



**Framework Convention on
Climate Change**

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**Report of the in-depth review of the fifth national
communication of Romania**

Parties included in Annex I to the Convention are requested, in accordance with decision 10/CP.13, to submit a fifth national communication to the secretariat by 1 January 2010. In accordance with decision 8/CMP.3, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol shall include in their fifth national communications supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. In accordance with decision 15/CMP.1, these Parties shall start reporting the information under Article 7, paragraph 1, of the Kyoto Protocol with the inventory submission due under the Convention for the first year of the commitment period. This includes supplementary information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol. This report presents the results of the in-depth review of the fifth national communication of Romania conducted by an expert review team in accordance with the relevant provisions of the Convention and Article 8 of the Kyoto Protocol.

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I. Introduction and summary

A. Introduction

1. For Romania, the Convention entered into force on 6 September 1994 and the Kyoto Protocol on 16 February 2005. Under the Kyoto Protocol, Romania committed itself to reducing its greenhouse gas (GHG) emissions by 8 per cent compared with the base year¹ level during the first commitment period from 2008 to 2012.

2. This report covers the in-country in-depth review (IDR) of the fifth national communication (NC5) of Romania, coordinated by the UNFCCC secretariat, in accordance with the guidelines for review under Article 8 of the Kyoto Protocol (decision 22/CMP.1). The review took place from 16 to 21 May 2011 in Bucharest, Romania, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Joseph Baffoe (Ghana), Mr. Christo Christov (Bulgaria), Mr. Didier Goetghebuer (Belgium) and Ms. Valentina Idrissova (Kazakhstan). Mr. Baffoe and Mr. Goetghebuer were the lead reviewers. The review was coordinated by Mr. Roman Payo (UNFCCC secretariat).

3. During the IDR, the expert review team (ERT) examined each section of the NC5. The ERT also evaluated the supplementary information provided by Romania as a part of the NC5 in accordance with Article 7, paragraph 2, of the Kyoto Protocol. In addition, the ERT reviewed the information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol, which was provided by Romania in its 2011 annual submission under Article 7, paragraph 1, of the Kyoto Protocol.

4. In accordance with decision 22/CMP.1, 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.

B. Summary

5. The ERT noted that Romania's NC5 complies broadly with 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" (hereinafter referred to as the UNFCCC reporting guidelines). As required by decision 15/CMP.1, supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol² is provided in the NC5. Romania considered some of the recommendations provided in the report of the centralized in-depth review of the fourth national communication (NC4) of Romania.³ The ERT commends Romania for its improved reporting.

6. The supplementary information on the minimization of adverse impacts referred to in paragraph 3 above is transparent and complete, and was provided on time. During the review, Romania provided further relevant information (see paras. 99 and 100 below).

¹ "Base year" refers to the base year under the Kyoto Protocol, which is 1989 for all gases. The base year emissions include emissions from sectors/source categories listed in Annex A to the Kyoto Protocol.

² Decision 15/CMP.1, annex, chapter II.

³ FCCC/IDR.4/ROU.

1. Completeness

7. The NC5 covers all sections required by the UNFCCC reporting guidelines and most of the supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol (see para. 98 below). However, the NC5 does not include some of the information required by the UNFCCC reporting guidelines on policies and measures (PaMs) (see para. 29 below), projections of GHG emissions (see paras. 64 and 65 below), vulnerability assessment, climate change impacts and adaptation measures (see para. 88 below) and research and systematic observation (see para. 91 below). The ERT recommends that Romania enhance the completeness of its reporting by providing this information in its next national communication.

2. Transparency

8. The ERT acknowledged that Romania's NC5, including supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol, is well-structured and concise. The NC5 is structured following the outline contained in the annex to the UNFCCC reporting guidelines. In the course of the review, the ERT formulated a number of recommendations that could help Romania to further increase the transparency of its reporting with regard to national circumstances (see para. 11 below) and the minimization of adverse impacts (see para. 61 below).

