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Report of the technical review of the second biennial report of Italy

According to decision 2/CP.17, developed country Parties are requested to submit their second biennial reports by 1 January 2016, that is, two years after the due date for submission of a full national communication. This report presents the results of the technical review of the second 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".

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Contents

I. Introduction and summary

A. Introduction

1. This report covers the centralized technical review of the second biennial report (BR2)[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). In accordance with the same decision, a draft version of this report was communicated to the Government of Italy, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

2. The review took place from 14 to 19 March 2016 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Tom Dauwe (Belgium), Mr. Raúl Jorge Garrido Vázquez (Cuba), Ms. Patricia Grobben (Belgium), Mr. Bernard Hyde (Ireland), Mr. Mwangi James Kinyanjui (Kenya), Mr. Giorgi Machavariani (Georgia), Mr. Naoki Matsuo (Japan), Mr. Mark Molnar (Hungary), Mr. Marius Ţăranu (Republic of Moldova) and Mr. Shengmin Yu (China). Ms. Grobben and Mr. Ţăranu were the lead reviewers. The review was coordinated by Ms. Sylvie Marchand and Mr. Bernd Hackmann (UNFCCC secretariat).

B. Summary

3. The expert review team (ERT) conducted a technical review of the information reported in the BR2 of Italy in accordance with the "UNFCCC biennial reporting guidelines for developed country Parties" (hereinafter referred to as the UNFCCC reporting guidelines on BRs). During the review, Italy provided the following additional relevant information on: changes in its institutional arrangements related to the progress towards its economy-wide emission reduction target; the economic and social impacts of its response measures; the assessment of the impact of its policies and measures (PaMs), including the consideration of PaMs in its projections; historical and projected emissions both under the European Union Emissions Trading System (EU ETS) and from sectors not covered by the EU ETS, including detailed energy-related data; the Party's definition of the new and additional financial resources provided to Parties not included in Annex I to the Convention (non-Annex I Parties); a description of the national approach for tracking and reporting the provisions of financial, technological and capacity-building support; and provided and pledged financial support.

1. Timeliness

4. The BR2 was submitted on 23 December 2015, before the deadline of 1 January 2016 mandated by decision 2/CP.17. The common tabular format (CTF) tables were also submitted on 23 December 2015.

[1] The biennial report submission comprises the text of the report and the common tabular format (CTF) tables. Both the text and the CTF tables are subject to the technical review.

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

5. Issues and gaps related to the reported information identified by the ERT are presented in table 1 below. The information reported by Italy in its BR2 is mostly in adherence with the UNFCCC reporting guidelines on BRs as per decision 2/CP.17.

Table 1
Summary of completeness and transparency issues related to mandatory reported information in the second biennial report of Italy

Chapter of the biennial report	*Completeness*	*Transparency*	*Paragraphs with recommendations*
Greenhouse gas emissions and trends	Complete	Transparent	NA
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Transparent	NA
Progress in achievement of targets	Mostly complete	Mostly transparent	20, 24, 47
Provision of support to developing country Parties	Mostly complete	Mostly transparent	75, 82, 87, 101

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in chapter III.
Abbreviation: NA = not applicable.

II. Technical review of the reported information

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

6. Italy has provided a summary of information on greenhouse gas (GHG) emission trends for the period 1990–2013 in its BR2 and CTF tables 1(a)–(d). The BR2 makes reference to the national inventory arrangements, which are explained in more detail in the national inventory report included in Italy's 2015 annual inventory submission (in chapter 1.2). The national inventory arrangements were established in accordance with the reporting requirements related to national inventory arrangements contained in the "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" that are required by paragraph 3 of the UNFCCC reporting guidelines on BRs. Further, Italy provided information on changes in the national inventory arrangements since its first biennial report (BR1).

7. The BR2 and CTF tables 1(a)–(d) include all of the information required by the UNFCCC reporting guidelines on BRs. The information reported in the BR2 on emission trends is consistent with that reported in the 2015 annual inventory submission of Italy.

8. Total GHG emissions[2] excluding emissions and removals from land use, land-use change and forestry (LULUCF) decreased by 16.1 per cent between 1990 and 2013,

[2] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of carbon dioxide equivalent excluding land use, land-use change and forestry and

whereas total GHG emissions including net emissions or removals from LULUCF decreased by 21.8 per cent over the same period. The decrease in the total GHG emissions can be attributed mainly to carbon dioxide (CO_2) emissions, which decreased by 17.4 per cent (excluding LULUCF) between 1990 and 2013. Over the same period, emissions of methane (CH_4) decreased by 18.3 per cent, while emissions of nitrous oxide (N_2O) decreased by 29.6 per cent. The combined fluorinated gases, such as perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3), increased by 401 per cent over the same period; the related emission trends were driven mainly by emissions of HFC-143a, HFC-125 and HFC-134a (use of ozone-depleting substance substitutes), but the share of these emissions remained very small.

9. The ERT noted that, during the period 1990–2013, Italy's gross domestic product (GDP) per capita increased by 9.9 per cent, while GHG emissions per GDP and GHG emissions per capita decreased by 28.1 and 21.0 per cent, respectively. Table 2 below illustrates the emission trends by sector and some of the economic indicators relevant to GHG emissions for Italy.

10. Italy's GDP grew steadily during the period 1990–2008 (1.3 per cent annually), before it was affected by the global economic crisis in 2008. During the period 2008–2013, the economy entered a recession phase (i.e. a 1.6 per cent decrease in GDP per annum); this economic downturn was one of the main drivers of the reductions in energy consumption and related CO_2 emissions (excluding LULUCF). The ERT noted that total primary energy supply (TPES) declined by 2.5 per cent annually during the period 2008–2013, resulting in a 0.9 per cent annual energy efficiency improvement. The ERT also noted that improvements in energy efficiency reached an annual rate of 0.3 per cent during the period 1990–2008.

11. Further, the ERT noted that, during the same period, CO_2 emissions declined by 5.1 per cent annually, and decarbonization occurred at a rate of 2.6 per cent per annum, whereas the same decarbonization occurred at a rate of 0.5 per cent during the period 1990–2008. The ERT also noted that, during the recession period starting from 2008, the economic downturn, combined with achievements in both energy efficiency improvement and decarbonization, contributed to the 26.6 per cent reduction in CO_2 emissions below the 2005 level in 2013; 2005 is the year in which emissions peaked according to Italy's CO_2 emission trend. Further details are provided in the context of projections in chapter II.C (see paras. 46–70 below).

Table 2

Greenhouse gas emissions by sector and some indicators relevant to greenhouse gas emissions for Italy for the period 1990–2013

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share by sector (%)*	
Sector	*1990*	*2000*	*2010*	*2012*	*2013*	*1990–2013*	*2012–2013*	*1990*	*2013*
1. Energy	421 288.49	453 535.52	419 574.53	384 875.29	357 386.84	–15.2	–7.1	80.9	81.7
A1. Energy industries	138 860.43	152 971.48	134 446.38	127 738.13	108 492.79	–21.9	–15.1	26.6	24.8

indirect emissions, unless otherwise specified. Values in this paragraph are calculated based on the 2015 inventory submission.

