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

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 Romania, 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”.

Contents

	<i>Paragraphs</i>	<i>Page</i>
I. Introduction and summary.....	1–5	3
A. Introduction.....	1–2	3
B. Summary.....	3–5	3
II. Technical review of the reported information	6–72	4
A. All greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target	6–13	4
B. Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	14–22	7
C. Progress made towards the achievement of the quantified economy-wide emission reduction target	23–71	8
D. Provision of financial, technological and capacity-building support to developing country Parties.....	72	19
III. Conclusions	73–84	19
Annex		
Documents and information used during the review		22

I. Introduction and summary

A. Introduction

1. This report covers the centralized technical review of the second biennial report (BR2)¹ of Romania. 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 Romania, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

2. The review took place from 6 to 11 June 2016 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Ms. Marta Alfaro (Chile), Mr. Daniel Bouille (Argentina), Mr. Amit Garg (India), Mr. Leonidas Osvaldo Girardin (Argentina), Ms. Kema Kasturiarachchi (Sri Lanka), Ms. Thelma Krug (Brazil), Mr. Asger Strange Olesen (Denmark), Mr. Nasimjon Rajabov (Tajikistan), Mr. Erik Rasmussen (Denmark), Ms. Sirinthornthep Towprayoon (Thailand), Mr. Goran Vukmir (Bosnia and Herzegovina) and Ms. Christina Waldron (United States of America). Mr. Garg and Mr. Rasmussen were the lead reviewers. The review was coordinated by Mr. Nalin Srivastava and Ms. Xuehong Wang (UNFCCC secretariat).

B. Summary

3. The expert review team (ERT) conducted a technical review of the information reported in the BR2 of Romania 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, Romania provided the following additional information: clarification regarding the base year for its quantified economy-wide emission reduction target; contribution of the land use, land-use change and forestry (LULUCF) sector and the use of international market-based mechanisms in achieving its emission reduction target; clarification regarding the effects of mitigation actions; clarification regarding the global warming potential (GWP) values used in the projections; emission projections for 2015, 2025 and 2035; key underlying assumptions and the methodology used for the estimation of emission projections; projections for the sectors covered by the European Union Emissions Trading System (EU ETS) and those not covered by it; and information on Romania’s annual emission allocations under the effort-sharing decision (ESD) of the European Union (EU).

1. Timeliness

4. The BR2 was submitted on 29 December 2015, before the deadline of 1 January 2016 mandated by decision 2/CP.17. The common tabular format (CTF) tables were submitted on 29 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 Romania 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 Romania

<i>Section of the biennial report</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Paragraphs with recommendations</i>
Greenhouse gas emissions and trends	Mostly complete	Mostly transparent	8, 9
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Mostly transparent	16, 18
Progress in achievement of targets	Mostly complete	Mostly transparent	27, 39, 41, 48, 50
Provision of support to developing country Parties ^a	NA	NA	NA

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.

^a Romania is not a Party included in Annex II to the Convention and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3, 4 and 5, of the Convention.

II. Technical review of the reported information

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

6. Romania 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 Romania’s 2015 annual inventory submission (in chapter 1, section 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.

7. Romania provided information on changes in the national inventory arrangements since its previous annual GHG inventory submission. These changes include: implementation of the studies done in 2014 towards strengthening the national system by third-party organizations; update of legal acts for selection of activity data, emission factors and quality assurance and quality control (QA/QC) procedures; change of the title of the national entity with the overall responsibility for the national inventory from the Ministry of Environment and Climate Change to the Ministry of Environment, Waters and Forests; and improvement of the national system with regard to timely performance of its functions, collection of activity data and emission factors, QA/QC and reporting on the LULUCF sector under the Kyoto Protocol.

8. Romania has not reported in CTF tables 1 and 1(a)–(d) the information on changes in GHG emissions from the base year to the latest year reported (2013). During the review, in response to a question raised by the ERT, Romania provided this information. The ERT recommends that, in order to enhance the completeness of its reporting, Romania report the information on changes in GHG emissions from the base year to the latest year reported in CTF tables 1 and 1(a)–(d) in its next biennial report (BR) submission.

9. The ERT noted that the information on GHG emission trends by gas presented in the textual section of the BR2 (table 2.4) is not consistent with that reported in CTF tables 1 and 1(a)–(d) or the GHG inventory submission of Romania for 2015. During the review, Romania explained that the discrepancies between the values reported in the textual part of the BR2 and those in the CTF tables are due to transcription errors in the BR2. The ERT recommends that Romania improve the transparency of its reporting by ensuring consistency in the information on GHG emission trends reported in the textual part of the BR and CTF tables 1 and 1(a)–(d) in the next BR submission.

10. The information reported in the CTF tables on GHG emissions and emission trends is consistent with that reported in the 2015 annual inventory submission of Romania. To reflect the most recently available data, version 1.0 of Romania's 2016 annual inventory submission has been used as the basis for discussion in chapter II.A of this review report.

11. Total GHG emissions² excluding emissions and removals from LULUCF decreased by 56.4 per cent between 1990 and 2014, whereas total GHG emissions including net emissions and removals from LULUCF decreased by 60.7 per cent over the same period. The decrease in the total GHG emissions can be attributed mainly to carbon dioxide (CO₂) emissions, which decreased by 57.6 per cent (excluding LULUCF) between 1990 and 2014. Over the same period, emissions of methane (CH₄) (excluding LULUCF) decreased by 54.0 per cent, while emissions of nitrous oxide (N₂O) (excluding LULUCF) decreased by 55.5 per cent. The combined fluorinated gases, such as perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF₆), decreased by 41.7 per cent over the same period. Romania reported the emissions for nitrogen trifluoride as "NO" (not occurring).

12. Romania's emissions (excluding LULUCF) decreased by 55.1 per cent in the period 1989–1999³ as a result of the reduction in energy consumption stemming from the decline of the industrial sector following Romania's transition from a centralized economy to a market-based one. GHG emissions (excluding LULUCF) increased slowly in the period 2000–2007 owing to economic growth. GHG emissions (excluding LULUCF) have, however, decreased by 22.3 per cent in the period 2008–2014 as a consequence of the global financial crisis and the mitigation actions put into place by the Party, including those targeting energy efficiency, renewable energy and the transport sector.

