparency of the reporting could be further improved by reporting

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation
		"NA" with relevant explanations for 2020 where no mitigation impact is expected (e.g. for measures starting in the same year or later).

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs or to the CTF table number from the UNFCCC reporting guidelines on CTF tables. The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

2. Estimates of emission reductions and removals and the use of units from market-based mechanisms and land use, land-use change and forestry

(a) Technical assessment of the reported information

45. For 2016, Italy reported in CTF table 1 annual total GHG emissions excluding LULUCF of 432,119.01 kt CO_2 eq, which is 16.5 per cent below the 1990 level. In 2016, emissions from sectors relating to the target under the ESD amounted to 278,922.88 kt CO_2 eq.

46. For 2017, Italy reported in CTF table 1 annual total GHG emissions excluding LULUCF of 427,707.85 kt CO_2 eq, which is 17.4 per cent below the 1990 level. In 2017, emissions from sectors relating to the target under the ESD amounted to 273,748.49 kt CO_2 eq.

47. Italy reported that it does not intend to use units from market-based mechanisms under the Convention to meet its commitment under the ESD. The ERT noted that using flexible mechanisms to meet emission reduction targets is possible under both the EU ETS and the ESD for EU member States. Given that the contribution of LULUCF activities is not included in the joint EU target under the Convention, reporting of contributions of LULUCF activities is not applicable for Italy. The Party did not report any information in CTF tables 4, 4(a) and 4(b).

48. In its BR4, Italy provided information on emissions from ESD sectors relating to the target under the ESD for 2005, 2010 and 2015. Updated information for 2013–2018 was provided during the review. The ERT noted that this information enhanced the transparency of the reporting.

49. Table 6 illustrates Italy's ESD emissions and the use of units from market-based mechanisms to achieve its ESD target.

Table 6
Summary of information on the use of units from market-based mechanisms by Italy to achieve its target

Year	ESD emissions (kt CO_2 eq)[a]	AEA (kt CO_2 eq)	Use of units from market-based mechanisms (kt CO_2 eq)	Annual AEA surplus/deficit (kt CO_2 eq)[b]	Cumulative AEA surplus/deficit (kt CO_2 eq)
2013	280 254.160	308 161.627	NA	27 907.467	27 907.467
2014	271 591.795	306 197.285	NA	34 605.490	62 512.957
2015	281 030.195	304 232.942	NA	23 202.747	85 715.704
2016	278 922.884	302 268.599	NA	23 345.715	109 061.419
2017	273 748.485	298 251.997	NA	24 503.512	133 564.931
2018	278 707.598	295 836.698	NA	17 129.100	150 694.031
2019	NA	293 421.397	NA	NA	NA
2020	NA	291 006.099	NA	NA	NA

Sources: Information provided by the Party during the review and the EU transaction log (AEAs).
[a] As reported by the Party during the review and based on the inventory estimates to be included in the 2020 GHG inventory submission.
[b] A positive number (surplus) indicates that ESD emissions were lower than the AEA, while a negative number (deficit) indicates that ESD emissions were greater than the AEA.

50. In assessing the progress towards achieving the 2020 joint EU target, the ERT noted that Italy's emission reduction target for the ESD sectors is 13 per cent below the base-year

level (see para. 15 above). In 2018, Italy's emissions covered by the ESD were 5.8 per cent (17,129.10 kt CO_2 eq) below the AEA under the ESD in 2018 and 5.9 per cent below the AEA under the ESD in 2020. Italy has a cumulative surplus of 150,694.03 kt CO_2 eq with respect to its AEAs between 2013 and 2018.

51. The ERT noted that Italy is making progress towards its ESD target by implementing mitigation actions that are delivering significant emission reductions.

(b) Assessment of adherence to the reporting guidelines

52. The ERT assessed the information reported in the BR4 of Italy and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 7.

Table 7
Findings on estimates of emission reductions and removals and the use of units from market-based mechanisms and land use, land-use change and forestry from the review of the fourth biennial report of Italy

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation*
1	Reporting requirement specified in paragraph 10 Issue type: transparency Assessment: recommendation	In its BR4, Italy reported by sector the PaMs it is implementing to achieve its quantified economy-wide emission reduction target, but did not provide information in the CTF tables on its progress towards achieving its target. CTF table 4 was left blank, including the column for total GHG emissions excluding emissions and removals from the LULUCF sector, and no footnotes or notation keys were provided. In its BR4 (p.31), on monitoring progress and assessing compliance towards targets, Italy reported that since 2013 national emissions and projections have been divided into two main sectors, namely the EU ETS and all other sectors, but did not provide information or references for each reported year on progress towards emission reduction targets, including total GHG emissions excluding and including LULUCF and information on the use of units from market-based mechanisms, as required by the UNFCCC reporting guidelines on BRs. The ERT noted that, in its BR4 (p.78), Italy referred to section 2.2.2.3 on the use of flexible mechanisms, but this section does not exist. This is not in adherence with paragraph 10 of the UNFCCC reporting guidelines on BRs, which states that, for each reporting year, the information provided on progress towards emission reduction targets should include data on the use of units from market-based mechanisms. During the review, Italy explained that, owing to an error in compiling the CTF tables, the column relating to total GHG emissions excluding emissions and removals from the LULUCF sector had not been completed and the table was thus empty. The Party confirmed that the values to be included in that column in CTF table 4 were those reported in CTF table 1s3, that LULUCF is not accounted for in the target under the Convention and that it was not using or planning to use market-based mechanisms because it is on course to achieving its target. The ERT recommends that Italy provide, in its next BR, information in CTF table 4 or an explanation as to why such information was not provided, potentially using notation keys and footnotes to explain the contributions of the LULUCF sector and market-based mechanisms towards achieving the target. The ERT noted that the contribution from LULUCF could be reported as "NA", since it is not covered by the target. With regard to the contribution of market-based mechanisms under the ESD and the EU ETS, the appropriate notation keys (e.g. "NA") and/or values for the relevant years (e.g. zero) along with explanatory footnotes could be used for reporting.

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs or to the CTF table number from the UNFCCC reporting guidelines on CTF tables. The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

3. Projections overview, methodology and results

(a) Technical assessment of the reported information

53. Italy reported updated projections for 2020, 2025, 2030 and 2035 relative to actual inventory data for 2016 under the WEM scenario. The projections are identical to those submitted to the European Commission under the EU monitoring mechanism regulation in March 2019, when the 2017 GHG inventory had not yet been submitted. The WEM scenario reported by Italy includes PaMs implemented before 31 December 2016.

54. In addition to the WEM scenario, Italy reported the WAM scenario. Italy provided a definition of its scenarios, explaining that its WAM scenario includes planned policies as reported in the draft INECP. The definitions indicate that the scenarios were prepared in accordance with the UNFCCC reporting guidelines on BRs.

55. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO_2, CH_4, N_2O, PFCs, HFCs and SF_6 (treating PFCs and HFCs collectively in each case) as well as NF_3 for 1990–2035. The projections are also provided in an aggregated format for each sector and for the national total using global warming potential values from the AR4.

56. Italy did not report emission projections for indirect GHGs such as carbon monoxide, nitrogen oxides, non-methane volatile organic compounds and sulfur oxides.

57. Emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and were not included in the totals. Italy reported on factors and activities affecting emissions for each sector.