	GHG emissions (kt CO_2 eq)					Change (%)		Share by sector (%)	
Sector	*1990*	*2000*	*2010*	*2012*	*2013*	*1990–2013*	*2012–2013*	*1990*	*2013*
A2. Manufacturing industries and construction	86 174.99	83 633.65	61 685.57	56 588.51	49 978.17	–42.0	–11.7	16.5	11.4
A3. Transport	103 241.48	123 655.32	119 560.29	106 044.07	103 434.15	0.2	–2.5	19.8	23.7
A4.–A5. Other	80 116.12	82 465.02	95 071.15	85 945.78	86 999.59	8.6	1.2	15.4	19.9
B. Fugitive emissions from fuels	12 895.47	10 810.06	8 811.14	8 558.81	8 482.15	–34.2	–0.9	2.5	1.9
C. CO_2 transport and storage	NO	NO	NO	NO	NO	–	–	–	–
2. IPPU	40 313.03	38 459.13	34 558.65	31 605.62	30 593.85	–24.1	–3.2	7.7	7.0
3. Agriculture	36 197.40	35 624.79	30 959.49	31 914.37	30 789.74	–14.9	–3.5	6.9	7.0
4. LULUCF	–5 439.56	–18 301.92	–34 205.89	–20 798.67	–34 081.57	526.6	63.9	–	–
5. Waste	23 259.39	26 122.93	21 396.52	20 518.08	18 497.07	–20.5	–9.8	4.5	4.2
6. Other	NO	NO	NO	NO	NO	–	–	–	–
Total GHG emissions without LULUCF	**521 058.31**	**553 742.38**	**506 489.19**	**468 913.36**	**437 267.50**	**–16.1**	**–6.7**	**100.0**	**100.0**
Total GHG emissions with LULUCF	**515 618.76**	**535 440.46**	**472 283.31**	**448 114.69**	**403 185.93**	**–21.8**	**–10.0**	**NA**	**NA**
Indicators									
GDP per capita (thousands 2011 USD using PPP)	30.75	36.07	35.75	34.80	33.79	9.9	–2.9	NA	NA
GHG emissions without LULUCF per capita (t CO_2 eq)	9.19	9.72	8.54	7.88	7.26	–21.0	–7.8	NA	NA
GHG emissions without LULUCF per GDP unit (kg CO_2 eq per 2011 USD using PPP)	0.30	0.27	0.24	0.23	0.21	–28.1	–5.1	NA	NA

Sources: (1) GHG emission data: Italy's 2015 annual inventory submission; (2) GDP per capita data: World Bank.

Note: The ratios per capita and per GDP unit as well as the changes in emissions and the shares by sector are calculated relative to total GHG emissions without LULUCF using the exact (not rounded) values, and may therefore differ from the ratio calculated with the rounded numbers provided in the table.

Abbreviations: GDP = gross domestic product, GHG = greenhouse gas, IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NA = not applicable, NO = not occurring, PPP = purchasing power parity.

B. Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target

12. In its BR2 and CTF tables 2(a)–(f), Italy reported a description of its target, including associated conditions and assumptions. CTF tables 2(a)–(f) contain the required information in relation to the description of the joint European Union (EU) GHG emission reduction target, such as a 20 per cent reduction below the 1990 level by 2020. Further information on the target and the assumptions, conditions and methodologies related to the target is provided in chapter 3 of the BR2 as well as in the submission of the EU to the UNFCCC (FCCC/AWGLCA/2012/MISC.1).

13. 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 a 20 per cent reduction in GHG emissions by 2020 compared with the 1990 level. The EU offered to move to a 30 per cent reduction on the condition that other developed countries commit to a comparable target and developing countries contribute according to their responsibilities and respective capabilities under a new global climate change agreement.

14. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. This legislative package regulates emissions of CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 using global warming potential (GWP) values from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) to aggregate the GHG emissions of the EU up to 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU regulation 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. Companies can make use of such units to fulfil their requirements under the EU Emissions Trading System (EU ETS).

15. The EU 2020 climate and energy package includes the EU ETS and the effort-sharing decision (ESD) (see chapter II.C.1 below). Further information on this package is provided in chapter 4 of the BR2. The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. For the period 2013–2020, an EU-wide cap has been put in place with the goal of reducing emissions by 21 per cent by 2020 compared with the 2005 level. Emissions from sectors covered by the ESD are regulated by targets specific to each Member State, which leads to an aggregate reduction at the EU level of 10 per cent by 2020 compared with 2005.

16. Under the ESD, Italy has a target to reduce its total emissions to 13 per cent below the 2005 level by 2020 from sectors covered by the ESD (non-ETS sectors). National emission targets for non-ETS sectors for 2020 have been translated into binding quantified annual emission allocations (AEAs) for the period 2013–2020, as linearly declining targets from the average during the period 2008–2010 to the 2020 target. For Italy, the AEAs change, following a linear path from 308,161 kt of carbon dioxide equivalent (CO_2 eq) in 2013 to 294,411 kt CO_2 eq in 2020.[3]

[3] European Commission decision 2013/162/EU of 26 March 2013 "on determining member States'

17. The ERT noted that the provision of a description in Italy's next biennial report (BR) of how the EU target translates into its national target for emissions not covered by the EU ETS in terms of t CO_2 eq would increase the transparency of the reporting on the target.

18. The climate-related targets for the ETS and non-ETS sectors are supported by other energy-related policies with targets defined in the EU 2020 climate and energy package, such as the renewable energy target (20 per cent of final energy consumption (compared with 9 per cent in 2005)) under the EU renewable energy directive (directive 2009/28/EC). The EU renewable energy directive has an additional target of a 10 per cent share of renewables in transportation fuels by 2020. Another energy pillar of the EU climate and energy package is the non-binding energy efficiency objective (20 per cent of energy savings against baseline primary energy consumption, which is equivalent to a 13.2 per cent reduction below the 2005 level) under the EU energy efficiency directive (directive 2012/27/EU). The target for final energy consumption under the directive is an 8.5 per cent reduction below the 2005 level by 2020.

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

19. This chapter provides information on the review of the reporting by Italy on the progress made in reducing emissions in relation to the target, mitigation actions taken to achieve its target, and the use of units from market-based mechanisms and LULUCF.

1. Mitigation actions and their effects

20. In its BR2 and CTF table 3, Italy reported on its progress in the achievement of its target and the mitigation actions implemented and planned since its sixth national communication (NC6) and BR1 to achieve its target. Italy has provided information on mitigation actions introduced to achieve its target. The BR2 includes information on mitigation actions organized by sector and by gas, in the sense that the affected GHGs are reported. However, mitigation actions have not been organized by gas, and the ERT therefore recommends that Italy enhance the transparency of its reporting by organizing the reporting of mitigation actions also by gas, for example, by organizing mitigation actions first per sector and then per GHG affected. Further information on the mitigation actions related to the Party's target is provided in chapter 4.1 of the BR2.

21. The BR2 does not include the information required by the UNFCCC reporting guidelines on BRs on changes in domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its economy-wide emission reduction target.

22. During the review, Italy provided additional information and details, elaborating on the changes in its domestic institutional arrangements, as follows: in order to streamline the decision process, Italy set up an interministerial working group in 2014 with the assistance of the Office of the Interministerial Committee on European Union Affairs within the Office of the Department of European Affairs of the Head of Government. Representatives

annual emission allocations for the period from 2013 to 2020 pursuant to Decision No. 406/2009/EC of the European Parliament and of the Council" and European Commission decision 2013/634/EU of 31 October 2013 "on the adjustments to member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No. 406/2009/EC of the European Parliament and of the Council". In addition, the ERT calculated the base year (2005) ESD emissions from these two European Commission decisions.

from the Ministry of Economic Development, the Ministry of Environment, Land and Sea (IMELS), the Ministry of Economy and Finance (IMEF), the Ministry of Transport and the Ministry of Agriculture attend the meetings of the working group, as well as representatives from the National Institute for Environmental Protection and Research and the National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA). The working group discusses and agrees PaMs and scenarios for the reduction of GHG emissions. The financial support required for the implementation of PaMs is provided by each ministry or by ad hoc national legislation (e.g. the Green Act or the National Energy Strategy). A national system for PaMs and projections is currently being implemented.

23. Additional information on the institutional arrangements included an update on the institution Energy Service Operator (*Gestore dei Servizi Energetici* (GSE)), which is a State-owned company involved in promoting and supporting renewable energy sources in Italy. In particular, GSE fosters sustainable development by providing support for electricity generation using renewable energy sources and by taking actions to build awareness of environmentally efficient energy uses. GSE also assigns, provides and, if necessary, removes incentives from certain schemes.

24. In order to improve the completeness of its reporting, the ERT recommends that Italy include information on changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target in its next BR submission. The ERT notes that Italy could also report additional details of decision-making mechanisms in climate-change-related PaMs.

25. The BR2 does not include the information required by the UNFCCC reporting guidelines on BRs on the assessment of the economic and social consequences of response measures, and on arrangements and rules for assessment of compliance.

26. During the review, Italy provided additional information, elaborating on the assessment of the economic and social consequences of response measures and on arrangements and rules for assessment of compliance. Italy informed the ERT that information on economic and social impacts of response measures is contained in the NC6 and is updated annually in chapter 13 of the national inventory report. Italy also highlighted the fact that the European Commission (EC) supervises the achievement of the targets. In case of non-compliance, an infringement procedure is set up, and the European Court of Justice can, where applicable, fine the country in proportion with the underachievement.