3. Timeliness

9. The NC5 was submitted on 22 January 2010, after the deadline of 1 January 2010 mandated by decision 10/CP.13. Romania submitted a second version of the NC5 on 15 February 2010. The ERT noted with concern the delay in the submission of the NC5.

II. Technical assessment of the reviewed elements

A. National circumstances relevant to greenhouse gas emissions and removals, including legislative arrangements and administrative procedures

10. In its NC5, Romania has provided a concise description of its national circumstances and has elaborated on the framework legislation and key policy documents on climate change. Further technical assessment of the institutional and legislative arrangements for the coordination and implementation of PaMs is provided in chapter II.B.1 of this report.

1. National circumstances

11. The NC5 provides a description of Romania's national circumstances, how these national circumstances affect GHG emissions and removals in Romania and how changes in the national circumstances affect GHG emissions and removals over time in the country. Information is provided on the government structure, population, geography, climate, economy and relevant economic sectors. However, the ERT noted that the information provided on land use, land-use change and forestry (LULUCF) is limited. The ERT recommends that Romania report this information more transparently in its next national communication. The ERT noted that the restructuring of economic activity was the main driver of the Party's emission trends in the 1990s and that, since 2000, the emission trends have been defined by the new economic structure. Table 1 illustrates the national circumstances of Romania by providing some indicators relevant to GHG emissions and removals.

12. Romania is a constitutional republic, administratively divided into 41 counties and one municipality (Bucharest, the capital). The 41 counties are divided into 2,686 communes and 265 cities and municipalities. The Constitution established a President and a bicameral Parliament. The Government is led by the Prime Minister, who is first appointed by the President and then ratified by the Parliament.

13. The overall responsibility for climate change policymaking in Romania lies with the Ministry of Environment and Forests, although a number of other ministries and national institutions are involved in the implementation of this policy. The implementation of the Kyoto Protocol is underpinned by the National Strategy on Climate Change (NSCC) 2005–2007 and its plan of implementation, the National Action Plan on Climate Change (NAPCC) (see paras. 31 and 37 below). Further legislative arrangements and administrative procedures, including those for the national system and the national registry, are presented in sections II.A.2, II.A.3 and chapter II.B of this report.

14. In accordance with Article 4, paragraph 6, of the Convention and decision 9/CP.2, Romania, as a Party with an economy in transition, has chosen to use 1989 as its base year.

Table 1

Indicators relevant to greenhouse gas emissions and removals for Romania

Indicator	1989	1995	2000	2005	Change (%)			
					2009/1989–2000	2000–2009	1989–2009	
Population (million)	23.15	22.68	22.44	21.63	21.51	–3.1	–4.1	–7.1
GDP (2000 USD billion using PPP)	166.36	141.03	132.28	174.57	218.09	–20.5	64.9	31.1
TPES (Mtoe)	69.18	46.28	36.19	38.29	39.38	–47.7	8.8	–43.1
GDP per capita (2000 USD thousand using PPP)	7.19	6.22	5.89	8.07	10.14	–18.0	72.0	41.1
TPES per capita (toe)	2.99	2.04	1.61	1.77	1.83	–46.0	13.5	–38.7
GHG emissions without LULUCF (Mt CO ₂ eq)	284.48	190.04	143.95	154.85	128.75	–49.4	–10.6	–54.7
GHG emissions with LULUCF (Mt CO ₂ eq)	262.76	154.97	113.97	125.71	104.18	–56.6	–8.6	–60.4
CO ₂ emissions per capita (t)	8.35	5.77	4.31	4.91	4.01	–48.4	–7.1	–52.0
CO ₂ emissions per GDP unit (kg per 2000 USD using PPP)	1.16	0.93	0.73	0.61	0.40	–37.0	–46.0	–66.0
GHG emissions per capita (t CO ₂ eq)	12.29	8.38	6.41	7.16	5.98	–47.8	–6.7	–51.3
GHG emissions per GDP unit (kg CO ₂ eq per 2000 USD using PPP)	1.71	1.35	1.09	0.89	0.59	–36.4	–45.8	–65.5

Sources: (1) GHG emissions data: Romania's 2011 GHG inventory submission (version 3.1) submitted on 15 September 2011; (2) Population, GDP and TPES data: International Energy Agency.