(b) Methodology, assumptions and changes since the previous submission

58. The methodology used for the preparation of the projections is identical to that used for the preparation of the emission projections for the NC7. The energy sector projections were developed using a partial equilibrium TIMES model.[9] The model follows a bottom-up demand-driven approach in which each technology is identified by technical and economic parameters and the production of a good is conditioned to the effective demand of the end-user. The projections for other sectors, except LULUCF, were developed by means of accounting spreadsheet models using estimated emissions and emission coefficients that are projected using sector- and gas-specific parameters. The methodologies are those used for the national GHG inventories. IPPU sector projections were developed using sector-specific economic parameters, while projections for the waste sector were developed on the basis of population, PaMs addressing recycling, and other relevant variables. Projections for the LULUCF sector (the forest management reference level) were developed using two EU models, namely G4M,[10] developed by the International Institute for Applied Systems Analysis, and EFISCEN,[11] developed by the European Forest Institute.

59. To prepare its projections, Italy relied on key underlying assumptions relating to gross domestic product; population; international coal, oil and natural-gas prices; carbon price; gross value added for agriculture, construction, tertiary, energy sector and industry; number of heating degree days and number of cooling degree days; passenger person-kilometres; freight tonne-kilometres; livestock population (i.e. dairy cattle, non-dairy cattle, swine, sheep, poultry); nitrogen input (e.g. synthetic fertilizers, manure); the area of cultivated organic soils; municipal solid waste generation; the amount of waste in landfills; the share of CH_4 recovery in total CH_4 generation from landfills; and final energy consumption. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections.

60. Italy did not provide information on the changes since the submission of its NC7 and BR3 in the assumptions, methodologies, models and approaches used in the projection

[9] See https://iea-etsap.org/index.php/etsap-tools/model-generators/times.
[10] See http://www.iiasa.ac.at/web/home/research/modelsData/G4M.en.html.
[11] See https://www.efi.int/knowledge/models/efiscen.

scenarios, except for the energy sector. The Party reported in CTF table 5 the key variables and assumptions used in the preparation of the projection scenarios.

61. Italy did not provide information on sensitivity analyses. The Party indicated in its BR4 (p.79) that, owing to the processes under way, emission projections and PaMs are likely to be updated later in 2020. For the same reason, sensitivity analyses are ongoing and will be finalized later in 2020.

(c) Results of projections

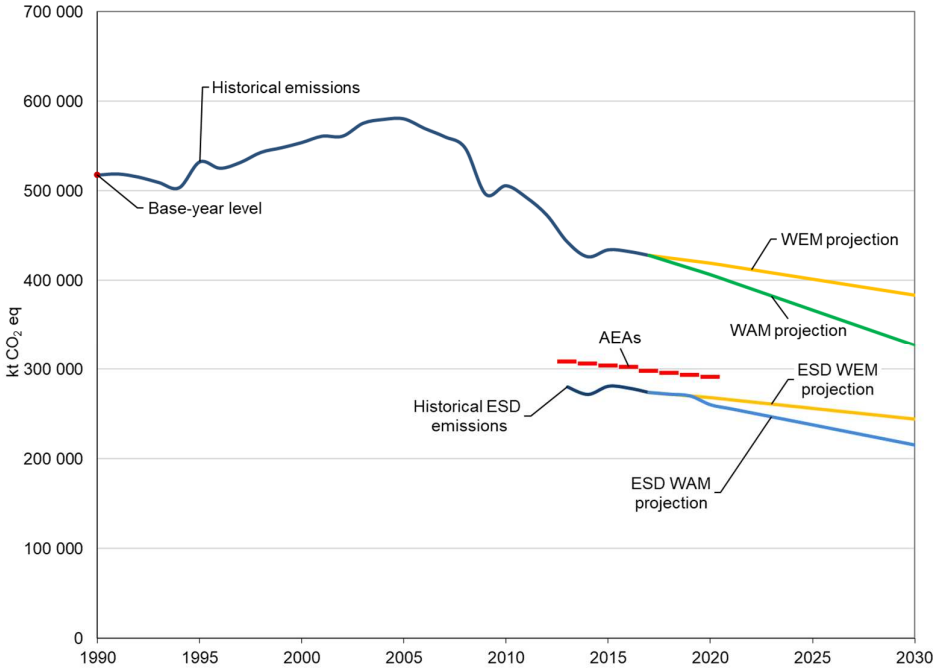
62. The projected emission levels under different scenarios and information on the quantified economy-wide emission reduction target are presented in table 8 and figure 1.

Table 8
Summary of greenhouse gas emission projections for Italy

	Total GHG emissions		*Emissions under the ESD*	
	GHG emissions (kt CO_2 eq per year)	*Change in relation to 1990 level (%)*	*ESD emissions (kt CO_2 eq per year)*	*Comparison with 2020 AEA (%)*
2020 AEA under the ESD[a]	NA	NA	291 006.10	NA
Inventory data 1990	517 745.65	–	NA	NA
Inventory data 2017	427 707.85	–17.4	273 748.49	–5.9
WEM projections for 2020	419 022.52	–19.1	268 128.23	–7.9
WAM projections for 2020	406 231.01	–21.5	260 203.11	–10.6
WEM projections for 2030	383 227.32	–26.0	244 440.30	NA
WAM projections for 2030	327 036.38	–36.8	215 522.93	NA

Sources: Italy's BR4 and CTF table 6. ESD emissions and projections data provided by the Party during the review.
Note: The projections are for GHG emissions excluding LULUCF.
[a] The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its member States. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. The Party's target under the ESD is 13 per cent below the 2005 level by 2020.