27. The ERT reiterates the encouragement from the previous review report that Italy enhances the completeness of its reporting by providing detailed information on the assessment of the economic and social consequences of response measures in its next BRs.

28. The key overarching 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. This 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, namely the 7th Environment Action Programme and the Clean Air Policy Package (see table 3 below).

29. 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 industries, PFC emissions from aluminium production and CO_2 emissions from industrial processes (since 2013).

30. The ESD became operational in 2013 and covers sectors outside the EU ETS, including non-ETS industry, transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture, waste and other sectors, together accounting for 55–60 per cent of the GHG emissions of the EU. The ESD aims to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020 and includes binding annual targets for each Member State for 2013–2020, which are underpinned by the national policies and actions of the Member States (see paras. 15–18 above).

31. The BR2 highlights the EU-wide mitigation actions that are under development. Under the EU renewable energy directive, Italy's renewable energy supply target is 17 per cent of its final energy consumption in 2020, which is legally binding. With respect to renewable energy development, each Member State submitted a National Renewable Energy Action Plan in 2010. The directive also sets an indicative trajectory for each member State. With regard to primary energy consumption, Italy's indicative energy consumption reduction targets are 12 per cent for primary energy and 8 per cent for final energy below the 2005 level by 2020.

32. At the national level, Italy introduced policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported in the BR2 are the emission standards for new cars, the white certificates system, the infrastructural development measures focusing on transport, the separate collection of waste, the comprehensive Energy Act (*Conto Energia*), focusing on energy efficiency and savings measures, and the green certificates system. The mitigation impact of the emission standards for new cars is the most significant, with an expected reduction of 10,200 kt CO_2 eq by 2020. Other policies that have delivered significant emission reductions are: the white certificates system (estimated impact of 6,110 kt CO_2 eq), focusing on various energy efficiency improvement measures in different areas of the energy and industrial processes sectors; the green certificates system, delivering renewable energy production at an optimal social cost (estimated impact of 4,000 kt CO_2 eq); the new building regulations, focusing on improved insulation and efficiency standards (estimated impact of 3,610 kt CO_2 eq); the infrastructural development programme, targeting improved efficiency in the transport sector (estimated impact of 5,000 kt CO_2 eq); and separate waste collection in the residential sector (estimated impact of 3,700 kt CO_2 eq).

33. The BR2 highlights the domestic mitigation actions that are under development, such as the next phase of the white certificates system that is planned to continue beyond 2020. The ERT noted that among those mitigation actions that provide a foundation for significant additional actions, there are no actions that are critical for Italy to attain the 2020 emission reduction targets, as Italy can fulfil its commitments with existing measures alone. The ERT further noted the significant role of Italy's Legislative Decree 28/2011, which, through its planned residential energy savings and efficiency improvement measures, will result in an estimated emission reduction of 4,060 kt CO_2 eq.

34. Other significant planned policies include promoting and supporting the renewal of the car fleet, with the promotion of electric vehicles, and new measures to promote and support the use of renewable energy sources for electricity generation. During the review, Italy provided additional information on the expected impact of planned PaMs by 2030. The ERT noted that, based on this information, Italy is continuing to make significant efforts to reduce its emissions and reduce its carbon intensity.

35. Table 3 below provides a concise summary of the key mitigation actions and estimates of their mitigation effects reported by Italy to achieve its target in 2020.

Table 3
Summary of information on mitigation actions and their impacts reported by Italy

Sector affected	*List of key mitigation actions*	*Estimate of mitigation impact by 2020 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	National Energy Strategy	NE[a]
	European Union Emissions Trading System	NE
	National Action Plan for Renewable Energy	NE[b]
Energy, including:		
Transport	Infrastructural measures	5 700
	Emission standards for new cars	10 200
	Mandatory use biofuels	3 070
	Modal shift	1 280
Renewable energy	Third Energy Act (*Conto Energia*)	3 200
	Tradable green certificates	4 000
	Increase RES	1 400
Energy efficiency	White certificates	6 110
	Legislative Decree 201/07 on energy efficiency	4 520
	Building regulations (energy efficiency standards)	3 610
	National Strategic Framework on energy efficiency	1 320
	Supporting energy savings in existing buildings through a tax deduction of 55 per cent	1 050
IPPU	Reduction of nitrous dioxide emissions in nitric acid production plants	740
Agriculture	Rationalization of nitrogen fertilizer use	790
Waste	Separate collection of household waste	3 700

Note: The estimates of mitigation impact are estimates of emissions of carbon dioxide or carbon dioxide equivalent avoided in a given year as a result of the implementation of mitigation actions.

Abbreviations: IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NE = not estimated, RES = renewable energy sources.

[a] The estimated mitigation impact is 34,950 kt CO_2 eq if estimated from the expected 15 Mtoe savings and the average 2.33 t greenhouse gas/toe energy intensity data provided by the Party.

[b] Estimated for specific policies (e.g. the Energy Act (*Conto Energia*)).

36. During the review, Italy provided additional information on the impact of individual mitigation actions. Clarification was provided on how double counting was avoided, and a clear distinction was made regarding potentially overlapping policies (e.g. the distinction between incentives for the production of electrical power from renewable energy sources (*Tariffa Omnicomprensiva*) and incentives for the electricity producers (*Conto Energia*)) and complementing policies (e.g. policies targeting biofuel use).

37. With regard to energy efficiency measures, the ERT noted that the white certificates system plays a key role in achieving the Party's target and perhaps deserves international attention as it aims at achieving additional benefits in multiple – social, economic and environmental – dimensions. As described in the information supplied by Italy in its BR2 and during the review, this white certificates system provides a continuous basis for emission reductions through energy savings by promoting environmentally and economically viable solutions.

38. The ERT noted that there was a difference between the gap of the forecasts provided in the 'with measures' (WEM) and 'with additional measures' (WAM) scenarios, and the estimated individual impacts of planned measures included in the WAM scenario (see para. 64 below). During the review, Italy provided additional information highlighting that the evaluation of the mitigation impacts for each measure follows a methodology developed by ENEA, which does not appear to take into account the interactive effects among measures.

39. The ERT noted that when developing the WEM and WAM scenarios, the aggregate impacts of measures were estimated using a bottom-up model, as described in the BR2. The model evaluates the impacts of packages of measures using different assumptions. According to the Party, this approach avoids the double counting of impacts, considers rebound effects and reduces other discrepancies. Therefore, the difference between the emissions in the WEM and WAM scenarios is not the sum of the impacts of each measure as reported in the tables of chapter 5 of the BR2. Further, Italy confirmed that the WAM scenario not only incorporates the impact of planned measures, but also includes the impacts of the implemented measures that are still in place.

40. The ERT noted that the transparency of Italy's reporting on the assessment of the impacts of individual mitigation actions could benefit from the provision of additional information on the assumptions, methods and data used, including, for example, a sensitivity analysis for the impact of policies (see para. 51 below).

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

41. Italy reported in its BR2 and CTF tables 4, 4(a)I and 4(b) its use of units from market-based mechanisms under the Convention and the contribution of LULUCF to achieving its target. Further relevant information on emissions and removals and the use of units is provided in chapter 4.2 of the BR2. The ERT noted that CTF table 4(a)II was not filled in due to technical challenges with the CRF reporter software; the relevant information is provided in table 4.15 of Italy's BR2 instead.

42. For 2013, Italy reported in CTF table 4 annual total GHG emissions excluding LULUCF of 437,268.50 kt CO_2 eq, or 16.1 per cent below the 1990 level. The BR2 also includes provisional data on total GHG emissions excluding LULUCF for 2014, amounting to 417,255 kt CO_2 eq, or 19.9 per cent below the 1990 level. Although Italy is not required to include the information on ETS/non-ETS emission data in its BR2, the Party provided additional relevant information indicating this ETS/non-ETS emission data to the ERT during the review. According to this information, emissions from the non-ETS (ESD) sectors in 2013 were around 270,630 kt CO_2 eq, or 20 per cent, 12.2 per cent and 8.1 per cent below the 2005 level, the 2013 AEA and the 2020 ESD target, respectively.