Note: The ratios per capita and per GDP unit are calculated relative to GHG emissions without LULUCF; the ratios are calculated using the non-rounded values and may therefore differ from a ratio calculated with the rounded numbers provided in the table.

Abbreviations: GDP = gross domestic product, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry, PPP = purchasing power parity, TPES = total primary energy supply.

15. The NC5 provides a summary of information on GHG emission trends for the period 1989–2007. This information is consistent with the 2009 national GHG inventory submission. Summary tables, including trend tables for emissions in carbon dioxide equivalent (CO₂ eq) (given in the common reporting format (CRF)), are also provided in an annex to the NC5. During the review, the ERT assessed the Party’s recently submitted 2011 annual submission and has reflected its findings in this report.

16. Total GHG emissions⁴ excluding net emissions and removals from LULUCF decreased by 54.7 per cent between 1989 and 2009, while total GHG emissions including net emissions and removals from LULUCF decreased by 60.4 per cent. The decrease was driven by carbon dioxide (CO₂) emissions, which decreased by 55.4 per cent over that period, while emissions of methane (CH₄) and nitrous oxide (N₂O) decreased by 49.9 per cent and 53.6 per cent, respectively. Emissions of fluorinated gases (F-gases) (namely perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF₆)) accounted for 1.3 per cent of total GHG emissions in 1989 and 0.03 per cent in 2009. Emissions per capita have been reduced by half during the period 1989–2009.

17. Trends in total GHG emissions were mostly underpinned by GHG emission trends in the energy and industrial processes sectors, which were driven by the decrease in industrial output and related decrease in energy consumption as a result of the restructuring of the economy in the 1990s. The agriculture sector also experienced a significant decrease in emissions during this period. An analysis of the key drivers of the GHG emission trends in each sector is provided in chapter II.B of this report. Table 2 provides an overview of GHG emissions by sector from the base year to 2009.

Table 2
Greenhouse gas emissions by sector in Romania, 1989–2009

Sector	GHG emissions (Mt CO ₂ eq)						Change (%)		Shares ^a by sector (%)	
	1989	1995	2000	2005	2008	2009	1989–2009	2008–2009	1989	2009
	1. Energy	188.41	132.21	98.09	104.00	101.50	87.54	-53.5	-13.8	66.2
A1. Energy industries	106.31	67.39	46.81	46.43	46.25	39.34	-63.0	-14.9	37.4	30.6
A2. Manufacturing industries and construction	37.55	26.80	17.69	20.76	17.20	11.82	-68.5	-31.3	13.2	9.2
A3. Transport	5.82	9.67	10.98	12.43	15.33	15.27	162.6	-0.4	2.0	11.9
A4.–A5. Other	10.54	9.79	9.11	11.64	10.86	10.55	0.1	-2.9	3.7	8.2
B. Fugitive emissions	28.19	18.57	13.50	12.74	11.86	10.56	-62.5	-11.0	9.9	8.2
2. Industrial processes	42.75	23.62	17.63	19.09	18.13	11.36	-73.4	-37.3	15.0	8.8
3. Solvent and other product use	0.65	0.23	0.22	0.27	0.14	0.12	-81.1	-9.5	0.2	0.1
4. Agriculture	49.75	30.54	23.26	26.57	25.64	25.21	-49.3	-1.7	17.5	19.6
5. LULUCF	-21.72	-35.07	-29.98	-29.13	-26.87	-24.57	13.1	-8.6	-7.6	-19.1
6. Waste	2.92	3.44	4.75	4.92	4.49	4.51	54.6	0.5	1.0	3.5
GHG total with LULUCF	262.76	154.97	113.97	125.71	123.03	104.18	-60.4	-15.3	–	–
GHG total without LULUCF	284.48	190.04	143.95	154.85	149.90	128.75	-54.7	-14.1	100.0	100.0

Source: Romania’s 2011 GHG inventory submission (version 3.1) submitted on 15 September 2011.