Figure 1
Greenhouse gas emission projections reported by Italy



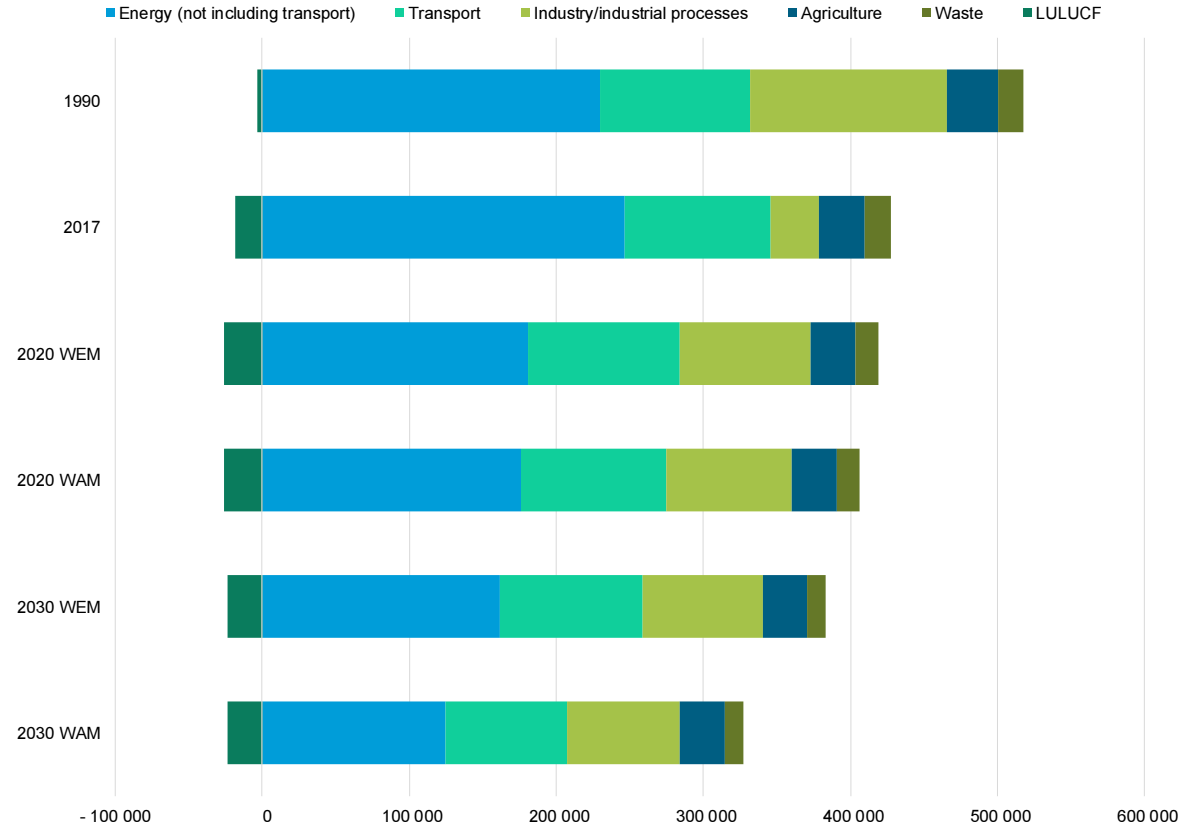
Sources: EU transaction log (AEAs) and Italy's BR4 and CTF tables 1 and 6. ESD emissions and projections data provided by Italy during the review.

63. Italy's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 419,022.52 and 383,227.32 kt CO_2, respectively, under the WEM scenario, which represents a decrease of 19.1 and 26.0 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be lower than those in 1990 by 21.5 and 36.8 per cent and amount to around 406,231.01 and 327,036.38 kt CO_2, respectively.

64. Italy's target under the ESD is to reduce its total emissions by 13 per cent below the 2005 level by 2020 (see para. 15 above). Italy's AEAs, which correspond to its national emission target for ESD sectors, change from 308,161.63 kt CO_2 eq in 2013 to 291,006.10 kt CO_2 eq for 2020. According to the projections under the WEM scenario, emissions from ESD sectors are estimated to reach 268,100.23 kt CO_2 eq by 2020. During the review, the Party reported that, under the WAM scenario, its emissions from ESD sectors in 2020 are projected to be 260,203.11 kt CO_2 eq. The projected level of emissions under the WEM and WAM scenarios is 7.9 and 10.6 per cent, respectively, below the AEAs for 2020. The ERT noted that this, together with the cumulative surplus of AEAs (see para. 50 above) suggests that Italy expects to meet its target under the WEM scenario.

65. Italy presented the WEM and WAM scenarios by sector for 2020 and 2030, as summarized in figure 2 and table 9.

Figure 2
Greenhouse gas emission projections for Italy presented by sector



Source: Italy's BR4 CTF table 6.

Table 9
Summary of greenhouse gas emission projections for Italy presented by sector

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
		2020		*2030*		*1990–2020*		*1990–2030*	
Sector	*1990*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
Energy (not including transport)	229 780.81	180 604.98	176 043.42	161 832.79	124 538.12	–21.4	–23.4	–29.6	–45.8

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
		2020		*2030*		*1990–2020*		*1990–2030*	
Sector	*1990*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
Transport	102 216.82	103 454.19	98 565.78	96 565.76	82 684.59	1.2	–3.6	–5.5	–19.1
Industry/industrial processes	133 706.70	88 608.27	85 266.74	81 975.62	76 960.52	–33.7	–36.2	–38.7	–42.4
Agriculture	34 739.37	30 649.81	30 649.81	30 042.41	30 042.41	–11.8	–11.8	–13.5	–13.5
LULUCF	–3 283.49	–25 979.98	–25 979.98	–23 428.71	–23 428.71	691.2	691.2	613.5	613.5
Waste	17 301.95	15 705.28	15 705.28	12 810.76	12 810.76	–9.2	–9.2	–26.0	–26.0
Other (specify)	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA
Total GHG emissions excluding LULUCF	**517 745.66**	**419 022.52**	**406 231.01**	**383 227.32**	**327 036.38**	**–19.1**	**–21.5**	**–26.0**	**–36.8**

Source: Italy's BR4 CTF table 6.

66. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the energy sector (excluding transport) and the IPPU sector, amounting to projected reductions of 49,175.83 kt CO_2 eq (21.4 per cent) and 45,098.43 kt CO_2 (33.7 per cent) between 1990 and 2020, respectively. The decreasing emissions in the energy sector are due mainly to emission reductions in the electricity subsector, which in turn are attributable to increases in efficiency and use of RES and a shift towards using low-carbon fuels. Under the WEM scenario, the continued decrease in IPPU emissions can be attributed to a decline in economic activity, structural change and an increase in efficiency. The pattern of projected emissions reported for 2030 under the same scenario remains the same, with a higher reduction expected for the IPPU sector owing to the expected impact of the EU F-gas regulation.

67. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 presented by sector remain the same. The most significant emission reductions are still expected to occur in the energy sector (excluding transport) and the IPPU sector, amounting to 53,737.39 kt CO_2 eq (23.4 per cent) and 48,439.96 kt CO_2 eq (36.2 per cent) between 1990 and 2020, respectively. The pattern of projected emissions reported for 2030 under the same scenario is significantly different, with more reductions (105,242.69 kt CO_2 eq (45.8 per cent)) expected in the energy sector owing to additional emission reductions in the energy industries subsector due to the planned phase-out of coal for electricity production by 2025, an increase in thermoelectric efficiency, an increase in the use of RES and the shift towards using low-carbon fuels. Emissions from the agriculture, LULUCF and waste sectors are unchanged compared with the WEM scenario owing to the absence of additional PaMs included in the WAM scenario.

68. Italy presented the WEM and WAM scenarios by gas for 2020 and 2030, as summarized in table 10.

Table 10
Summary of greenhouse gas emission projections for Italy presented by gas

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
		2020		*2030*		*1990–2020*		*1990–2030*	
Gas	*1990*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
CO_2	439 639.71	343 316.41	330 709.71	316 870.95	261 409.82	–21.9	–24.8	–27.9	–40.5
CH_4	48 262.93	41 754.39	41 671.71	38 245.98	37 975.31	–13.5	–13.7	–20.8	–21.3
N_2O	26 083.81	17 891.45	17 789.32	16 985.48	16 526.34	–31.4	–31.8	–34.9	–36.6
HFCs	444.00	14 074.90	14 074.90	9 182.22	9 182.22	3 070.0	3 070.0	1 968.1	1 968.1
PFCs	2 906.86	1 613.77	1 613.77	1 613.77	1 613.77	–44.5	–44.5	–44.5	–44.5
SF_6	408.35	343.18	343.18	301.08	301.08	–16.0	–16.0	–26.3	–26.3
NF_3	NA, NO	28.42	28.42	27.84	27.84	NA	NA	NA	NA

	GHG emissions and removals (kt CO_2 eq)					Change (%)			
		2020		2030		1990–2020		1990–2030	
Gas	1990	WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
Total GHG emissions without LULUCF	**517 745.66**	**419 022.52**	**406 231.01**	**383 227.32**	**327 036.38**	**–19.1**	**–21.5**	**–26.0**	**–36.8**

Source: Italy's BR4 CTF table 6.