13. The ERT noted that, during the period 1990–2014, Romania's gross domestic product (GDP) per capita increased by 70.9 per cent, while GHG emissions per GDP and GHG emissions per capita decreased by 70.3 and 49.2 per cent, respectively. These trends are consistent with the economic growth and decrease in GHG emissions following Romania's transition to a market-based economy and its subsequent integration into the EU, coupled with the implementation of mitigation actions by the Party. Table 2 below

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, unless otherwise specified. Values in this paragraph are calculated based on the 2016 inventory submission, version 1.0.

³ Romania reported 1989 as the base year for its GHG emissions and emission trends.

illustrates the emission trends by sector and some of the economic indicators relevant to GHG emissions for Romania.

Table 2
Greenhouse gas emissions by sector and some indicators relevant to greenhouse gas emissions for Romania for the period 1990–2014

Sector	GHG emissions (kt CO ₂ eq)					Change (%)		Share by sector (%)	
	1990	2000	2010	2013	2014	1990–2014	2013–2014	1990	2014
	1. Energy	185 004.71	100 591.77	82 881.97	76 996.24	76 302.13	-58.8	-0.9	73.0
A1. Energy industries	51 412.24	43 452.85	32 259.42	25 452.53	25 062.07	-51.3	-1.5	20.3	22.9
A2. Manufacturing industries and construction	74 624.41	18 830.08	12 867.70	14 015.27	13 770.95	-81.5	-1.7	29.5	12.6
A3. Transport	12 438.59	9 912.57	14 229.86	15 088.30	15 618.78	25.6	3.5	4.9	13.6
A4.–A5. Other	12 667.67	9 407.23	10 686.47	10 990.12	10 496.77	-17.1	-4.5	5.0	9.9
B. Fugitive emissions from fuels	33 861.81	18 989.05	12 838.54	11 450.02	11 353.56	-66.5	-0.8	13.4	10.3
C. CO ₂ transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	28 413.57	17 151.67	12 260.33	10 376.58	10 856.15	-61.8	4.6	11.2	9.4
3. Agriculture	33 473.17	17 373.28	16 271.06	16 860.21	16 844.63	-49.7	-0.1	13.8	15.9
4. LULUCF	-19 382.45	-22 818.31	-18 496.75	-18 232.47	-18 258.18	-5.8	0.1	NA	NA
5. Waste	5 023.36	5 393.96	5 584.37	5 798.94	5 756.73	14.6	-0.7	2.0	5.3
Total GHG emissions without LULUCF	251 914.81	140 510.68	116 997.74	110 031.96	109 759.64	-56.4	-0.2	100.0	100.0
Total GHG emissions with LULUCF	232 532.36	117 692.37	98 500.99	91 799.49	91 501.46	-60.7	-0.3	NA	NA
<i>Indicators</i>									
GDP per capita (thousands 2011 USD using PPP)	11.18	10.25	17.35	18.51	19.10	70.9	3.2	NA	NA
GHG emissions without LULUCF per capita (t CO ₂ eq)	10.86	6.26	5.78	5.51	5.51	-49.2	0.2	NA	NA
GHG emissions without LULUCF per GDP unit (kg CO ₂ eq per 2011 USD using PPP)	0.97	0.61	0.33	0.30	0.29	-70.3	-2.9	NA	NA

Sources: (1) GHG emission data: Romania's 2016 annual inventory submission, version 1.0; (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

14. In its BR2 and CTF tables 2(a)–(f), Romania 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 Party's emission reduction target, such as base year, percentage reduction, period of achievement, gases and sectors covered, GWP values used, contribution of the LULUCF sector, and the use of market-based mechanisms under the Convention and other mechanisms relevant to the achievement of the quantified economy-wide emission reduction target. Further information on the target and the assumptions, conditions and methodologies related to the target is provided in section 3 of the BR2, the report of the technical review of the first biennial report (BR1) and this report (see paras. 20–22 below).

15. Romania reported 1989 as the base year for the description of the quantified economy-wide emission reduction target in the textual part of the BR2 and in CTF tables 2(a) and 2(b). During the review, in response to a question raised by the ERT, Romania clarified that as a Party undergoing transition to a market-based economy, its base year under both the Convention and the Kyoto Protocol is set as 1989. Romania further informed the ERT that under the Doha Amendment to the Kyoto Protocol, the joint emission reduction commitment of the EU (20 per cent below the 1990 level) is based on the sum of base year emissions (i.e. emissions in 1989 in Romania's case) of the EU member States.

16. The ERT, however, noted that as an EU member State, Romania has 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, which uses 1990 as the base year. The ERT recommends that Romania improve the transparency of its reporting by using 1990 as the base year in the description of its quantified economy-wide emission reduction target in the textual part of the BR and CTF tables 2(a) and 2(b) in its next BR submission.

17. The ERT noted that the information reported by Romania on the use of market-based mechanisms under the Convention in the textual part of the BR2 (section 3.5) differs from that reported in CTF table 2(e)I. Although in the textual part of the BR2, Romania indicated that it does not intend to use market-based mechanisms under the Convention to achieve its target, CTF table 2(e)I indicates 532,594,270.00 kilotonnes of carbon dioxide equivalent (kt CO₂ eq) as the possible scale of contributions from market-based mechanisms (carry over units) under the Convention. During the review, Romania confirmed that it does not intend to use units from market-based mechanisms under the Convention to achieve its target and that the value mentioned in CTF table 2(e)I represents the carry over units from the first commitment period of the Kyoto Protocol which have been erroneously reported.

18. The ERT recommends that, in order to enhance the transparency of its reporting, Romania ensure consistency between the information on the use of market-based mechanisms reported in the textual part of the BR and that in the CTF tables by using custom footnotes and/or the notation key "NA" (not applicable) in CTF table 2(e)I in its next BR submission.

19. For Romania, the Convention entered into force on 6 September 1994. Under the Convention, Romania 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. 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.

20. 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 CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ using GWP values from the Intergovernmental Panel on Climate Change 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 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 (known as “operators”) can make use of such units to fulfil their requirements under the EU ETS.