43. On its use of units from LULUCF activities, Italy reported in its BR2 that it does not intend to use LULUCF activities to meet its target, as emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. Italy reported in CTF tables 4 and 4(b) that it did not use units from market-based mechanisms in 2012 and 2013 towards the achievement of its 2020 target. However, Italy noted that the joint EU target does not exclude the use of market-based mechanisms and Italy may choose the option to make use of such mechanisms to meet its target, if required. Table 4 below illustrates Italy's total GHG emissions, the contribution of LULUCF and the use of units from market-based mechanisms to achieve its target.

Table 4
Summary of information on the use of units from market-based mechanisms and land use, land-use change and forestry as part of the reporting on the progress made by Italy towards the achievement of its target

Year	*Emissions excluding LULUCF (kt CO_2 eq)*	*Contribution from LULUCF (kt CO_2 eq)*[a]	*Emissions including contribution from LULUCF (kt CO_2 eq)*	*Use of units from market-based mechanisms (kt CO_2 eq)*[b]
1990	521 058.31	NA	NA	NA
2010	506 489.19	NA	NA	NA
2011	494 292.22	NA	NA	NA
2012	468 913.36	NA	NA	NA
2013	437 267.50	NA	NA	NA

Sources: Italy's second biennial report and common tabular format tables 1, 4, 4(a)I and 4(b).
Abbreviations: LULUCF = land use, land-use change and forestry, NA = not applicable.
[a] The European Union's unconditional commitment to reduce greenhouse gas emissions by 20 per cent below the 1990 level by 2020 does not include emissions/removals from LULUCF.
[b] The market-based mechanism units are used by operators in the European Union Emissions Trading System (EU ETS) and by the Government to achieve the target under the effort-sharing decision (ESD). Quantitative information on the use of units for the EU ETS or the ESD is not yet available.

44. To assess the progress towards the achievement of the 2020 target, the ERT noted that Italy's emission reduction target for sectors not covered by the EU ETS under the ESD is 13 per cent below the 2005 level by 2020 (see para. 16 above). As discussed in chapter II.B above, in 2013, Italy's emissions from the sectors not covered by the EU ETS were approximately 12.2 per cent (around 37,370 kt CO_2 eq) below the AEA target in the trajectory under the ESD. In addition, the ERT noted that the EU target does not exclude the use of market-based mechanisms and Italy could choose the option to make use of such mechanisms to meet its target.

45. The ERT noted that Italy is making progress towards its emission reduction target as well as its ESD target with existing PaMs. Its total GHG emissions (excluding LULUCF) in 2013 were 16.1 per cent below the 1990 level. Further, the ERT noted that Italy's 2013 ESD emissions of 270,630 kt CO_2 eq were 12.2 per cent below Italy's 2013 ESD target and are already 8.1 per cent below Italy's 2020 ESD target. As the ESD allows member States to carry over their AEA, the ERT noted that it seems likely that Italy will be able to meet its ESD target by 2020.

3. Projections

46. Italy reported in its BR2 and CTF table 6(a) updated projections for 2020 and 2030 relative to actual inventory data for 2013 under the WEM scenario. Projections are

presented on a sectoral basis, using the same sectoral categories as used in the section on mitigation actions, and on a gas-by-gas basis for the following GHGs: CO_2, CH_4, N_2O, PFCs, HFCs and SF_6 (treating PFCs, HFCs and SF_6 collectively in each case) as well as NF_3. In addition, Italy provided projections for GHG emissions including LULUCF. Projections are also provided in an aggregated format for each sector as well as for a Party total, using GWP values from the IPCC AR4. Emission projections related to fuel sold to ships and aircraft engaged in international transport were not reported separately and were not included in the totals. Italy reported on factors and activities influencing emissions for each sector. Further information on the projections is provided in chapter 5 of the BR2.

47. In order to enhance the completeness of its reporting, the ERT recommends that Italy report emission projections related to fuel sold to ships and aircraft engaged in international transport separately, to the extent possible, in its next BR.

48. In addition to the WEM scenario, Italy reported in its BR2 and CTF table 6(c) the WAM scenario. During the review, Italy provided additional information on the WEM and WAM scenario GHG emission projections (excluding LULUCF) for the ETS and non-ETS sectors, as well as historical emissions for the period 2005–2013. The ERT notes that this information clarifies how Italy's ESD targets are expected to be met and further notes that presenting separate projections for emissions from sectors covered by the ETS and the ESD would further facilitate the assessment of whether Italy is on track to achieve its target.

49. The ERT noted that Italy did not report a 'without measures' (WOM) scenario in its BR2 and encourages the Party to enhance the completeness of its reporting by providing a WOM scenario in its next BR.

50. The ERT further noted that the provision of the following information would enhance the understanding of the models used: (1) a quantitative analysis of the factors/drivers of the projections as a whole or for each sector, with the continuation of historical emissions (divided by the milestone year 2008) as well as the projected emissions; (2) the underlying documents/materials used for the scenarios and the model should be listed as references; and (3) the sensitivity analysis may be undertaken for key 'single' parameters such as GDP in addition to a different 'set' of parameters as reported in the BR2.

51. In order to enhance the transparency of its reporting on projections, the ERT encourages Italy to provide sufficient information on its models to allow the reader to obtain a basic understanding of such models and/or approaches, including a summary of the strengths and weaknesses of the models and/or approaches used.

Overview of projection scenarios

52. The WEM scenario reported by Italy includes all PaMs that have been implemented up to 2030. Italy also reported on a WAM scenario, which includes planned and already adopted PaMs covering the same period. Italy provided a definition of its scenarios, including the key assumptions used. The definitions indicate that the scenarios have been prepared according to the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications".

53. The projections for the WAM scenario are prepared by sector and by gas similar to the WEM scenario for the period 2013–2030 (2020, 2025 and 2030). Italy provided information on the changes made since its NC6/BR1 in the assumptions, methodologies, models and approaches used and on the key variables and assumptions used in the updated scenarios using CTF table 5 (see paras. 54–56 below). Italy also provided information on the sensitivity analysis, which is described in chapter 5 of the BR2.

Methodology and changes since the previous submission

54. The methodology used in the BR2 is almost identical to that used for the preparation of the emission projections for the NC6/BR1. Italy reported supporting information further explaining the methodologies and the changes made since the NC6/BR1, which mainly involve the lower starting point of emissions due to the continuation of the global economic recession after 2010, as shown in figures 5.1 and 5.2 of the BR2.

55. To prepare its projections, Italy used the following key variables: GDP, population, energy prices, carbon price and share of industrial sector in GDP, as reported in CTF table 5. These variables have been updated on the basis of the most recent economic developments known at the time of the reporting on projections. The key assumptions are: (1) slow but steady recovery of the economy (1.1 per cent/year (2013–2020) and 1.5 per cent/year (2020–2030)) and (2) limited economic structural change for the period 2015–2030 (decline of the IPPU sector at 0.3 per cent/year).

56. Italy reported that sensitivity analyses were not conducted for the key parameter(s), but for a set of parameters, including population growth, GDP growth, international prices of primary energy sources, carbon price, and achievement of national RES and efficiency target as recommended by the EC. The difference between the WEM scenarios with original inputs and with EC recommended inputs is that the EC scenario estimates constantly lower emissions (by around 2 per cent) for the period 2015–2025, while a larger difference (about 7 per cent) is observed for 2030, mainly due to differences in the transport and manufacturing sectors irrespective of the GDP difference.

Results of projections

57. Italy's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 440,448 and 449,497 kt CO_2 eq, respectively, under the WEM scenario, which represents a decrease of 15.5 and 13.7 per cent, respectively, below the 1990 level (i.e. a slight increase for 2020–2030). Under the WAM scenario, emissions in 2020 and 2030 are projected to be lower than those in 1990 by 18.6 and 22.4 per cent and amount to around 424,348 and 404,483 kt CO_2 eq, respectively. The ERT noted that Italy has sharply reduced its GHG emissions compared with the period 2005–2013; however, it is projected that the emissions will be almost stable during the period 2013–2030 (a slight increase for the WEM scenario and a slight decrease for the WAM scenario). The 2020 projections suggest that Italy will continue contributing to the achievement of the EU target under the Convention (see paras. 13–16 above).