69. For 2020, the most significant reductions are projected for CO_2 emissions: 96,323.30 kt CO_2 eq (21.9 per cent) between 1990 and 2020. The decreasing trend in CO_2 emissions is due mainly to the increase in the use of RES, the shift towards using low-carbon fuels and increased energy efficiency in buildings. Reductions in N_2O and CH_4 emissions stand at 8,192.36 kt CO_2 eq (31.4 per cent) and 6,508.54 kt CO_2 eq (13.5 per cent) between 1990 and 2020, respectively. The main reason for the reduction in N_2O emissions is the implementation of N_2O emission control in adipic and nitric acid production through the application of the most advanced technologies in the largest existing nitric acid production plants. The reduction in CH_4 emissions is attributable to the decrease in waste disposed to landfill as more recycling and energy recovery technologies are employed. Although a decrease in HFC emissions is expected for 2020 compared with the 2017 level (8.0 per cent), the projections show an upward trend for 1990–2020 due to the increase in emissions in historical years.

70. The pattern of emission reductions under the WEM scenario for 2030 by gas is slightly different. Between 1990 and 2030, emission reductions for CO_2, CH_4 and N_2O are projected to be 122,768.76 kt CO_2 eq (27.9 per cent), 10,016.95 kt CO_2 eq (20.8 percent) and 9,557.47 kt CO_2 eq (34.9 per cent), respectively. The emission reductions for CO_2 are more pronounced in 2020–2030 owing to projected PaMs, which include the phase-out of coal, an increased use of RES and efficient energy use in the industrial sector. Additional changes also result in higher reductions for CH_4 (3,508.41 kt CO_2 eq) owing to the expected increase in waste incineration for energy recovery and mechanical biological treatment, while reductions in N_2O emissions are projected to be lower (905.97 kt CO_2 eq) after 2020.

71. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 and 2030 presented by gas remain similar.

(d) Assessment of adherence to the reporting guidelines

72. The ERT assessed the information reported in the BR4 of Italy and identified issues relating to completeness and transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 11.

Table 11
Findings on greenhouse gas emission projections reported in the fourth biennial report of Italy

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 28 Issue type: completeness Assessment: encouragement	The Party did not report WOM projections in its BR4 but did explain (p.80) that the WOM scenario, calculated using the same methodology as for the WEM scenario, could not be included as in most cases data for back to 1990 related to PaMs are not available. This made it impossible to evaluate how national emissions would have evolved without measures. During the review, Italy provided historical and projected values under the WOM scenario for 2016, 2020, 2025 and 2030. Italy explained that the WOM scenario had not been projected using the TIMES model but had been assessed taking into account the impacts of measures as presented in chapter 4 of its BR4. The ERT reiterates the encouragement from the previous review report for Italy to report a WOM scenario, indicating any associated limitations, in its next BR.

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
2	Reporting requirement specified in paragraphs 30 and 46 Issue type: completeness Assessment: encouragement	The Party did not report sensitivity analysis results for any of the projections in its BR4. Italy indicated in its BR4 (p.79) that, owing to the processes under way, emission projections and PaMs are likely to be updated in 2020. During the review, Italy confirmed that the work on sensitivity analyses is ongoing and will be finalized later in 2020. The ERT encourages Italy to provide an updated sensitivity analysis in its next BR.
3	Reporting requirement specified in paragraph 32 Issue type: transparency Assessment: encouragement	The Party reported in its BR4 (p.79) that the base year for the projections is 2016, as the latest emissions inventory data submitted to the UNFCCC were for 2016, and the WEM scenario considers the PaMs implemented before 31 December 2016. According to the UNFCCC reporting guidelines on BRs, the starting point for projections should generally be the latest year for which inventory data are available. The ERT noted that 2017 inventory data are used in the other sections of the BR4. During the review, Italy explained that the projections in the BR4 are consistent with data submitted to the European Commission in March 2019, that emission data for 2017 had not yet been submitted or were about to be submitted, and that there was not enough time to prepare the projections. It also explained that only slight differences would occur in the projected emissions if 2017 were adopted as the base year and the starting level for the projected emissions were slightly lower. The ERT encourages Italy, in its next BR, to use as a starting point for the projections the latest year for which inventory data are available, or provide clear justification for using a different base year than the latest year for which inventory data are available.
4	Reporting requirement specified in paragraph 35 Issue type: completeness Assessment: encouragement	Italy did not report projections for indirect GHGs such as carbon monoxide, nitrogen oxides, non-methane volatile organic compounds and sulfur dioxide in its BR4. The ERT noted that projections for these emissions were available in the INECP (tables 25–26). During the review, the Party provided projections for the indirect GHG emissions and explained that projections of nitrogen oxides, sulfur dioxide, ammonia, non-methane volatile organic compounds and fine particulate matter consistent with the WEM scenario can be found in the latest informative inventory report (chapter 9), the annual communication of the national emissions inventory of transboundary substances within the framework of the Convention on Long-range Transboundary Air Pollution and other pertinent documents. It also provided a relevant weblink (http://www.sinanet.isprambiente.it/it/sia-ispra/serie-storiche-emissioni/informative-inventory-report/view (in Italian)). The ERT reiterates the encouragement from the previous review report for Italy, in its next BR, to provide information on indirect GHGs such as carbon monoxide, nitrogen oxides, non-methane volatile organic compounds and sulfur dioxide, and/or to provide clear references to available documents containing projections of these gases.
5	Reporting requirement specified in paragraph 42 Issue type: transparency Assessment: encouragement	The Party provided some information in its BR4 on the models and approaches used to develop projections for the energy sector. However, the ERT noted that the Party provided less detail for non-energy sectors. During the review, Italy explained that models and approaches used for all non-energy sectors are consistent with the methods used for the GHG inventories and the details are available in its 2017 NIR. The Party provided a weblink to the report (http://www.isprambiente.gov.it/it/pubblicazioni/rapporti/italian-greenhouse-gas-inventory-1990-2015.-national-inventory-report-2017 (in Italian)). The ERT encourages Italy to provide, in its next BR, a clear and transparent summary of the models and approaches used to develop projections for non-energy sectors and to include references to external documents, as applicable.

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
7	Reporting requirement specified in paragraph 47 Issue type: transparency Assessment: encouragement	The Party provided limited information on historical data on the key variables and assumptions used for the projections in CTF table 5 (as required by para. 47 of the UNFCCC reporting guidelines on NCs) – data for the years before 2010 were not included. During the review, Italy explained that since TIMES model results had been calibrated with data from 2010 to 2016, the only historical data relevant to the projections had been reported in CTF table 5. The ERT encourages the Party to increase the transparency of its reporting by providing further historical data on key variables and assumptions used for the projections in CTF table 5, or to clearly define in the BR or footnotes to the table why data for some historical years are not included.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs, as per para. 11 of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on NCs and on BRs.