21. The EU 2020 climate and energy package includes the EU ETS and the ESD (see chapter II.C.1 below). Further information on this package is provided in section 4 of the BR2 and in the report of the technical review of the BR1. The EU ETS covers mainly large 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 below the 2005 level by 2020. 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 below the 2005 level by 2020.

22. Under the ESD, Romania has a target to limit the increase in total emissions from sectors covered by the ESD (non-ETS sectors) to 19 per cent above the 2005 level by 2020. National emission targets for non-ETS sectors for 2020 have been translated into binding quantified annual emission allocations (AEAs) for the period 2013–2020. Romania’s AEAs change linearly from 75,630.00 kt CO₂ eq in 2013 to 88,384.87 kt CO₂ eq in 2020.⁴

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

23. This chapter provides information on the review of the reporting by Romania 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

24. In its BR2 and CTF table 3, Romania reported on its progress in the achievement of its target and the mitigation actions, including on policies and measures (PaMs) it has implemented or plans to implement since its sixth national communication (NC6) and BR1 to achieve its target. Romania has provided information on mitigation actions introduced to achieve its target. The BR2 includes information on mitigation actions organized by sector. Further information on the mitigation actions related to the Party’s target is provided in section 4.1 of the BR2.

⁴ European Commission decision 2013/162/EU of 26 March 2013 “on determining 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” and European Commission implementing 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”.

25. In its BR2, Romania provided information showing that no changes have occurred 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 made towards its target since its NC6 and BR1.

26. The ERT noted that the BR2 and CTF table 3 do not include information on the effects of individual mitigation actions. The BR2 provides the explanation that the estimated total effects of implemented and adopted PaMs up to 2035 were calculated for groups of PaMs, as the difference between the GHG emissions in the 'without measures' (WOM) scenario and 'with measures' (WEM) scenario for each group. The estimated total effects of additional PaMs planned to be implemented by 2035 were calculated for groups of PaMs, as the difference between the GHG emissions in the WEM scenario and the 'with additional measures' (WAM) scenario for each group. Romania explained that this was done owing to: lack of information related to the effects of the individual PaMs; the interaction among PaMs; and the difficulty in estimating the effect of multisectoral PaMs.

27. During the review, Romania explained that while it has made every effort to collect data on the impacts of mitigation actions and included all available data in CTF table 3, it has not been able to estimate the effect of each individual mitigation action. While taking note of the explanation provided, the ERT recommends that, in order to enhance the transparency of its reporting in the next BR submission, Romania report information on the effects of individual mitigation actions by making efforts to address the constraints, wherever possible.

28. In its BR2, Romania provided, to the extent possible, detailed information on the assessment of the economic and social consequences of its response measures. In this regard, Romania follows the EU policies and guidelines. In the EU, a wide-ranging impact assessment system has been established for all new policy initiatives. This system analyses both costs and benefits, and addresses all significant economic, social and environmental impacts of potential new initiatives. This approach ensures that potential economic, social and environmental consequences for various stakeholders, both within and outside the EU, are identified and assessed as part of the legislative process.

29. In its BR2, Romania reported on its domestic arrangements established for the process of self-assessment of compliance with emission reductions required by science, and on the progress made in the establishment of national rules for taking action against non-compliance with emission reduction targets. Romania reported that the coordination between the central and local authorities and the self-assessment of compliance by estimating the effects of PaMs and the projections of emissions are very important for the implementation of the ESD in the EU (see para. 21 above). Further, under the EU ETS, economic operators governed by it have to comply with the relevant legislation for non-compliance, which contains provisions for local action against the operators for domestic non-compliance with emission reduction targets. During the review, Romania further clarified that, based on expert opinion, the Party's national climate change policy for the reduction of GHG emissions has had no international impact.

30. Romania performs self-assessment of compliance with emission reductions required by science with the help of studies conducted by research institutions, including the Research and Development National Institute for Environment Protection, a research institute coordinated by the Ministry of National Education and Scientific Research, together with advice from the National Commission on Climate Change.

31. 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 CO₂ 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).

32. 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 N₂O emissions from chemical industries, PFC emissions from aluminium production and CO₂ emissions from industrial processes (since 2013).

33. The ESD became operational in 2013 and covers sectors outside the EU ETS, including 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 EU member States (see para. 22 above).

34. At the national level, Romania introduced policies to achieve its targets under the ESD and domestic emission reduction targets. As an EU member State, Romania has implemented the EU directives and decisions on climate and energy efficiency by transposing them into national PaMs. The key policy framework related to climate change in Romania is the National Strategy for Climate Change 2013–2020, which was approved by the Government of Romania in 2013. This aims to address the GHG emission reduction towards the achievement of the national objectives and GHG emission targets for 2020 taking into account relevant EU policies, such as the EU climate and energy package. The National Strategy for Sustainable Development also contains cross-sectoral mitigation actions that are based on the principles of efficiency and use of the best available technologies in the industrial policies and public procurement, while supporting the improvement of the quality of and access to infrastructure for wastewater treatment.

35. Other key PaMs reported in the BR2 are: the National Energy Strategy for 2007–2020; the National Renewable Energy Action Plan; the second National Action Plan on Energy Efficiency for 2011–2020; the action plan for protection of waters against pollution caused by nitrates from agricultural sources; the National Forestry Strategy 2013–2022; the National Strategy for Waste Management; and the PaMs promoting improvement of the management of solid waste. The implemented and adopted mitigation actions in the energy sector have the greatest mitigation impact by 2020 and 2030, followed by those in the waste and agriculture sectors.

36. In its BR2 and CTF table 3, Romania provided information on planned actions, including the National Rural Development Programme 2014–2020; modernization of the transport system; modernization of the industrial sector; modernization of the agriculture sector; a national action plan for electricity from renewable energy sources; and improvements in the oil and gas sector.

37. Table 3 below provides a concise summary of the key mitigation actions and estimates of their mitigation effects reported by Romania to achieve its target.