58. Italy's target for the emissions from sectors covered by the ESD (non-ETS sectors) is to reduce its total emissions by 13 per cent below the 2005 level by 2020 (see para. 16 above). Italy's AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 308,162 kt CO_2 eq in 2013 to 294,411 kt CO_2 in 2020. According to the additional information provided by Italy during the review on the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 276,242 kt CO_2 eq by 2020, corresponding to an estimated 18.4 per cent reduction below the 2005 level, although a slight increase is expected for 2013–2020. Under the WAM scenario, Italy's emissions from non-ETS sectors in 2020 are projected to be 263,314 kt CO_2 eq, corresponding to an estimated 22.2 per cent reduction below the 2005 level, which is a slight decrease below the 2013 level, noting that the target is a 13 per cent reduction. The ERT noted that this suggests that Italy expects to meet the ESD target under both the WEM and the WAM scenarios (see para. 45 above).

59. According to the projections reported by sector, the most significant GHG emission reductions under the WEM scenario from 1990 to 2020 will occur in the industrial processes and product use sector (36,789 kt CO_2 eq, or 29.1 per cent of the total emission

reductions), followed by the energy sector (33,226 kt CO_2 eq, or 14.3 per cent) and the waste sector (8,596 kt CO_2 eq, or 37.0 per cent). GHG emissions from the transport sector are projected to increase slightly by 3,195 kt CO_2 eq (3.1 per cent) above the1990 level by 2020. For the projections for 2030, the values are almost similar to those for 2020, with emission reductions being projected at 34,025 kt CO_2 eq (26.9 per cent below the 1990 level) for the industrial processes and product use sector and 33,352 kt CO_2 eq (14.4 per cent) for the energy sector, while emissions from the transport sector are projected to continue increasing to 12,367 kt CO_2 eq (12.0 per cent), mostly due to increasing use of road transportation and limited modal shift.

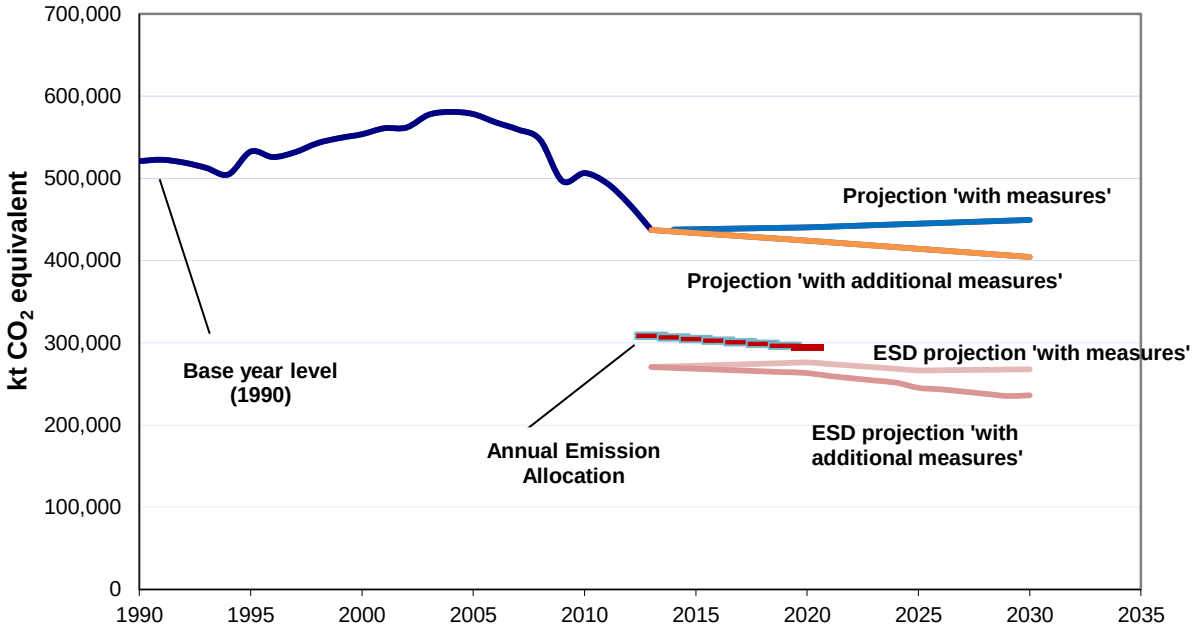
60. If additional planned measures, such as high efficiency standards planned for building stocks and the expansion of renewable energy sources, are considered under the WAM scenario, the sectoral shares change slightly: the industrial processes and product use sector remains the most prominent source of emission reductions, followed by the energy and waste sectors. However, the projected emissions in the transport sector under the WAM scenario decline by 1,946 kt CO_2 eq, or 1.9 per cent below the 1990 level by 2020 due to reduced demand for road transport caused by modal shifts and the effect of additional efforts to increase efficiency of cars beyond the objectives of EU regulation as well as expansion of natural gas use.

61. According to the projections reported by gas, reductions in CO_2 emissions are expected to contribute the most to the Party's overall emission reductions. Under the WEM scenario, reductions in CO_2 emissions (excluding LULUCF) will make up approximately 86.1 per cent of the aggregate GHG emission reductions below the 1990 level (69,439 kt CO_2 eq) by 2020, followed by CH_4 with 16.9 per cent (13,655 kt CO_2 eq) and N_2O with 9.1 per cent (7,320 kt CO_2 eq). In 2030, the projected shares of the aggregate GHG emission reductions below the 1990 level are 77.6 per cent for CO_2, 24.3 per cent for CH_4 and 9.8 per cent for N_2O.

62. Under the WAM scenario, reductions in CO_2 emissions will make up approximately 87.8 per cent of the aggregate GHG emission reductions below the 1990 level (84,939 kt CO_2 eq) by 2020, followed by CH_4 with 14.4 per cent (13,879 kt CO_2 eq) and N_2O with 8.0 per cent (7,697 kt CO_2 eq). In 2030, the projected shares of the aggregate GHG emission reductions below the 1990 level are 85.0 per cent for CO_2, 15.4 per cent for CH_4 and 6.8 per cent for N_2O.

63. The projected emission levels under the different scenarios and Italy's quantified economy-wide emission reduction target are presented in the figure below.

Greenhouse gas emission projections by Italy



Sources: (1) Data for the years 1990–2013: Italy's 2015 annual inventory submission; total GHG emissions excluding land use, land-use change and forestry; (2) Data for the years 2013–2030: Italy's second biennial report; total GHG emissions excluding land use, land-use change and forestry; ESD-related projections provided by the Party during the review, while the annual emission allocations are those defined in European Union (EU) decision 2013/162/EU and adjusted by EU decision 2013/634/EU.

Abbreviations: ESD = European Union effort-sharing decision, GHG = greenhouse gas.

64. The BR2 includes the aggregated effects of additional PaMs (excluding fugitive, industrial processes, agriculture, waste and LULUCF sectors) expected to be implemented as the difference between the WEM and WAM scenario emission figures. The projections show that such additional measures are expected to contribute 0.5–0.6 per cent per annum and are aggregated to be 3.5 per cent (16,100 kt CO_2 eq) and 10.0 per cent (45,014 kt CO_2 eq) in 2020 and 2030, respectively. The effect of the additional PaMs will start in the industrial processes and product use sector immediately, but will be led by the public sector (about 31 per cent) and the transport subsector (about 25 per cent), followed by the industrial processes and product use sector (about 23 per cent) and the energy sector (about 20 per cent) in 2030.

65. Although LULUCF activities are not included in the target, the ERT acknowledged the information submitted by Italy on the estimated effects of PaMs in the LULUCF sector in terms of emissions avoided or sequestrated, including how the model assessment has been made to calculate the carbon stock changes with an explanation of the activity type included. The WEM scenario estimates that the effect of LULUCF activities will be a 20 per cent and 33 per cent reduction by 2020 and 2030, respectively, for the overall net GHG emissions. Under the WAM scenario, the estimated effect of LULUCF activities decreases to 17 per cent and 23 per cent by 2020 and 2030, respectively, for the overall net GHG emission, because no additional LULUCF PaMs are included in the WAM scenario.