D. Provision of financial, technological and capacity-building support to developing country Parties

1. Technical assessment of the reported information

(a) Approach and methodologies used to track support provided to non-Annex I Parties

73. In its BR4, Italy reported information on its provision of financial, technological and capacity-building support to non-Annex I Parties.

74. Italy provided details on how the support it has provided is "new and additional", including how it has determined resources as being "new and additional". Italy considers as "new and additional" the climate finance committed or disbursed in 2017–2018, in particular budget increases for development cooperation dedicated to climate change, revenue from auctioning GHG emission allowances and financial contributions to the Green Climate Fund.

75. Italy reported the support that it has provided to non-Annex I Parties, distinguishing between support for mitigation and adaptation activities and recognizing the capacity-building elements of such support. It explained how it tracks finance for adaptation and mitigation using a combination of the Rio markers and the aid to environment markers for bilateral and multilateral figures used to report to the OECD Development Assistance Committee. The approach considers committed funds for bilateral flows and disbursed funds for multilateral flows so as to avoid double counting across years. Climate-specific and core (general) amounts are treated as mutually exclusive.

76. The BR4 includes information on the national approach to tracking the provision of support, indicators, delivery mechanisms used and allocation channels tracked. Italy included information on how it has refined its approach to tracking climate support and methodologies since its BR3. The methodology and tracking activities have been established and are implemented by IMELS and the Ministry of Foreign Affairs and International Cooperation. The only methodological adjustment since the previous biennium is the inclusion of both bilateral and multi-bilateral flows in public financial support provided through bilateral channels. The multi-bilateral flows include finance that flows through multilateral organizations but is meant for a specific country or for multi-country projects, in line with the definition provided by the OECD reporting directives. Italy's public financial resources for helping developing countries to develop and implement actions in the field of climate change in 2017–2018 were provided by IMELS (funds provided for by law 120/2002), the Ministry of Foreign Affairs and International Cooperation (funds for development cooperation) and the Ministry of Economy of Finance (funds provided to multilateral institutions for environmental activities targeted at climate change). Funds were also raised by auctioning allocated GHG emission allowances (in accordance with EU directive 2003/87/EC). Private financial resources for climate activities are directly mobilized through public financial interventions. Tracked sources include public financial support provided

through bilateral channels and international organizations and calls for tenders for non-governmental organizations and project developers.

77. Italy described the methodology and underlying assumptions used for collecting and reporting information on financial support, including underlying assumptions, guidelines, eligibility criteria and indicators (see para. 75 above).

78. Italy explained that, since 2017, public financial support provided through bilateral channels has included both bilateral and multi-bilateral finance (see para. 76 above). To identify the climate-specific component (using the Rio markers), Italy is classifying projects as significant (where at least 40 per cent of the project value is considered climate related) or principal (where 100 per cent of the project value is climate related). For multilateral channels, only entirely disbursed contributions (if they are reflected in official documents that evidence the financial transaction) are considered, and the type of support depends on the nature and purpose of the fund (most are categorized as cross-cutting support).

79. Italy reported on the private finance mobilized through public interventions in developing countries in 2015–2017. Data for 2018 were not available and will be reported in the Party's next NC. Italy indicated that the methodology used for tracking private flows was developed by the OECD Research Collaborative on Tracking Private Climate Finance and approved by the OECD Development Assistance Committee, and that it took measures to avoid double counting.

(b) Financial resources

80. Italy reported information on its provision of financial support to non-Annex I Parties as required under the Convention, including on financial support provided, committed and pledged, allocation channels and annual contributions.

81. Italy described how its resources address the adaptation and mitigation needs of non-Annex I Parties. It also described how those resources assist non-Annex I Parties in mitigating GHG emissions and adapting to the adverse effects of climate change, and contribute to technology development and transfer and capacity-building related to mitigation and adaptation. However, Italy did not provide information on how its resources effectively address the adaptation and mitigation needs of non-Annex I Parties, especially within the framework of bilateral agreements. It provided information on the general conditions for the approval of activities and projects, namely the recipient country's ownership of the initiative, the conclusion of a mutual agreement with the recipient country at every stage of the initiative's design and approval, and attainment of the objectives contained in the recipient country's nationally determined contribution. The implementation of the joint committees is referred to in the description of some development cooperation agreements (e.g. Democratic Republic of the Congo, Mali, Sudan, Viet Nam).

82. With regard to the most recent financial contributions aimed at enhancing the implementation of the Convention by developing countries, Italy reported that its climate finance has been allocated on the basis of priority areas, strategies and programmes, such as pursuing the objectives of the Paris Agreement and the 2030 Sustainable Development Agenda, as provided for by law 125/2014 reforming Italian development cooperation, and decree 30/2013 defining the criteria for the allocation of the proceeds from auctioning GHG emission allowances. Table 12 summarizes the information reported by Italy on its provision of financial support.

Table 12
Summary of information on provision of financial support by Italy in 2017–2018
(Millions of United States dollars)

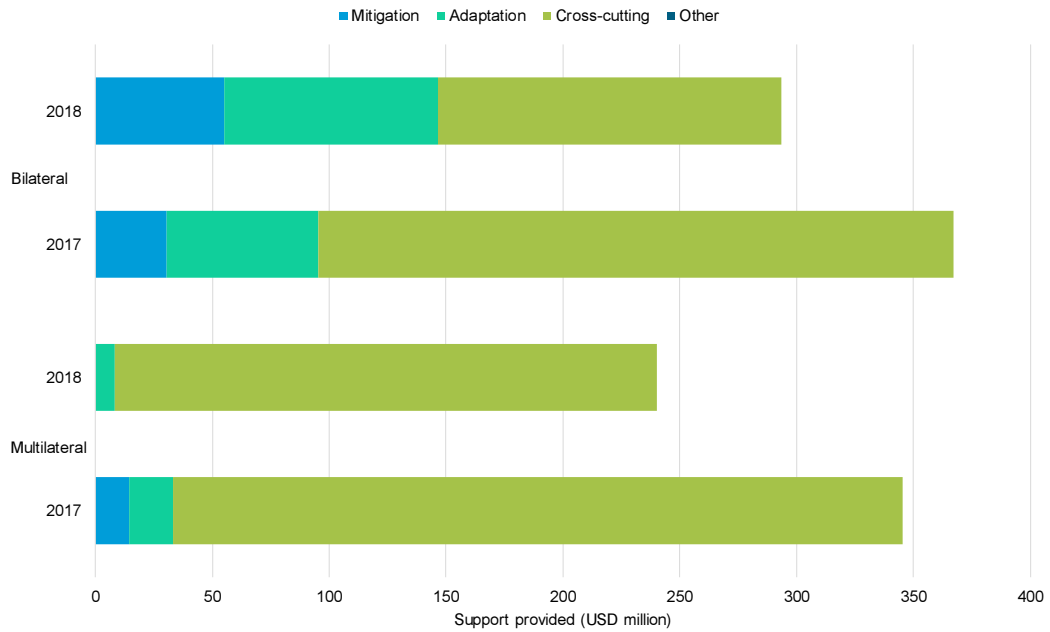
	Year of disbursement	
Allocation channel of public financial support	*2017*	*2018*
Climate-specific contributions through multilateral channels, including:	345.29	240.24
Global Environment Facility	37.37	13.67
Adaptation Fund	5.64	8.26

Allocation channel of public financial support	*Year of disbursement* 2017	2018
Green Climate Fund	112.74	59.03
Trust Fund for Supplementary Activities	–	0.77
Other multinational climate change funds	14.46	9.74
Financial institutions, including regional development banks	102.38	119.91
United Nations bodies	72.71	28.85
Climate-specific contributions through bilateral, regional and other channels	367.02	293.36

Sources: Italy's BR4 CTF tables and Query Wizard for International Development Statistics, available at http://stats.oecd.org/qwids.