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

<i>Sector affected</i>	<i>List of key mitigation actions</i>	<i>Estimate of mitigation impact by 2020 (kt CO₂ eq)^a</i>	<i>Estimate of mitigation impact by 2030 (kt CO₂ eq)^a</i>
Policy framework and cross-sectoral measures	National Strategy for Climate Change 2013–2020	IE	IE
	National Strategy for Sustainable Development: Horizons 2013, 2020 and 2030	IE	IE
	National Energy Strategy for 2007–2020	IE	IE
	EU ETS	IE	IE
	Group of actions for various sectors (services, residential, agriculture) under the WEM/WAM scenarios	320/613	789/836
Energy, including:	Group of actions for fugitive emissions under the WEM/WAM scenarios	1 451/577	1 231/817
	Group of actions for combustion in the energy industry and manufacturing and construction industry sectors under the WEM/WAM scenarios	876/258	1 701/309
Transport	Group of actions for the transport sector under the WEM/WAM scenarios	350/251	558/326
	Modernization of the transport sector	IE	IE
Renewable energy	National Renewable Energy Action Plan	IE	IE
Energy efficiency	The second National Action Plan on Energy Efficiency for 2011–2020	IE	IE
IPPU	Group of actions in the IPPU sector under the WEM/WAM scenarios	90/2	227/15
	Modernization of the industrial sector	IE	IE
Agriculture	Group of actions for the agriculture sector under the	1 644/551	2 066/1 150

<i>Sector affected</i>	<i>List of key mitigation actions</i>	<i>Estimate of mitigation impact by 2020 (kt CO₂ eq)^a</i>	<i>Estimate of mitigation impact by 2030 (kt CO₂ eq)^a</i>
	WEM/WAM scenarios		
	Action plan for protection of waters against pollution caused by nitrates from agricultural sources	IE	IE
LULUCF	National Forestry Strategy 2013–2022	NE	NE
Waste	Group of actions for the waste sector under the WEM/WAM scenarios	1 892/336	2 884/447
	National Strategy for Waste Management	IE	IE
	The improvement of the management of solid waste	IE	IE

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: EU ETS = European Union Emissions Trading System, IE = included elsewhere, IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NE = not estimated, WAM = with additional measures, WEM = with measures.

^a The mitigation impacts of individual mitigation actions are reported together under the total mitigation impacts under the WEM and WAM scenarios of groups of mitigation actions for different sectors. The figures before and after the slash represent mitigation impacts under the WEM and WAM scenarios, respectively. The mitigation impacts of additional PaMs are calculated by comparing the WEM and WAM scenarios.

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

38. Romania reported in its BR2 and CTF tables 4, 4(a)I, 4(a)II and 4(b) its use of units from market-based mechanisms under the Convention and other mechanisms and the contribution from LULUCF to achieving its target. Romania reported in its BR2 that it does not intend to use market-based mechanisms under the Convention or the contribution from the LULUCF sector for the achievement of its target under the Convention. Further relevant information on emissions and removals and the use of units is provided in section 3 of the BR2 and in this report (see paras. 42 and 43 below).

39. The ERT noted that the information reported by Romania on the contribution of LULUCF to progress in the quantified economy-wide emission reduction target in the textual part of the BR2 (section 3.4) differs from that reported in CTF table 4. Although Romania indicated in the textual part of the BR2 that the contribution from the LULUCF sector is not included in the joint EU quantified economy-wide emission reduction target under the Convention, CTF table 4 includes contributions from the LULUCF sector for the years 2010–2012. During the review, in response to a question raised by the ERT, Romania confirmed that it does not intend to use the contribution of the LULUCF sector to achieve its target. The ERT recommends that, in order to enhance the transparency of its reporting, Romania ensure consistency between the information on the contribution from LULUCF in the textual part of the BR and that in CTF table 4, including by using custom footnotes and/or the notation key “NA” in CTF table 4 in its next BR submission.

40. In CTF table 4, Romania reported 1,279,835,099.09 units from market-based mechanisms under the Convention for the year 1989, which Romania considers its base year. During the review, in response to a question raised, Romania informed the ERT that this value was Romania's assigned amount for the first commitment period of the Kyoto Protocol, which was reported by mistake in CTF table 4, and confirmed that it does not intend to use units from market-based mechanisms to achieve its target. Romania also explained that its base year under both the Convention and the Kyoto Protocol is 1989 (see para. 15 above).

41. The ERT noted that the UNFCCC reporting guidelines on BRs do not require reporting of information on the use of units from market-based mechanisms for the base year. It further noted that, as discussed in paragraphs 15 and 16 above, as an EU member State, Romania's base year should be mentioned as 1990 instead of 1989. The ERT recommends that, in order to enhance the transparency of its reporting, Romania not report the information on the use of units from market-based mechanisms under the Convention for the base year and report 1990 as the base year in CTF table 4 in its next BR submission.

42. For 2013, Romania reported in CTF table 4 annual total GHG emissions excluding LULUCF of 110,927.60 kt CO₂ eq, or 56.0 per cent below the 1990 level. In 2013, emissions from the non-ETS sectors relating to the target under the ESD were 68,790.80 kt CO₂ eq.

43. Romania reported that it does not intend to use units from market-based mechanisms under the Convention and noted that the joint EU target under the Convention does not include the contribution from the LULUCF sector (see para. 39 above). Table 4 below illustrates Romania's total GHG emissions, the contribution from 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 Romania towards the achievement of its target

<i>Year</i>	<i>Emissions excluding LULUCF (kt CO₂ eq)</i>	<i>Contribution from LULUCF (kt CO₂ eq)^a</i>	<i>Emissions including contribution from LULUCF (kt CO₂ eq)^b</i>	<i>Use of units from market-based mechanisms (kt CO₂ eq)^c</i>
1990	253 317.69	NA	NA	NA
2010	117 706.91	NA	NA	NA
2011	122 565.99	NA	NA	NA
2012	120 977.39	NA	NA	NA
2013	110 927.60	NA	NA	NA

Sources: Romania's second biennial report and common tabular format tables 1, 4, 4(a)I, 4(a)II and 4(b).

Abbreviations: LULUCF = land use, land-use change and forestry, NA = not applicable.