66. The ERT noted that the trend of Italy's energy-related CO_2 emission profile for

1990–2030 is characterized by three periods, namely: (1) 1990–2008 (steady growth of GDP; 1.3 per cent/year on average); (2) 2008–2013 (economic recession; −1.6 per cent/year on average); and (3) 2013–2030 (projected future with a steady growth of 1.3 per cent/year on average).

67. By utilizing a factor analysis, the ERT noted that for the period 1990–2008, CO_2 emissions increased by 0.4 per cent per annum as the result of improved energy intensity measured in the ratio of TPES per unit of GDP (TPES/GDP) by 0.4 per cent per annum and declining CO_2 emissions per total primary energy supply (CO_2/TPES) by 0.5 per cent per annum. For the period 2008–2013, TPES and CO_2 emissions decreased by 2.5 per cent and 5.1 per cent, respectively, per annum, largely exceeding the declining rate of Italy's GDP during the same period.

68. In response to questions raised by the ERT during the review, Italy provided additional information indicating a structural shift in its economy towards service sectors. The ERT noted that this shift could be the main reason behind the reduction in Italy's energy intensity, measured in the ratio of TPES to GDP (TPES/GDP). The ERT further noted that the shift in Italy's energy mix from coal towards renewable energy sources also contributed to the decreasing rate of CO_2 intensity (CO_2/TPES).

69. The ERT noted that despite a sharp decrease in CO_2 emissions for the period 2008–2013, the projected WEM scenario estimates that Italy's CO_2 emissions will increase slightly during the period 2013–2030. The WAM scenario shows an additional annual emission reduction of around 0.7 per cent. The ERT further noted that Italy's CO_2 emission reductions were achieved during the economic recession (2008–2013), and that Italy does not expect large emission reductions in the future, as reported in its projections (see the figure above). The factor analysis used for the projections shows that Italy's energy intensity (TPES/GDP) will continue to reduce at a comparable rate to that during the period 2008–2013, despite the absence of additional economic structural changes, while the CO_2 intensity (CO_2/TPES) will increase slightly under the WEM scenario and will be almost stable under the WAM scenario, despite the expansion in the use of renewable energies.

70. The ERT noted that a bottom-up analysis of Italy's PaMs results in an estimated aggregated effect of current PaMs of around 12 per cent below the 2013 level in 2020. Assuming that this projection has been and will be realized in 10 years, the annual effect is an emission reduction of around 1 per cent. The ERT further noted that Italy's planned PaMs (1.8 per cent in 2020) may contribute to a total national GHG emission reduction of 0.3 per cent per annum until 2020.

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

71. In its BR2, Italy reported information on the provision of financial, technological and capacity-building support required under the Convention.

72. Italy provided details on what new and additional support it has provided; however, the Party did not clearly explain how this support is defined as new and additional.

73. During the review, Italy provided additional information, indicating that no internationally accepted agreement exists on what is considered to be new and additional. According to the information provided in the BR2 and the additional information provided during the review, Italy explained that "the proceeds from auctioning of greenhouse gas emission allowances of the year 2013 and 2014 are allocated starting from 2015 will be additional financial resources provided to developing country Parties".

74. In response to questions raised by the ERT during the review, Italy provided additional information, stating that "the financial contribution pledged to the Green Climate Fund during the United Nations summit in New York in September 2014, EUR 250 million of which EUR 50 million already disbursed in 2015, is a new additional support; besides that in 2015 Italy pledged additional funding to the Adaptation Fund (AF), EUR 2 million, already disbursed in 2015, and to the Least Developed Countries Fund (LDCF), EUR 2 million, to be disbursed during the course of 2016 year".

75. The ERT acknowledges the additional information provided by the Party during the review and recommends that Italy improve the transparency of its reporting by providing in its next BR information clarifying how it has determined that resources are new and additional, including the additional information provided by the Party during the review.

76. The ERT also noted that some of the information reported by Italy on the following elements was not fully transparent, specifically: the description of the national approach for tracking the provision of financial support, including information on indicators and delivery mechanisms used and allocation channels tracked, and the description of the methodology used to report financial support and underlying assumptions (see paras. 78–80 below). However, during the review, Italy provided additional and mostly transparent information on these issues.

77. During the review, Italy provided additional information further clarifying that the public financial resources to assist developing countries to develop and implement climate change actions in the period 2013–2014 were provided by: the funds of IMELS according to the stipulations of Law No. 120 of 1 June 2002; the funds of the Ministry of Foreign Affairs (IMFA) for development cooperation; and the funds of IMEF provided to multilateral institutions for environmental activities related to climate change.

78. Italy also provided additional information during the review, further clarifying that IMEF is responsible for monitoring, reporting and archiving information on financial resources allocated to the ministries for financial, technological and capacity-building support to developing countries. IMEF, IMELS and IMFA provide funds for programmes and activities in the field of climate change. Moreover, all the expenditures made through these funds are examined by the decentralized offices of IMEF and audited every year by the Corte dei Conti (the institution with the role of safeguarding public finance and guaranteeing respect of the legal system).

79. The approach of IMELS to tracking the provision of financial, technological and capacity-building support to non-Annex I Parties is based on: (1) national steering committees that periodically take stock and assess the implementation and progress of projects, as well as approve budgets and select projects, and (2) periodical site visits of national experts to monitor and assess activities on the ground to ensure that they are being implemented in accordance with their expected results, as agreed in the memorandums of understanding between Italy and the beneficiary countries.

80. According to the information provided in the BR2 and the additional information provided during the review, Italy is making efforts to track the implementation of the above-mentioned activities (see para. 79 above), even though different channels are involved, such as bilateral and multilateral channels and implementing agencies, and monitoring of calls for tenders for non-governmental organizations and project developers.

81. Summarizing the information provided by the Party, the ERT noted that Italy is using the following indicators to track the financial support provided to non-Annex I Parties: (1) project- or fund-specific indicators used to measure the achievement of the objectives of financial support and to monitor and evaluate the progress of project implementation and (2) the same indicators that are used by the Organisation for Economic Co-operation and Development (OECD) to measure the results of financial support

operations (i.e. information extracted from that provided by Italy to the OECD Development Assistance Committee through the Creditor Reporting System).

82. The ERT acknowledges the additional information made available during the review and recommends that Italy enhance the transparency of its reporting by providing in its next BR detailed information (i.e. as provided during the review and described in paras. 77–80 above) on the underlying assumptions and methodologies used to produce information on finance and on the description of its national approach to tracking the provision of financial support to non-Annex I Parties, including more specific information on the indicators and delivery mechanisms used and allocation channels tracked.

83. Italy reported that its financial support addresses the needs of non-Annex I Parties through cooperation and provides funding for mitigation and adaptation activities, recognizing the capacity-building elements of such support. Italy reported in its BR2 that its commitment to addressing climate change and related support to developing countries is enshrined in Decree No. 30 of March 2013. The decree defines the criteria for the allocation of the proceeds from the auctioning of GHG emission allowances. In total, 50 per cent of those proceeds should be used to: reduce GHG emissions; adapt to the impacts of climate change; fund research and development for reducing emissions and adaptation; develop renewable energies and increase energy efficiency; contribute to the Global Energy Efficiency and Renewable Energy Fund and the Adaptation Fund; and provide for measures to avoid deforestation and facilitate adaptation in developing countries.

1. Finance

84. In its BR2 and CTF tables 7, 7(a) and 7(b), Italy reported information on the provision of financial support required under the Convention, including on financial support provided, committed and pledged, allocation channels and annual contributions (see paras. 89–91 below). The summary information was reported for 2013–2014.

85. 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 to mitigate and adapt to the adverse effects of climate change, and contribute to technology development and transfer and capacity-building related to mitigation and adaptation (see chapters II.D.2 and II.D.3 below).

86. The ERT also noted that parts of the information provided in CTF tables 7, 7(a) and 7(b) was provided in EUR only, without providing its equivalent in USD. During the review, the Party provided the required information expressed in USD for CTF tables 7, 7(a) and 7(b), noting that the appropriate OECD exchange rates were used for converting EUR into USD.

87. The ERT recommends that the Party provide, in its next BR, all financial information on support provided in the original currency (EUR) and its equivalent in USD, as required by the UNFCCC reporting guidelines on BRs. The ERT noted that indicating the applied exchange rates for converting EUR into USD would further enhance the transparency of the reporting.