83. Italy reported on its climate-specific public financial support, totalling USD 712.31 million in 2017 and USD 533.60 million in 2018. Although Italy's allocation of financial resources is fluctuating year on year, the Party has increased its contributions by 70.7 per cent since its BR3. From 2016 to 2017, Italy increased its climate-specific public financial support by 144.9 per cent and reduced it by 25.1 per cent from 2017 to 2018. For 2020–2023, Italy has pledged EUR 300 million for the replenishment of the Green Climate Fund (versus EUR 150 million for 2017–2018) and EUR 92 million for the seventh replenishment of the Global Environment Facility (2018–2022). During the reporting period, Italy focused on Africa and the most vulnerable countries, such as small island developing States. Italy reported its bilateral support to Annex I Parties in 2017 and 2018 in CTF table 7(b). Information on financial support from the public sector provided through multilateral and bilateral channels and the allocation of that support by target area is presented in figure 3 and table 13.

Figure 3
Provision of financial support by Italy in 2017–2018



Source: Italy's BR4 CTF tables 7, 7(a) and 7(b).

Table 13
Summary of information on channels of financial support used in 2017–2018 by Italy
(Millions of United States dollars)

	Year of disbursement				*Share (%)*	
Allocation channel of public financial support	*2017*	*2018*	*Difference*	*Change (%)*	*2017*	*2018*
Detailed information by type of channel						
Multilateral channels						
Mitigation	14.38	–	–	–	4.2	–
Adaptation	18.97	8.26	–10.70	–56.4	5.5	3.4
Cross-cutting	311.94	231.98	–79.96	–25.6	90.3	96.6
Other	–	–	–	–	–	–
Total multilateral	**345.29**	**240.24**	**–105.05**	**–30.4**	**100.0**	**100.0**
Bilateral channels						
Mitigation	30.68	55.02	24.34	79.3	8.4	18.8
Adaptation	64.65	91.55	26.91	41.6	17.6	31.2
Cross-cutting	271.69	146.79	–124.90	–46.0	74.0	50.0
Other	–	–	–	–	–	–
Total bilateral	**367.02**	**293.36**	**–73.66**	**–20.1**	**100.0**	**100.0**
Total multilateral and bilateral	**712.31**	**533.61**	**–178.70**	**–25.1**	**100.0**	**100.0**

Source: Italy's BR4 CTF tables 7, 7(a) and 7(b).

84. The BR4 includes detailed information on the financial support provided through multilateral, bilateral and regional channels in 2017 and 2018. More specifically, Italy contributed through multilateral channels, as reported in the BR4 and in CTF table 7(a), USD 345.29 million and USD 240.24 million for 2017 and 2018, respectively. The contributions were made to specialized multilateral climate change funds, such as the Global Environment Facility, the Adaptation Fund, the Green Climate Fund, the UNFCCC Trust Fund for Supplementary Activities, and specialized United Nations bodies. Multilateral funding was provided through multilateral financial institutions, including the World Bank, the International Finance Corporation, the African Development Bank, the Asian Development Bank, the Inter-American Development Bank and others (Asian Infrastructure Investment Bank, Economic Resilience Initiative of the European Investment Bank, Council of Europe Development Bank, International Atomic Energy Agency Technical Cooperation Fund, International Renewable Energy Agency).

85. The BR4 and CTF table 7(b) also include detailed information on the total financial support provided though bilateral (USD 367.02 million), regional (USD 293.36 million) and other channels in 2017 and 2018. Most climate-specific support through bilateral channels is provided under MOUs with individual recipient countries or groups of countries. In this respect, in the biennium under review, IMELS concluded 21 new bilateral agreements, in addition to the 31 agreements signed in the previous biennium, with a focus on sub-Saharan countries. Major regional channels include the African Development Bank, the International Finance Corporation and the Inter-American Development Bank.

86. The BR4 provides information on the types of support provided. In terms of the focus of public financial support, as reported in CTF table 7 for 2017, the shares of the total public financial support allocated for mitigation, adaptation and cross-cutting projects were 6.4, 11.7 and 81.9 per cent, respectively. In addition, 48.5 per cent of the total public financial support was allocated through multilateral channels and 51.5 per cent through bilateral, regional and other channels. In 2018, the shares of total public financial support allocated for adaptation and cross-cutting projects were 3.4 and 96.6 per cent, respectively. Furthermore, 45.0 per cent of the total public financial support was allocated through multilateral channels and 55.0 per cent through bilateral, regional and other channels.

87. The ERT noted that in 2017 most financial contributions made through multilateral channels were allocated to multiple sectors, being cross-cutting or non-sector-specific projects, as reported in CTF table 7(a). The corresponding allocations for 2018 were made to multiple sectors as cross-cutting projects. In 2017, most financial contributions made through bilateral and regional channels were allocated to energy, transport, agriculture, water and sanitation and other sectors (including emergency response, disaster risk reduction, environment, health, food security, government and civil society, finance and tourism), as reported in CTF table 7(b). The corresponding allocations for 2018 were directed mostly to agriculture, water and sanitation, energy and other sectors (including health, education, environment, emergency response), as reported in CTF table 7(b).

88. CTF tables 7(a) and 7(b) include information on the types of financial instrument used for providing assistance to developing countries, which include grants, equity and concessional loans. The ERT noted that the grants provided in 2017 and 2018 accounted for most of the total public financial support.

89. Italy reported on the mobilization of private finance for 2017 (USD 26.49 million) and explained that data for 2018 were not available at the time of preparing the BR4 but would be included in its next BR. Italy clarified that private finance is mobilized through grants, direct investments in companies and project finance for activities relevant to climate change. It reported on how it uses public funds to promote private sector financial support for developing countries, which it sees as pivotal in effectively increasing mitigation and adaptation efforts in such countries, and gives special consideration to private sector input when negotiating bilateral agreements with non-Annex I Parties. Italy explained its general approach to involving the private sector in supporting developing countries to increase their mitigation and adaptation efforts: IMELS investigates the potential contribution – which lies mainly in the provision of core technologies and expertise – of the private sector and issues public calls for companies interested in contributing to come forward.

90. Italy explained its approach to reporting on private financial flows leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties. Accounting for the private finance mobilized through public interventions in developing countries is done on the basis of the results from a pilot study that aimed to establish standards for a reporting system. The methodology for tracking and monitoring resource flows was developed by the Research Collaborative on Tracking Private Climate Finance (led by the OECD) and agreed on by the OECD Development Assistance Committee. Italy added that the policy of involving the private sector is laid down in law 125/2014 on development cooperation governance and implementation, which includes a dedicated mechanism for innovative public–private partnerships. Italy also reported on private finance related to climate change that falls outside the scope of the OECD Development Assistance Committee tracking methodology.