^a Romania, in common tabular format table 4, reported a contribution from the LULUCF sector. The expert review team did not include these values in the above table as the Party is a European Union (EU) member State, which is bound by the EU-wide unconditional commitment to reduce greenhouse gas emissions by 20 per cent below the 1990 level by 2020, which does not include emissions/removals from LULUCF.

^b Romania, in common tabular format table 4, reported the use of units from the market-based mechanisms under the Convention. The expert review team did not include these values in the above table as during the review the Party explained that this was a mistake and confirmed that it does not intend to use units from the market-based mechanisms under the Convention.

44. To assess the progress towards the achievement of the 2020 target, the ERT noted that Romania's emission reduction target under the Convention for sectors not covered by the EU ETS under the ESD is 19 per cent above the 2005 level. As discussed in chapter II.B above, in 2013, Romania's annual total GHG emissions excluding LULUCF emissions from the sectors not covered by the EU ETS are 9.0 per cent (68,790.81 kt CO₂ eq) below the AEs under the ESD.

45. The ERT noted that Romania is making progress towards its emission reduction target by implementing and planning mitigation actions that are delivering emission reductions. The ERT further noted that the structural changes taking place in Romania's economy and the effects of the global financial crisis also contributed significantly to Romania's progress towards its target.

3. Projections

46. Romania reported in its 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 categories used in the chapter on mitigation actions, and on a gas-by-gas basis for the following GHGs: CO₂, CH₄, N₂O, PFCs, HFCs and SF₆. Projections are also provided in an aggregated format for each sector as well as for a Party total, using GWP values from the AR4.

47. The ERT noted that in the BR2 and CTF tables 6(a)–(c), Romania did not report, to the extent possible, emission projections related to fuel sold to ships and aircraft engaged in international transport separately. It also did not clarify whether or not these emission projections were included in the totals. During the review, Romania confirmed that emission projections related to fuel sold to ships and aircraft engaged in international transport are not included in the totals and provided a spreadsheet with detailed information on these emissions.

48. The ERT recommends that, in order to enhance the transparency of its reporting, Romania, in its next BR submission, report separately, to the extent possible, emission projections related to fuel sold to ships and aircraft engaged in international transport while providing transparent textual information on their exclusion in the BR.

49. In its BR2, Romania did not present information on the factors and activities taken into account in projection calculations for each sector. During the review, in response to a question raised by the ERT, Romania provided an additional document with a detailed description of factors and activities taken into account in the projections for the energy, industrial processes and product use, agriculture, waste and LULUCF sectors. This information included assumptions used for emission projections under the WOM, WEM and WAM scenarios for these sectors, including: economic growth; demographic development; social development; structural adjustment of the economy and industry; technological modernization and reduction of energy intensity in industry, agriculture and construction; development and modernization of the transport and services sectors; and development and modernization of housing conditions.

50. The ERT recommends that, in order to enhance the completeness of its reporting, Romania include, to the extent possible, a detailed description of the factors and activities taken into account in the projection calculations for each sector in its next BR submission.

51. In addition to the WEM scenario, Romania reported the WAM and WOM scenarios in the BR2 and CTF tables 6(b) and 6(c). The projections are presented by sector and by gas in the same way as for the WEM scenario for 2020 and 2030.

52. The BR2 does not provide emission projections for the indirect GHGs carbon monoxide, nitrogen oxides, non-methane volatile organic compounds and sulphur oxides.

The ERT encourages Romania to report in its next BR submission emission projections for the above-mentioned GHGs.

53. Romania did not provide information in its BR2 on models or approaches used for GHG emission projections. During the review, in response to a question raised by the ERT, Romania provided a document that included information on: changes in the assumptions, methodologies, models and approaches since the NC6/BR1; the key variables and assumptions used in the preparation of the projection scenarios for all sectors; and synergies and overlaps between models and approaches used.

54. The ERT encourages Romania to include in its next BR submission information on models or approaches used for GHG emission projections, including: type of models or approaches; original purpose of the model and modifications carried out to fit climate change purposes; a summary of strengths and weaknesses of the model or approach used per sector; and synergies and overlaps between models or approaches used.

55. Romania did not report the sensitivity analysis for the projections. During the review, in response to a question raised by the ERT, Romania provided information on the methodology followed and the results of the sensitivity analysis for the projections (see para. 63 below). The ERT encourages Romania to report, in its next BR, the results of the sensitivity analysis for projections.

56. Romania did not provide diagrams showing unadjusted inventory data and projections under the WEM scenario for the 1990–2020 period. During the review, in response to a question raised by the ERT, Romania provided a diagram showing unadjusted inventory data and emission projections under the WEM, WOM and WAM scenarios. The ERT encourages Romania to include in its next BR submission diagrams showing unadjusted inventory data and emission projections under the WEM scenario.

57. Romania did not provide detailed information on changes made in the assumptions, methods used and results of projections since its NC6/BR1. The BR2 states that there have been no changes in the model or methodologies used for projections. However, during the review, in response to a question raised by the ERT, Romania provided information on changes in the assumptions and the methods used in the preparation of the projections since the submission of its NC6/BR1 (see para. 59 below). According to the information provided, the updated GHG projections took into account updated data on primary indicators relating to macroeconomic parameters (e.g. GDP, gross value added), energy (e.g. energy intensity) and demography (e.g. population, number of dwellings). The ERT encourages Romania to include in its next BR detailed information on changes made in assumptions, methods used and results of projections since its most recent national communication.

Overview of projection scenarios

58. The WEM scenario reported by Romania includes implemented and adopted PaMs up to 2015. Romania also reported on a WAM scenario, which includes planned PaMs, and a WOM scenario, which excludes all PaMs implemented, adopted or planned after 2013. Romania provided a definition of its scenarios, explaining that its WEM scenario includes policies that have been implemented and adopted, while its WAM scenario includes planned policies. 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”.