88. 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 Decree No. 30 of March 2013 (see para. 83 above).

89. Italy reported on its climate-specific public financial support provided in 2013 and 2014, totalling USD 215.41 million in 2013 and USD 219.70 million in 2014. It has increased its contributions by 239.1 per cent since its NC6/BR1 (USD 435.11 million in 2013–2014 compared with USD 128.30 million in 2011–2012). With regard to Italy's

future financial pledges aimed at enhancing the implementation of the Convention by developing countries, detailed information is provided in paragraph 74 above.

90. The BR2 includes detailed information on the financial support provided though multilateral channels, and bilateral and regional channels in 2013 and 2014. More specifically, Italy contributed through multilateral channels, as reported in its BR2 and CTF table 7(a), USD 537.43 and 494.30 million for 2013 and 2014, respectively, of which USD 153.86 and 185.82 million for 2013 and 2014, respectively, was climate-specific support. These contributions were made to specialized multilateral climate change funds, such as the Global Environment Facility, the African Development Bank, the Asian Development Bank, the Inter-American Development Bank, the Green Climate Fund, the International Fund for Agricultural Development, the International Bank for Reconstruction and Development, international development associations and specialized United Nations bodies.

91. The BR2 and CTF table 7(b) include detailed information on the total financial support provided though bilateral, regional and other channels (USD 61.55 and 33.87 million in 2013 and 2014, respectively). The major bilateral and multilateral channels are the official development assistance and other official flows. Table 5 includes some of the information reported by Italy on its provision of financial support.

Table 5
Summary of information on provision of financial support in 2013–2014
(Millions of United States dollars)

	Years of disbursement	
Allocation channel of public financial support	*2013*	*2014*
Official development assistance[a]	3 430.07	4 009.18
Climate-specific contributions through multilateral channels, including:	153.86	185.82
Global Environment Facility	11.40	17.60
Green Climate Fund	–	0.50
Multilateral financial institutions, including regional development banks	123.40	123.88
United Nations bodies	19.06	43.84
Climate-specific contributions through bilateral, regional and other channels	61.55	33.87

[a] Source: Query Wizard for International Development Statistics, available at <http://stats.oecd.org/qwids/>.

92. The BR2 provides information on the types of support provided. In terms of the focus of public financial support, as reported in CTF table 7 for 2013, the shares of total public financial support allocated for mitigation, adaptation and cross-cutting projects corresponding to these channels were 6.0, 8.6 and 85.4 per cent, respectively. 71.4 per cent of the total public financial support was allocated through multilateral channels and 28.6 per cent of it was through bilateral, regional and other channels. In 2014, the shares of total public financial support allocated for mitigation, adaptation and cross-cutting projects corresponding to these channels were 7.7, 1.2 and 91.2 per cent, respectively. 84.6 per cent of the total public financial support was allocated through multilateral channels and 15.4 per cent of it was through bilateral, regional and other channels.

93. The ERT noted that, during the period 2013–2014, around 98.6 per cent of the financial contributions made through multilateral channels was allocated to funding for activities that are cross-cutting across mitigation and adaptation, 1.2 per cent to mitigation activities and 0.2 per cent to adaptation activities, as reported in CTF table 7(a). Most of the multilateral funding was allocated to energy and agriculture activities.

94. With regard to the financial contributions made through bilateral and regional support channels, the ERT noted that, in 2013, 14.8 per cent was allocated to mitigation, 28.9 per cent to adaptation and the remaining 56.3 per cent to funding for activities that are cross-cutting across mitigation and adaptation, as reported in CTF table 7(b). The corresponding figures for 2014 were 49.1, 7.5 and 43.4 per cent, respectively. The focus for mitigation support was on energy and agriculture, while for adaptation and cross-cutting activities, the focus varies.

95. In its BR2, Italy reported that bilateral activities have been focused on: fostering the use and exploitation of renewable energies (21 per cent); sustainable agriculture and forest management (27 per cent); protecting and conserving natural resources and water (17 per cent); increasing resilience to climate change and enhancing the capacities of the relevant national institutions dealing with natural disaster and risk reduction management (7 per cent); waste management (2 per cent); and biodiversity protection (2 per cent). Many activities have also been committed to fostering a social and human growth that is respectful of the environment, to promote sustainable development and improve the scientific expertise of the institutions responsible for climate change policies (23 per cent). These support activities are distributed across all regions as follows: Africa (40.5 per cent; the average share over the period 2013–2014), Asia (21.1 per cent), Europe and the Mediterranean area (18.9 per cent), South America (8.8 per cent), the Middle East and North Africa (5.2 per cent), Central America and the Caribbean (3.2 per cent) and small island developing States (2.2 per cent).

96. CTF tables 7(a) and 7(b) include information on the types of financial instrument used in the provision of assistance to developing countries, which include grants and concessional loans. The ERT noted that the share of the grants and loans provided in 2013 was approximately 99.3 and 0.7 per cent, respectively, of the total public financial support. The corresponding figures for 2014 were 95.2 and 4.8 per cent, respectively. Also, according to its BR2, during the period 2013–2014, the national multilateral environmental activities were characterized as the following: supply of financial resources; design and implementation of programmes and projects; promotion of the transfer of environmentally sound technologies aimed at reducing the impacts of human activities on climate change; and support to adaptation measures. In the respective period, Italy contributed to the operating entities of the Financial Mechanism of the Convention, other multilateral institutions and international financial institutions and other multilateral development banks. The climate-relevant component of these contributions was determined based on the climate-relevant share of the portfolio of those institutions.

97. During the review, Italy provided additional information, indicating that it does not yet have a monitoring system in place to track private financial resources leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties. In this regard, IMELS is considering the development of a tool by the end of 2016 to monitor and report on such private financial resources leveraged by public international cooperation. Moreover, Italy is working with the United Nations Environment Programme (UNEP) in the context of the international initiative UNEP Inquiry to identify practical policy options to mobilize the Party's public and private financial resources to support climate action.

98. The ERT acknowledged the Party's initiative to establish a monitoring system to track private financial resources leveraged by bilateral climate finance for mitigation and

adaptation activities in non-Annex I Parties and encourages Italy to provide in its next BR, to the extent possible, information on private financial flows leveraged by bilateral climate finance for mitigation and adaptation activities in non-Annex I Parties, including on related PaMs that promote the scaling up of private investment in mitigation and adaptation activities in developing country Parties.

2. Technology development and transfer

99. In its BR2 and CTF table 8, Italy provided information on measures and activities related to technology transfer, access and deployment benefiting developing countries, including information on activities undertaken by the public and private sectors.

100. In its BR2, Italy provided limited information on measures taken to support development and enhancement of the endogenous capacities and technologies of non-Annex I Parties. During the review, Italy provided additional information on the measures taken, including activities to promote the use of renewable energies through the private sector.

101. The ERT recommends that Italy enhance the transparency of its reporting and provide information on measures taken to support the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties in its next BR submission.

102. 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, with a majority of measures focusing on mitigation and cross-cutting activities. Italy has reported 33 technology transfer initiatives; with 19 of these initiatives being targeted at mitigation, 1 at adaptation, and 13 have both mitigation and adaptation targets. The technology transfer priorities for mitigation focus on the application of solar and wind energy, and the use of electricity from renewable energy sources, as well as technical retrofitting in the use of gas-fired boilers to lower nitrogen oxide (NO_x) emissions and research into carbon capture and storage, focusing on small island developing States, as well as countries in Africa, Asia and Latin America.

103. Italy did not provide in its BR2 information on success and failure stories. However, in response to questions raised by the ERT during the review, Italy provided additional information in this regard, elaborating on one success story regarding a pilot project entitled "Low-NO_x emission gas-boiler" developed and implemented in Beijing.

104. The ERT acknowledges the additional information made available during the review and encourages the Party to enhance the completeness of its reporting by providing in its next BR information on success and failure stories related to technology transfer to developing countries, which could include information on the involvement of the private sector as reported during the review.