⁴ In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO₂ eq excluding LULUCF, unless otherwise specified.

Note: The changes in emissions and the shares by sector are calculated using the non-rounded values and may therefore differ from values calculated with the rounded numbers provided in the table.

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

^a The shares of sectors are calculated relative to GHG emissions without LULUCF; for the LULUCF sector, the negative values indicate the share of GHG emissions that was offset by GHG removals through LULUCF.

18. The level of total GHG emissions in Romania has remained well below the 1989 level during the period 1990–2009. Total GHG emissions decreased by 27.7 per cent between 1989 and 1991, triggered by the transition from a centralized to a market economy and, as a result, the disappearance of, or decrease in, activity in energy-intensive industries. The decrease in GHG emissions continued, at a slower rate, until 1994 (reaching 35.6 per cent below the 1989 level). The country's economy began to grow thereafter, driving up the level of total GHG emissions until 1996 (to 31.0 per cent below the 1989 level), but the entry into operation of the first nuclear reactor of the Cernavoda plant in 1996 then drove the level of total GHG emissions down until 1999 (to 50.1 per cent below the 1989 level, the lowest level during the period 1989–2008), despite the increase in industrial output and related increase in electricity demand. Economic growth partially offset the effect of the introduction of the first nuclear reactor, leading to an increase in total GHG emissions until 2003 (to 43.3 per cent below the 1989 level). Total GHG emissions then remained at broadly the 2003 level (160 Mt CO₂ eq) during the period 2004–2006, but declined from 2007 (when a second nuclear reactor entered into operation), reaching, in 2009, their lowest level since 1989 (at 54.7 per cent below the 1989 level), driven by the impact from the global financial and economic crisis.

2. National system

19. In accordance with decision 15/CMP.1, Romania has provided in its NC5 a description of how its national system is performing the general and specific functions defined in the guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol (decision 19/CMP.1). The description includes all the elements required by decision 15/CMP.1.

20. The NC5 does not provide a description of the national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, of the Kyoto Protocol and elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contribute to the conservation of biodiversity and the sustainable use of natural resources. During the review, Romania explained that the Biodiversity Strategy drafted in 1996 and updated in 2000, as well as the Forest Law approved in 2008 and the National Strategic Plan for Agriculture and Rural Development (NSPARD) 2007–2013 (see paras. 57, 58 and 83 below) form the pillars of the Party's policy on the conservation of biodiversity and the sustainable use of natural resources. The ERT recommends that Romania include this information in its next national communication. However, the ERT notes that the Biodiversity Strategy has never been officially approved.

21. During the review, Romania provided additional information on the national system, elaborating on the institutional and legislative arrangements, and on the preparation and management of the different sectors of the GHG inventory.

22. The ERT took note of the recommendations made in the report of the individual review of the 2010 annual submission of Romania⁵ (2010 ARR). The ERT noted the conclusion of the 2010 ARR, which states that the national system is not performing all of

⁵ FCCC/ARR/2010/ROU.

the specific functions of inventory preparation as required by the guidelines for national systems under Article 5, paragraph 1, of the Kyoto Protocol (decision 19/CMP.1). The ERT reiterates the recommendation made in the 2010 ARR that Romania take immediate remedial action to strengthen its national system. The ERT notes that, at the time of the preparation and publication of this report, the question of implementation regarding the national system of Romania, identified in the 2010 ARR, remains unresolved.

3. National registry

23. In its NC5, Romania has provided information on its national registry, including a description of how its national registry performs the functions defined in the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1 and how it complies with the requirements of the technical standards for data exchange between registry systems.