Methodology and changes since the previous submission

59. The methodology used in the BR2 is identical to that used for the preparation of the emission projections for the NC6/BR1. During the review, Romania provided supporting information further explaining the methodologies and the changes made since the NC6/BR1. These include the use of: the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* and the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* in the calculations; GWP values in the AR4; and updated activity data and macroeconomic indicators. Furthermore, the information used for the preparation of emission projections in the BR2 takes into account updated information from the National Commission for Prognosis (two reports, the projection of main macroeconomic indicators and forecast for energy balance⁵); the National Institute of Statistics (the Romanian Statistical Yearbook⁶); the National Power Grid Company Transelectrica SA;⁷ and the Regulatory Authority for Energy (annual reports⁸).

60. Since emissions from the energy sector accounted for 69.4 per cent of the total GHG emissions (excluding LULUCF) of Romania in 2013, the emission projections have been made separately for the energy and non-energy sectors of the country. The Energy and Power Evaluation Program model has been used for the projections for the energy sector. The projections for the non-energy sectors, including forestry, agriculture, industrial processes and product use, and waste, have been estimated with the help of spreadsheet-based models using activity data and emission factors. Romania further informed the ERT that the models used do not take into account synergies between sectors and policies.

61. To prepare its projections, Romania relied on the following key underlying assumptions: GDP growth rate, population growth, number of households and international oil, coal and gas prices. These variables and assumptions are reported in CTF table 5 and have been updated on the basis of the most recent economic developments known at the time of the reporting on projections. In response to a question raised by the ERT during the review, Romania stated that projections have been made taking into consideration the expected socioeconomic and demographic development of the country consistent with a global development scenario. Romania further explained that owing to the effects of the economic crisis at the national and global levels, the assumptions regarding macroeconomic indicators underpinning the projections have high uncertainties in the forecast horizon to 2035.

62. For the projections, Romania assumed a decrease in GDP growth rate from 3.2 per cent in 2015 to 2.0 per cent in 2030. Population was assumed to decrease from 19,909,000 inhabitants in 2015 to 19,003,000 in 2030, while the number of households was assumed to increase from 8,500,000 in 2015 to 8,620,000 in 2030. Based on projections by the EU PROMETHEUS model,⁹ international oil, coal and gas prices were assumed to increase by 20.7, 61.5 and 30.5 per cent, respectively, in the 2015–2030 period.

63. Romania conducted sensitivity analyses with respect to economic development owing to its significant influence on emissions from the energy sector. The analysis of projected GHG emissions was carried out for maximum and minimum values of GDP growth rate for the years 2015, 2020, 2025, 2030 and 2035. The results indicate that in 2020, under the scenarios corresponding to minimum and maximum values of GDP growth rates, CO₂ emissions from fuel combustion are projected to be lower by 2.5 per cent

⁵ See <<http://www.cnp.ro/en/prognoze>>.

⁶ See <<http://www.insse.ro/cms/en>>.

⁷ See <<http://www.transelectrica.ro/en/web/tel/home>>.

⁸ See <<http://www.anre.ro/en>>.

⁹ See <<http://www.prometheus-energy.eu/>>.

(71,545.10 kt CO₂ eq) and higher by 8.7 per cent (79,787.60 kt CO₂ eq), respectively, relative to the reference scenario. In 2030, the CO₂ emissions from fuel combustion in the minimum and maximum scenarios are projected to be lower by 3.4 per cent and higher by 9.7 per cent, respectively, relative to the reference scenario.

Results of projections

64. Romania's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 126,850.46 kt CO₂ eq and 146,757.62 kt CO₂ eq, respectively, under the WEM scenario, which represents a decrease of 49.9 per cent and 42.1 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 51.0 per cent and 44.2 per cent and amount to around 124,039.83 kt CO₂ eq and 141,475.56 kt CO₂ eq, respectively. The 2020 projections suggest that Romania will continue contributing to the achievement of the EU target under the Convention (see para. 21 above).

65. Romania's target for the emissions from sectors covered by the ESD (non-ETS sectors) is to limit its emission growth to 19 per cent above the 2005 level by 2020 (see para. 22 above). Romania's AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 68,790.81 kt CO₂ eq in 2013 to 83,153.48 kt CO₂ eq in 2020. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 77,047.58 kt CO₂ eq by 2020. Under the WAM scenario, Romania's emissions from non-ETS sectors in 2020 are projected to be 74,396.71 kt CO₂ eq. The projected level of emissions from the non-ETS sectors under the WEM and WAM scenarios is 7.3 per cent and 10.5 per cent, respectively, below the AEAs allocated for 2020. The ERT noted that this suggests that Romania expects to meet its ESD target under the WEM and WAM scenarios (see para. 22 above).

66. In addition to its target for non-ETS sectors, according to its National Renewable Energy Action Plan, Romania has a target of a 24.0 per cent share of renewable energy sources (RES) in the final energy consumption by 2020. Romania has also established a target for the share of biofuels in gasoline and diesel of 10 per cent by 2020. Romania's RES target translates into an increase in electricity generated from RES from 23.6 TWh in 2013 to 31.4 TWh in 2020, with hydropower and wind power projected to contribute 63.0 per cent and 26.8 per cent, respectively. The projections indicate that Romania expects to meet its domestic target for share of RES in the final energy consumption as it has already achieved a 23.4 per cent contribution of RES to final energy consumption in 2012.