(c) Technology development and transfer

91. Italy provided information on steps, measures and activities related to technology transfer, access and deployment benefiting developing countries, including information on activities undertaken by the public and private sectors. Italy provided examples of support provided for the deployment and enhancement of the endogenous capacities and technologies of non-Annex I Parties, which include the installation and operation of plants.

92. The ERT took note of the information provided in CTF table 8 on recipient countries, target areas, measures and focus sectors of technology transfer programmes. Italy described the status of its actions as planned or implemented, most being planned and targeting mitigation in the energy sector. Other sectors being addressed by technology transfer are water and sanitation, agriculture, forestry, biodiversity, environmental research and disaster risk reduction. The target area of most of the actions is mitigation, followed by adaptation. Only a few target both mitigation and adaptation. The recipients are countries in Africa, Asia and Latin America, as well as a number of small island developing States[12].

[12] There are reported projects in Antigua and Barbuda, Bangladesh, Belize, Bosnia and Herzegovina,

93. The ERT noted that Italy reported on its measures and activities, including on activities implemented or planned since its NC7 and BR3 and on measures taken to promote, facilitate and finance the transfer and deployment of climate-friendly technologies. According to the BR4, there was no information to report on success and failure stories related to technology transfer activities in 2017 and 2018. During the review, the Party clarified that all projects were completed as expected and there had been no failures to achieve the expected results. Among the measures and activities implemented or planned in the reporting period, Italy referred to projects involving off-grid electrification through photovoltaic systems, mini-hydropower, wind and biomass; airborne remote sensing light detection and ranging forecasting systems; renewable energies and appropriate technologies for accessing drinking water in rural areas; constructing kindergartens; improving climate data collection, management and forecasting, including early warning systems; energy-efficient public lighting; supplying electric school buses; and solar panels for housing, schools and hospitals.

(d) Capacity-building

94. In its BR4 and CTF table 9, Italy supplied information on how it has provided capacity-building support for mitigation, adaptation and technology that responds to the existing and emerging needs identified by non-Annex I Parties. Italy described individual measures and activities related to capacity-building support in textual and tabular format, and stated that capacity-building is an important element of its support for developing countries. Examples include a cooperation programme with 11 of the 15 Caribbean Community countries (Antigua and Barbuda, Bahamas, Belize, Dominica, Grenada, Guyana, Haiti, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Suriname) for implementing projects on weather alert systems, energy efficiency and the promotion and use of renewable energy, sustainable water management and sustainable transport; and a 10-year cooperation programme with Egypt, Morocco and Tunisia focused on promoting renewable energy, establishing financial mechanisms for using solar heating and providing multilevel governance support for more efficient use of water resources. Italy reported on the implementation of several projects under an MOU signed with the Democratic Republic of the Congo, such as the Bukavu Green Community project, which involves the training of 50 engineers, and an initiative to establish sustainable energy services for rural parts of the country, which provides training for 80 entrepreneurs and 15 public officials in renewable energy and rural electrification.

95. Some of the capacity-building activities are also directly linked to reporting under the Convention and the Paris Agreement, such as the agreement between ISPRA and the UNEP DTU Partnership signed in 2018 for capacity-building activities in 11 beneficiary countries (Argentina, Belize, Botswana, China, Cuba, Ethiopia, Iran (Islamic Republic of), Maldives, Sudan, Tunisia and Viet Nam). ISPRA will share experience in accounting GHG emissions by carrying out training initiatives for officers and key stakeholders of beneficiary countries.

96. Italy reported that it has supported climate-related capacity development activities relating to adaptation, mitigation, climate financing and other sectors. An example of such support is the Partnership with Pacific small island developing States established in 2007, which aims, inter alia, to strengthen national capacities for creating national energy policies and strategies and establishing energy markets, providing specialized training to human resources and working closely with communities for their sustainable development. The Partnership also supports adaptation activities related to disaster risk reduction, which will decrease these countries' vulnerability to the impacts of severe weather events and increase their capacity to adapt to climate change. Italy also reported on how it has responded to the existing and emerging capacity-building needs of non-Annex I Parties by following the principles of national ownership, stakeholder participation, country-driven demand,

Burkina Faso, Cameroon, Democratic Republic of the Congo, Ecuador, Ethiopia, Ghana, Haiti, India, Indonesia, Kenya, Kiribati, Lebanon, Liberia, Mali, Montenegro, Myanmar, Nigeria, Pakistan, Papua New Guinea, Saint Kitts and Nevis, Senegal, Serbia, Somalia, South Sudan, Uganda, United Republic of Tanzania.

cooperation between donors and across programmes, impact assessment and monitoring, and the Party described the mechanisms that govern the MOUs signed with non-Annex I Parties.

2. Assessment of adherence to the reporting guidelines

97. The ERT assessed the information reported in the BR4 of Italy and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 14.

Table 14
Findings on provision of support to developing country Parties from the review of the fourth biennial report of Italy

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 16 Issue type: transparency Assessment: recommendation	The Party did not report transparent information in its BR4 on how it seeks to ensure that the resources that it provides effectively address the needs of non-Annex I Parties with regard to climate change adaptation and mitigation, although some aspects of its system for identifying and effectively addressing the needs of these Parties were covered, with reference to specific projects. During the review, Italy explained that joint committees were established under the MOUs signed with developing countries, and provided more information on these committees' tasks and on the conditions for approving projects under the MOUs, demonstrating that Italy's system satisfies the reporting requirement. The ERT noted that various references to such committees were given in Italy's BR4, but no clear description was provided. The Party further explained during the review that its bilateral cooperation was tailored to the priorities and objectives of the developing countries. The ERT recommends that Italy describe, to the extent possible, in its next BR how it seeks to ensure that the resources that it provides effectively address the needs of non-Annex I Parties with regard to climate change adaptation and mitigation, for example by providing better structured information in its BR.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

III. Conclusions and recommendations

98. The ERT conducted a technical review of the information reported in the BR4 and CTF tables of Italy in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information mostly adheres to the UNFCCC reporting guidelines on BRs and provides an overview of emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; the progress of Italy towards achieving its target; and the Party's provision of support to developing country Parties.

99. Italy's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 17.4 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 20.4 per cent below its 1990 level, in 2017. Emission decreases were driven by the restructuring of the economy in the period under review, combined with implemented PaMs such as improving the efficiency of energy supply and use, increasing the use of renewable energy, shifting to low-carbon fuels in electricity and heat production, and technological improvements in industry. Those factors outweighed increases in emissions from rising energy consumption in the residential, commercial and transport sectors and from using HFCs in refrigeration and air-conditioning systems.

100. Under the Convention Italy committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and CO_2, CH_4, N_2O, HFCs, PFCs and SF_6, expressed using global warming potential values from the AR4.

Emissions and removals from the LULUCF sector are not included. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms for compliance purposes up to an established limit and subject to a number of restrictions on the origin and the type of project. The ERT noted that Italy indicated it does not plan to use market-based mechanisms.

101. Under the ESD Italy has a target of reducing its emissions by 13 per cent below the 2005 level by 2020. The 2015–2020 linear progression in Italy's AEAs (its national emission target under the ESD) is 304,232.94–291,006.10 kt CO_2 eq.