24. The ERT took note of the conclusion of the 2011 standard independent assessment report, which states that, while the Party has addressed many of the public reporting requirements, information on its current holdings of Kyoto Protocol units is not yet publicly available. The ERT also took note of the recommendations made in the 2010 ARR, including that Romania explicitly state the changes, if any, made to the publicly available information and what information is not available publicly due to confidentiality reasons. The ERT recommends that Romania indicate how it has addressed these recommendations in its next national communication.

25. During the review, the ERT noted that updates of databases and applications, implemented security measures and changes to the national registry software are documented on a regular basis by a nominated registry administrator from the Romanian National Environmental Protection Agency.

26. The ERT also noted that the national registry experienced security problems in 2011. During the review, Romania reported on the additional security measures that it has put in place as a result of those problems. The ERT recommends that Romania strengthen the implementation of the security measures in place to prevent and resolve unauthorized manipulations in accordance with paragraph 115(e) of the annex to decision 22/CMP.1.

27. The ERT concluded that Romania's national registry continues to perform the functions set out in the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1, and continues to adhere to the technical standards for data exchange between registry systems in accordance with decisions 16/CP.10 and 12/CMP.1.

B. Policies and measures, including those in accordance with Article 2 of the Kyoto Protocol

28. As required by the UNFCCC reporting guidelines, Romania has provided in its NC5 information on the PaMs implemented, adopted and planned in order to fulfil its commitments under the Convention and its Kyoto Protocol. Each sector has its own textual description of the principal policy documents such as national strategies, programmes and plans, to be implemented through the action plans of different ministries and agencies. In general, the NC5 contains a similar set of national strategies, plans and programmes to the NC4. However, the NC5 also reports on the changes to the national legislation and on governmental decisions taken since 2006, and improves on the transparency of some of the information reported in the NC4.

29. Some of the recommendations made in the previous review report that Romania improve the reporting of its PaMs were taken into consideration in the NC5, such as the reporting on the PaMs implemented as a result of Romania joining the European Union

(EU). However, the ERT noted that the NC5 does not include the following reporting elements required by the UNFCCC reporting guidelines: the reporting of the sectoral PaMs by GHG; summary tables on PaMs by sector; information on which GHG is affected by which PaM, the type of PaM (e.g. economic, fiscal or voluntary agreement), the status of implementation, the implementing entities and quantitative estimates of the mitigation impact; and information on how Romania believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals. During the review, Romania provided relevant information and clarifications on these reporting elements.

30. The ERT recommends that Romania include the missing information mentioned in paragraph 29, above, in its next national communication. The ERT encourages Romania to improve the consistency between the information presented in its GHG inventory and in the PaMs and projections sections of its national communication.

31. The key framework climate and energy policies in Romania are: the NSCC and the NAPCC; the European Union emissions trading scheme (EU ETS); and the multi-sectoral Governmental Programme 2009–2012, which, among others, include priorities for climate change mitigation, including the promotion of energy efficiency (focusing on the thermal insulation of residences and more energy-efficient vehicles), renewable energy sources (RES) and carbon dioxide capture and storage. One of the objectives of the NSCC was to lay the foundations for Romania to meet its target under the Kyoto Protocol for the period 2008–2012 by establishing the adequate legal and institutional framework within which to develop and implement PaMs (including the EU ETS) and to monitor GHG emissions (through the national system).

32. During the review, Romania informed the ERT that the future NSCC 2011–2020 is being elaborated. As an EU member State since 2007, Romania closely follows the EU *acquis communautaire* relating to climate change.

33. The ERT noted that many of the Party's PaMs are strategic in nature, setting the principles to guide future action, but without a budget or a timeline for their implementation. However, the EU ETS, the major PaM directly addressing national GHG emissions, has been implemented since 2007 (see paras. 43 and 53 below), and some challenging targets have been set, such as: a 40 per cent decrease in energy intensity by 2015 compared with 2001; an 11.2 per cent share of RES in primary energy consumption by 2015, reaching a 24 per cent share of RES in gross final energy consumption by 2020; and a 38 per cent share of electricity from RES by 2020. During the review, Romania provided further information on these and other PaMs and related targets.