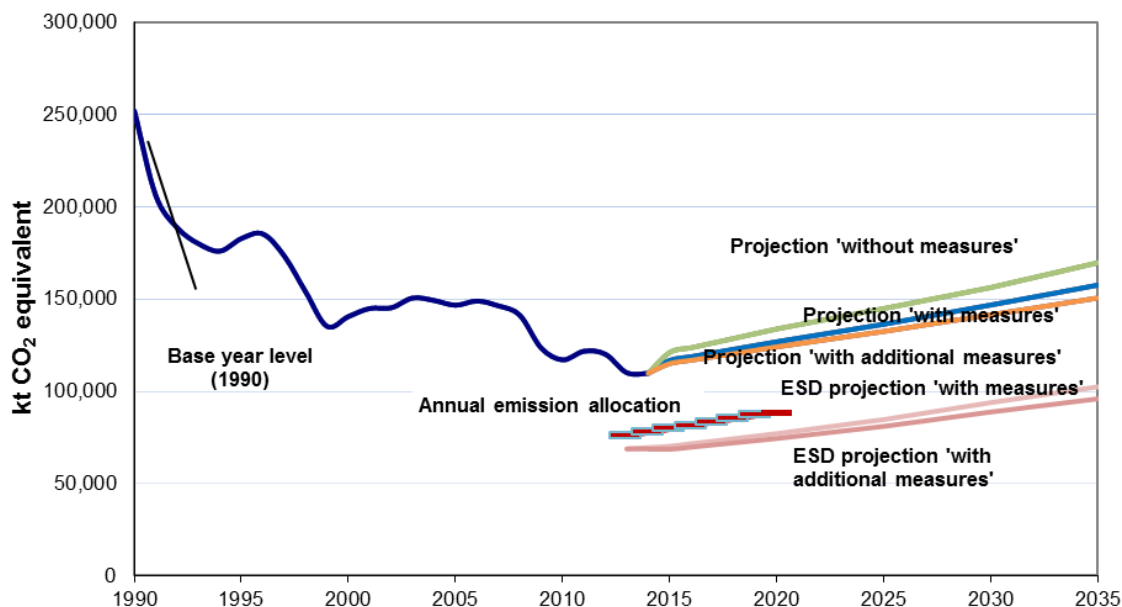
67. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the energy, agriculture and industry/industrial processes sectors, amounting to 99,880.46 kt CO₂ eq (54.0 per cent), 15,080.76 kt CO₂ eq (43.2 per cent) and 11,983.54 kt CO₂ eq (42.2 per cent), respectively, between 1990 and 2020. The pattern of projected emissions reported for 2030 under the same scenario remains the same.

68. In 2020, the most significant reductions are projected for CO₂, CH₄ and PFC emissions: 86,416.38 kt CO₂ eq (49.9 per cent), 33,077.87 kt CO₂ eq (53.2 per cent) and 2,445.74 kt CO₂ eq (99.6 per cent), respectively, between 1990 and 2020. The pattern of projected emissions reported for 2030 under the same scenario remains the same with total contributions of CO₂, CH₄ and PFCs of 78,571.30 kt CO₂ eq (45.4 per cent), 27,440.25 kt CO₂ eq (44.2 per cent) and 2,445.74 kt CO₂ eq (99.6 per cent), respectively, between 1990 and 2030.

69. Under the WAM scenario, the pattern of emission reductions by 2020 and 2030 by sector and by gas remains the same, with the same sectors and gases being the main contributors.

70. The projected emission levels under the different scenarios and Romania’s quantified economy-wide emission reduction target are presented in the figure below.

Greenhouse gas emission projections by Romania



Sources: (1) Data for the years 1990–2014: Romania’s 2016 annual inventory submission, version 1.0; total GHG emissions excluding land use, land-use change and forestry; (2) Data for the years 2015–2035: Romania’s second biennial report and additional information provided by Romania during the review; total GHG emissions excluding land use, land-use change and forestry; updated projections provided by the Party during the review.

Abbreviations: ESD = effort-sharing decision; GHG = greenhouse gas.

Assessment of aggregate effects of policies and measures

71. In its BR2, Romania explained that the estimated total effect of implemented and adopted PaMs up to 2035 was calculated for seven groups of mitigation actions, as the difference between the GHG emissions in the WOM and the WEM scenarios (see paras. 26 and 35–37 above). The implementation of mitigation measures under the WEM and WAM scenarios is projected to result in a reduction of 5.2 per cent and 7.3 per cent, respectively, in total emissions in 2020. For 2030, the projections indicate a 6.0 per cent and 9.4 per cent reduction under the WEM scenario and the WAM scenario, respectively.

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

72. Romania is not a Party included in Annex II to the Convention and is therefore not obliged to adopt measures and fulfil obligations as defined in Article 4, paragraphs 3, 4 and 5, of the Convention. However, in its BR2, Romania provided information on its provision of support to developing country Parties. The ERT noted that in 2014, Romania provided a grant of USD 35,564.58 to the community of Tsintskaro, Georgia, for an adaptation project titled “Disaster risk reduction – a way to sustainable development”. The ERT commends

Romania for reporting this information and suggests that it continue to do so in future BR submissions.

III. Conclusions

73. The ERT conducted a technical review of the information reported in the BR2 and CTF tables of Romania 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 the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; progress made by Romania in achieving its target; and the Party's provision of support to developing country Parties.

74. Romania's total GHG emissions excluding LULUCF related to its quantified economy-wide emission reduction target were estimated to be 56.4 per cent below its 1990 level, whereas total GHG emissions including LULUCF are 60.7 per cent below its 1990 level in 2014. The emission decrease was driven by a decrease in CO₂ emissions of 57.6 per cent (excluding LULUCF) between 1990 and 2014. Over the same period, CH₄ emissions decreased by 54.0 per cent, while N₂O emissions decreased by 55.5 per cent.

75. Romania's emissions (excluding LULUCF) decreased by 55.1 per cent in the period 1989–1999 as a result of the reduction in energy consumption stemming from the decline of the industrial sector following Romania's transition from a centralized economy to a market-based one. GHG emissions (excluding LULUCF) increased slowly in the period 2000–2007 owing to economic growth. GHG emissions (excluding LULUCF) have, however, decreased by 22.3 per cent in the period 2008–2014 as a consequence of the global economic crisis and the mitigation actions put into place by the Party, including those targeting energy efficiency, renewable energy and the transport sector.

76. Under the Convention, Romania 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 CO₂, CH₄, N₂O, HFCs, PFCs and SF₆, 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 units to fulfil their requirements under the EU ETS.

77. Under the ESD, Romania has a target to limit the emission growth to 19 per cent above the 2005 level by 2020. Romania's AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 75,630.01 kt CO₂ eq in 2013 to 88,384.87 kt CO₂ eq in 2020. In addition, Romania has a domestic target of a 24.0 per cent share of RES in the final consumption of energy by 2020. The projections indicate that Romania expects to meet its domestic target as in 2012, Romania had already achieved a 23.4 per cent contribution of RES to the final energy consumption.