3. Capacity-building

105. In its BR2 and CTF table 9, Italy supplied information on how it provided capacity-building support for addressing mitigation and adaptation to climate change, and the transfer and promotion of low-carbon technologies that respond to the existing and emerging needs identified by non-Annex I Parties, as well as for undertaking studies and research in order to provide scientific support to decision-making processes. Italy also reported that the technology transfer and capacity-building support provided is synchronized.

106. Italy reported that it responds 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, cooperation among donors and across programmes, and impact assessment and monitoring.

107. In spite of the persistent economic crisis in Italy, the Party's environmental cooperation efforts have continued. The regions provided with such capacity-building support include the South Mediterranean countries, Asia, Africa, South-Eastern Europe, Latin America and the Pacific, the Caribbean and Pacific Small Island developing States.

108. The BR2 and CTF table 9 include information describing 14 individual capacity-building measures and activities carried out during the reporting period. These measures cover a variety of activities, for example, the Climate Change and Mountain Forests Project, implemented in Latin America and the Pacific, and the Adaptation to Climate Change of the Mediterranean Agricultural Systems project, and focus on a large number of countries mainly in the North Africa region, Eastern and Southern Europe, Central Asia, Latin America and the Pacific islands. The ERT commends Italy for reporting in a transparent and detailed way on these capacity-building initiatives.

III. Conclusions

109. The ERT conducted a technical review of the information reported in the BR2 and CTF tables of Italy in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information is mostly in adherence with the UNFCCC reporting guidelines on BRs and provides an overview on: emissions and removals related to Italy's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; progress made by Italy in achieving its target; and Italy's provision of support to developing country Parties.

110. Italy's total GHG emissions excluding LULUCF related to its quantified economy-wide emission reduction target were estimated to be 16.1 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 21.8 per cent below its 1990 level for 2013. The emission decrease was driven by external factors, notably the economic downturn since 2008 and the shift in the economic structure to service sectors, as well as to a lesser extent by the PaMs consistent with the EU 2020 climate and energy package.

111. Under the Convention, Italy is committed to contributing to the achievement of the joint EU quantified economy-wide target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and the gases CO_2, CH_4, N_2O, HFCs, PFCs and SF_6, expressed using GWP values from the AR4. 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. Companies can make use of such mechanisms to fulfil their requirements under the EU ETS.

112. Under the ESD, Italy has a target to reduce its emissions by 13 per cent below the 2005 level by 2020. Italy's AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 308,161 kt CO_2 eq in 2013 to 294,411 kt CO_2 eq in 2020. The ERT noted that Italy's emissions under the ESD in 2013 are estimated to be 270,630 kt CO_2 eq, which is 12.2 per cent below its 2013 annual ESD target and 8.1 per cent below its 2020 ESD target.

113. For 2013, Italy reported in CTF table 4 total GHG emissions excluding LULUCF at 437,268.50 kt CO_2 eq, or 16.1 per cent below the 1990 level. Italy reported on the

possibility of its use of units from market-based mechanisms to achieve its target, but does not plan to use such units, which is also reflected in its projections.

114. The GHG emission projections provided by Italy in its BR2 include those for the WEM and WAM scenarios. Under these two scenarios, emissions are projected to be 15.5 and 18.6 per cent below the 1990 level in 2020, respectively. With regard to the projections for the sources covered under the ESD, the emissions are projected to be 21.6 and 25.3 per cent below the 2005 level in 2020, respectively. Based on this information and the 2013 emission data above (see par 58 above), and the fact that the ESD allows member States to carry over their AEAs as well as use other market-based mechanisms, the ERT concluded that Italy expects to meet its target for the non-ETS sectors.

115. Italy continues to allocate climate financing in line with Decree No. 30 of March 2013, which addresses climate change and the provision of related support to developing country Parties to implement the Convention. Italy has increased its climate-specific contributions by 239.4 per cent since its NC6/BR1, and its public financial support in 2013 and 2014 totalled USD 215.5 and 219.9 million per year, respectively. For these years, Italy's support provided for cross-cutting climate-change-related projects was higher than the support provided for stand-alone mitigation and adaptation actions. The highest level of financial support went to cross-cutting projects followed by projects in the energy and agriculture sectors.

116. Italy reported 33 technology transfer initiatives in CTF table 8. The technology transfer priorities for mitigation focus on the application of solar and wind energy, and the use of electricity from renewable energy sources, as well as technical retrofitting in the use of gas-fired boilers to lower NO_x emissions and research into carbon capture and storage. Italy supplied information on how it provided capacity-building support for addressing mitigation and adaptation to climate change, and the transfer and promotion of low-carbon technologies that respond to the existing and emerging needs identified by non-Annex I Parties, as well as for undertaking studies and research in order to provide scientific support to decision-making processes.

117. In the course of the review, the ERT formulated several recommendations for Italy to address in its next BR. The key recommendations[4] are that Italy:

(a) Improve the completeness of its reporting by:

(i) Providing information on changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target (see para. 24 above);

(ii) Reporting separately, to the extent possible, emission projections related to fuel sold to ships and aircraft engaged in international transport (see para. 47 above);

(iii) Providing all financial information on support in the original currency (EUR) and also in its equivalent in USD in CTF tables 7, 7(a) and 7(b) (see para. 87 above);

(b) Improve the transparency of its reporting by:

(i) Organizing the reporting of mitigation actions also by gas (see para. 20 above);

(ii) Providing information clarifying how it has determined that resources are new and additional (see para. 75 above);

[4] The recommendations are given in full in the relevant chapters of this report.

(iii) Providing detailed information on the underlying assumptions and methodologies used to prepare the information on finance, and on the national approach to tracking the provision of financial support to non-Annex I Parties (see para. 82 above);

(iv) Providing information on measures taken to support the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties (see para. 101 above).

Annex

Documents and information used during the review

A. Reference documents

"UNFCCC biennial reporting guidelines for developed country Parties". Annex to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=4>.

"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#page=2>.

"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>.

FCCC/ARR/2014/ITA. Report on the individual review of the annual submission of Italy submitted in 2014. Available at <http://unfccc.int/resource/docs/2015/arr/ita.pdf>.

FCCC/IDR.6/ITA. Report of the in-depth review of the sixth national communication of Italy. Available at <http://unfccc.int/resource/docs/2014/idr/ita06.pdf>.

FCCC/TRR.1/ITA. Report of the technical review of the first biennial report of Italy. Available at <http://unfccc.int/resource/docs/2014/trr/ita01.pdf>.

2015 greenhouse gas inventory submission of Italy. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8812.php>.

Sixth national communication of Italy. Available at <http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/ita_nc6_resubmission.pdf>.

First biennial report of Italy. Available at <http://unfccc.int/files/national_reports/annex_i_natcom_/application/pdf/ita_nc6.pdf>.

Common tabular format tables of the first biennial report of Italy. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/ita_2014_v3.0_formatted.pdf>.

Second biennial report of Italy. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/br2_italy_2015.pdf>.

Common tabular format tables of the second biennial report of Italy. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/ita_2016_v1.0_formatted.pdf>.

B. Additional information used during the review

Responses to questions during the review were received from Ms. Federica Fricano (Ministry for the Environment, Land and Sea), including additional material and the following documents[1] provided by Italy:

ENEA. 2010. *Quadro Strategico Nazionale, Valutazione dell'impatto dei programme operative FESR sulla riduzione delle emission di gas SERRA, 2007-2013.*

Istituto Poligrafico e Zecca dello Stato, Gazzetta Ufficiale della Repubblica Italiana 165/2014. *DECRETO LEGISLATIVO 4 luglio 2014, n. 102. Attuazione della direttiva 2012/27/UE. sull'efficienza energetica, che modifica le direttive 2009/125/CE e 2010/30/UE e abroga le direttive 2004/8/CE e 2006/32/CE.*

Ministro dell'ambiente e della tutela del territorio. 2015. *Terza relazione dell'Italia in merito ai progressi ai sensi della direttiva 2009/28/CE*.

Ministro dell'ambiente e della tutela del territorio. 2013. *Strategia Energetica Nazionale: per un'energia più competitiva e sostenibile*, March 2013.

Ministro dello sviluppo economico. 2014. *Piano d'Azione Italiano per l'Efficienza Energetica*, July 2014. Available at <https://ec.europa.eu/energy/sites/ener/files/documents/2014_neeap_it_italy.pdf>.

[1] Reproduced as received from the Party.