102. In 2018, Italy's ESD emissions were 5.8 per cent (17,129.10 kt CO_2 eq) below the AEA under the ESD. The Party has a cumulative surplus of 150,694.03 kt CO_2 eq with respect to its AEAs between 2013 and 2018. In 2013–2018, historical emissions for Italy were systematically below annual ESD targets for each year of the period. Italy is therefore considered to be on track to meet its target under the ESD.

103. The GHG emission projections provided by Italy in its BR4 correspond to the WEM and WAM scenario. Under these scenarios, emissions are projected to be 19.1 and 21.5 per cent below the 1990 level by 2020, respectively. According to the projections under the WEM scenario, emissions from ESD sectors in 2020 are estimated to reach 263,128.23 kt CO_2 eq. The projected level of emissions under the WEM scenario is 7.9 per cent below the AEAs for 2020. The ERT noted that this suggests that Italy expects to meet its target under the WEM scenario.

104. Italy's main policy framework relating to energy and climate change is the EU 2020 climate and energy package. The EU ETS is one of the most effective cross-sectoral policies and is operationalized by measures at the national level, such as the white certificates scheme promoting energy efficiency, the National Action Plan for Renewable Energy 2010 and other incentives promoting wider use of renewable energy. ESD sectors benefit from measures such as minimum mandatory standards for new and existing buildings; numerous regulations in the transport sector (infrastructural measures, emission standards for new cars, mandatory use of biofuels); reduction of N_2O emissions from nitric acid production; rationalization of nitrogen fertilizer use; and separation of urban waste for collection. The most significant mitigation impacts of individual measures are expected to occur in the energy sector from the wider use of renewables promoted by green certificates and feed-in tariffs (8,600 kt CO_2 eq in 2020), improved energy efficiency in buildings (7,190 kt CO_2 eq in 2020) and the white certificates (5,810 kt CO_2 eq in 2020). The INECP, issued in January 2020 and provided by Italy during the review, and the Party's long-term strategy for 2050, which is under development, are reshaping the national set of PaMs to meet the more stringent post-2020 targets of the Party (of emissions 33 per cent below the 2005 level by 2030 for ESD sectors).

105. Italy continues to provide climate financing to developing countries in line with its climate finance programmes such as law 125/2014 reforming Italian development cooperation, and decree 30/2013 defining the criteria for the allocation of the proceeds from auctioning GHG emission allowances. It has increased its contributions by 70.7 per cent since the BR3; its public financial support in 2017 and 2018 totalled USD 712.31 million and USD 533.60 million per year, respectively. For those years, Italy provided more support for cross-cutting and adaptation than for mitigation projects. The biggest share of financial support went to cross-cutting projects, followed by projects in the energy, agriculture, water and sanitation and other sectors.

106. Italy provided information on support for technology development and transfer and capacity-building. In the biennium under review, Italy increased its bilateral cooperation on technology transfer with non-Annex I Parties, concluding 21 new bilateral agreements, in addition to the 31 agreements signed in the previous biennium. On the basis of beneficiary country needs, the projects, in addition to providing support for mitigation and adaptation actions, integrate multiple sectors, such as food security, biodiversity conservation, water supply, low-carbon energy, off-grid power, reforestation, disaster risk management, sustainable marketing and supply chains. Italy supplied information on how it provided capacity-building support for addressing mitigation and adaptation to climate change, transferring and promoting low-carbon technologies that meet existing and emerging needs identified by non-Annex I Parties, and undertaking studies and training to aid decision-

making processes and help developing country Parties meet their reporting needs under the Convention and the Paris Agreement.

107. In the course of the review, the ERT formulated the following recommendations for Italy to improve its adherence to the UNFCCC reporting guidelines on BRs in its next BR, namely to improve the transparency of its reporting by:

(a) Including information on the possible scale of contributions from international market-based mechanisms towards the achievement of its target under the Convention in CTF table 2(e)I, consistently with that reported in the textual part of the BR, or explain why such information cannot be provided (see issue 1 in table 3);

(b) Including transparent information on PaMs, clearly identifying the status of each measure in accordance with the ongoing reshaping of climate and energy policies and ensuring consistent reporting between the BR and CTF table 3 for all gases (including F-gases) and sectors (see issue 1 in table 5);

(c) Including missing estimates of the impacts of its mitigation actions in CTF table 3, or providing adequate justification for reporting "NE" in the textual part of the BR, explaining why such impacts could not be estimated in view of its national circumstances in accordance with information provided during the review, and clarifying all reporting of "IE", as it did during the review (see issue 4 in table 5);

(d) Providing information in CTF table 4 on its progress towards achieving its quantified economy-wide emission reduction target, or explaining why such information was not provided, potentially using notation keys and footnotes to explain the contributions of the LULUCF sector and market-based mechanisms towards the target (see issue 1 in table 7);

(e) Providing more detailed information, to the extent possible, on how it seeks to ensure that the financial resources that it provides effectively address the needs of non-Annex I Parties with regard to climate change adaptation and mitigation (see issue 1 in table 14).

Annex

Documents and information used during the review

A. Reference documents

2019 GHG inventory submission of Italy. Available at https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2019.

BR3 of Italy. Available at https://unfccc.int/sites/default/files/resource/italy-br3-1-br3_2017_italy.pdf.

BR4 of Italy. Available at https://unfccc.int/sites/default/files/resource/BR4_2019%20Italy.pdf.

BR4 CTF tables of Italy. Available at https://unfccc.int/documents/208354.

Common tabular format for "UNFCCC biennial reporting guidelines for developed country Parties". Annex to decision 19/CP.18. Available at https://unfccc.int/resource/docs/2012/cop18/eng/08a03.pdf.

European Green Deal. Available at https://ec.europa.eu/info/files/communication-european-green-deal_en.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories". Annex to decision 24/CP.19. Available at http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications". FCCC/CP/1999/7. Available at http://unfccc.int/resource/docs/cop5/07.pdf.

"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Annex to decision 13/CP.20. Available at http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf.

NR7 of Italy. Available at https://unfccc.int/sites/default/files/resource/258913076_Italy-NC7-2-Italy%20Seventh%20National%20Communication%20Final.pdf.

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Report on the technical review of the third biennial report of Italy. FCCC/TRR.3/ITA. Available at https://unfccc.int/sites/default/files/resource/trr.3_ITA.pdf.

Report on the technical review of the second biennial report of Italy. FCCC/TRR.2/ITA. Available https://unfccc.int/sites/default/files/resource/docs/2016/trr/ita.pdf.

"UNFCCC biennial reporting guidelines for developed country Parties". FCCC/SBSTA/2014/INF.6. Annex I to decision 2/CP.17. Available at http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf.

B. Additional information provided by the Party

Responses to questions during the review were received from Vanessa Leonardi (IMELS), including additional material. The following documents[1] were provided by Italy:

[1] Reproduced as received from the Party.

2017, Italy's Fourth Progress Report under Directive 2009/28/EC.

EEA Report No 15/2019. Trends and projections in Europe 2019. Tracking progress towards Europe's climate and energy targets. Available at https://www.eea.europa.eu/publications/trends-and-projections-in-europe-1.

ISPRA, 2018. National Greenhouse Gas Inventory System in Italy. Year 2018. http://www.sinanet.isprambiente.it/it/sia-ispra/serie-storiche-emissioni.

Italy, 2019. Integrated National Energy and Climate Plan. Available at https://www.mise.gov.it/images/stories/documenti/it_final_necp_main_en.pdf.