78. Romania's main policy framework relating to energy and climate change is the National Strategy for Climate Change 2013–2020. The National Strategy for Sustainable Development also contains cross-sectoral mitigation actions. Other key policies reported in the BR2 are: the National Energy Strategy for 2007–2020; the National Renewable Energy Action Plan; the second National Action Plan on Energy Efficiency for 2011–2020; the action plan for protection of waters against pollution caused by nitrates from agricultural

sources; the National Forestry Strategy 2013–2022; the National Strategy for Waste Management; and the PaMs promoting improvement of the management of solid waste.

79. Romania has reported mitigation impacts of mitigation actions in each sector under the WEM scenario by comparing the projected emissions under the WEM and WOM scenarios. The mitigation impacts of mitigation actions under the WAM scenario are calculated by comparing the projected emissions under the WAM and WEM scenarios. The adopted and implemented mitigation actions in the energy sector have the greatest mitigation impact by 2020 and 2030, followed by those in the waste and agriculture sectors.

80. For 2013, Romania reported in CTF table 4 total GHG emissions excluding LULUCF at 110,927.60 kt CO₂ eq. Romania reported that it does not intend to use units from market-based mechanisms to achieve its target.

81. The GHG emission projections provided by Romania in its BR2 include those for the WOM, WEM and WAM scenarios. Under these three scenarios, emissions are projected to be 47.2 per cent, 49.9 per cent and 51.0 per cent, respectively, below the 1990 level in 2020. On the basis of the reported information, the ERT concluded that Romania expects to meet its 2020 target under the WEM, WAM and WOM scenarios.

82. Romania's target for the emissions from sectors covered by the ESD (non-ETS sectors) is to limit its emission growth at 19 per cent above the 2005 level by 2020. Romania's AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 68,790.81 kt CO₂ eq in 2013 to 83,153.48 kt CO₂ eq in 2020. Under the WEM scenario, emissions from non-ETS sectors are estimated to reach 77,047.58 kt CO₂ eq by 2020. Under the WAM scenario, Romania's emissions from non-ETS sectors in 2020 are projected to be 74,396.71 kt CO₂ eq. The projected level of emissions under the WEM and WAM scenarios is 7.3 and 10.5 per cent, respectively, below the AEAs allocated for 2020. The ERT noted that this suggests that Romania expects to meet the target for non-ETS sectors under both the WEM and the WAM scenario.

83. The ERT noted that Romania is making progress towards its emission reduction target by implementing mitigation actions that deliver emission reductions. On the basis of the results of the projections for 2020 under the WEM and WAM scenarios, the ERT further noted that owing to the structural changes taking place in Romania's economy coupled with the effects of the global economic crisis, the Party is in a position to achieve its target without additional mitigation actions and may significantly overachieve its emission reduction target by 2020.

84. In the course of the review, the ERT formulated the following recommendations for Romania to improve its adherence to the UNFCCC reporting guidelines on BRs in its next BR:¹⁰

- (a) Improve the completeness of its reporting by:
 - (i) Reporting the information on changes in GHG emissions from the base year to the latest year reported in CTF tables 1 and 1(a)–(d) (see para. 8 above);
 - (ii) Providing information on factors and activities taken into account in the projection calculations for each sector (see para. 50 above);
- (b) Improve the transparency of its reporting by:
 - (i) Ensuring consistency in the information on GHG emission trends between the textual part of the BR and CTF tables 1 and 1(a)–(d) (see para. 9 above);

¹⁰ The recommendations are given in full in the relevant chapters of this report.

- (ii) Using 1990 as the base year in the description of its quantified economy-wide emission reduction target in CTF tables 2(a) and 2(b) (see para. 16 above);
- (iii) Ensuring consistency between the information on the use of market-based mechanisms reported in the textual part of the BR and that in CTF table 2(e)I by using custom footnotes and/or the notation key “NA” in CTF table 2(e)I in its next BR submission (see para. 18 above);
- (iv) Reporting information on the effects of individual mitigation actions by making efforts to address the constraints, wherever possible (see para. 27 above);
- (v) Ensuring consistency between the information on the contribution from LULUCF in the textual part of the BR and that in the CTF tables, including by using custom footnotes and/or the notation key “NA” in CTF table 4 (see para. 39 above);
- (vi) Not reporting the quantity of units from market-based mechanisms under the Convention for the base year and reporting 1990 as the base year in CTF table 4 (see para. 41 above);
- (vii) Reporting separately, to the extent possible, emission projections related to fuel sold to ships and aircraft engaged in international transport and providing transparent information on their exclusion in the textual part of the BR (see para. 48 above).

Annex

Documents and information used during the review

A. Reference documents

“UNFCCC biennial reporting guidelines for developed country Parties”. Annex I 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 I 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/ROU. Report on the individual review of the annual submission of Romania submitted in 2014. Available at
<<http://unfccc.int/resource/docs/2015/arr/rou.pdf>>.

FCCC/IDR.6/ROU. Report of the technical review of the sixth national communication of Romania. Available at <<http://unfccc.int/resource/docs/2015/idr/rou06.pdf>>.

FCCC/TRR.1/ROU. Report of the technical review of the first biennial report of Romania. Available at <<http://unfccc.int/resource/docs/2015/trr/rou01.pdf>>.

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

2016 greenhouse gas inventory submission of Romania. Available at
<http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/9492.php>.

Sixth national communication of Romania. Available at
<http://unfccc.int/national_reports/annex_i_natcom/submitted_natcom/items/7742.php>.

First biennial report of Romania. Available at
<http://unfccc.int/national_reports/biennial_reports_and_iar/submitted_biennial_reports/items/9356.php>.

Common tabular format tables of the first biennial report of Romania. Available at
<http://unfccc.int/national_reports/biennial_reports_and_iar/submitted_biennial_reports/items/9356.php>.

Second biennial report of Romania. Available at
<http://unfccc.int/national_reports/biennial_reports_and_iar/submitted_biennial_reports/items/7550.php>.

Common tabular format tables of the second biennial report of Romania. Available at <http://unfccc.int/national_reports/biennial_reports_and_iar/submitted_biennial_reports/items/7550.php>.

B. Additional information used during the review

Responses to questions during the review were received from Mr. Sorin Deaconu (Ministry of Environment, Waters and Forests), including additional material provided by Romania.