34. Romania's level of GHG emissions in 2008 and 2009 (150 Mt CO₂ eq and 129 Mt CO₂ eq, respectively), was far below its Kyoto Protocol target for the period 2008–2012 (an annual average of 256 Mt CO₂ eq). The NC5 reports that, considering the economic growth scenarios and the projected GHG emissions, Romania will meet its Kyoto Protocol target with the currently adopted and implemented PaMs and without additional measures (see para. 71 below).

35. The NC5 does not describe the synergies and overlap among the PaMs at the national level. The ERT noted that, with the exception of the national system that monitors the levels of GHG emissions at the national level, there are no arrangements in place to monitor and estimate the effects of the PaMs at the national level. During the review, Romania reported that the legal and institutional framework for monitoring and evaluating the effect of its PaMs is under development. The ERT encourages Romania to report, in its next national communication, on the developments in the regular monitoring and evaluation of the progress of its PaMs and the interactions of its PaMs at the national level.

36. The Party has provided very limited information in the NC5 on the cost of implementation of its PaMs. Implementing the National Strategy for Energy Efficiency

(NSEE) 2004–2015 is estimated to cost EUR 2.7 billion for a reduction of 25.4 Mtoe in energy consumption over the period 2004–2015 (approximately 60 Mt CO₂ eq in Romania). According to the National Strategy for Using Renewable Energy Sources (adopted in 2003), achieving an 11.2 per cent share of RES in primary energy consumption by 2015 is estimated to cost EUR 1.3 billion in the period 2003–2010 and EUR 1.4 billion in the period 2011–2015. The ERT encourages Romania to include further information on the cost of implementation of its PaMs in its next national communication.

37. The NC5 does not report on the PaMs that could potentially increase emissions. The NC5 reports that the NSCC and the NAPCC have ceased to exist, but that the PaMs implemented as a result of the strategy and the plan are still in place. During the review, Romania confirmed that there are no discontinued PaMs. The ERT encourages Romania to continue analysing the impacts of the implemented PaMs and to report in its next national communication on those PaMs that could result in an increase in emissions and on the PaMs that have been discontinued. Table 3 provides a summary of the reported information on the key PaMs of Romania.

Table 3
Summary of information on policies and measures

<i>Major policies and measures</i>	<i>Examples/comments</i>
<i>Policy framework and cross-sectoral measures</i>	
Governmental Programme 2009–2012 (adopted in December 2008)	The multi-sectoral programme includes priorities for climate change mitigation, including promoting the decrease of energy consumption through the use of energy-efficient technologies (thermal insulation of residences and more energy-efficient vehicles), energy production from renewable energy sources (RES) and carbon dioxide capture and storage
National Strategy on Climate Change 2005–2007 (adopted in 2005 by decision 645/2005)	The strategy represented the general framework for implementing climate change policies and measures during the period 2005–2007, although the policies implemented as objectives are still in place. It outlined Romania's policies in meeting its international obligations under the Convention and its Kyoto Protocol, and the national priorities in relation to climate change. A new strategy is expected in the near future
National Action Plan on Climate Change (adopted in 2005)	This plan detailed the implementation of the National Strategy on Climate Change 2005–2007. It established how the progress was to be reported, assigned tasks and responsibilities, provided deadlines and identified potential funding sources for specific actions
European Union emissions trading scheme (EU ETS) (adopted in the period 2006–2009)	Romania has participated in the EU ETS since 2007. Under this scheme, emissions from installations in the energy sector and some industrial sectors have a limit on their CO ₂ emissions (see para. 43 below)
National Strategy for Sustainable Development, Horizons 2013, 2020 and 2030 (adopted in 2008)	This strategy highlights the principles of efficiency and the use of the best available technologies considered in the industrial policies and public procurement, and supports the improvement of the quality of, and access to, infrastructure for wastewater treatment by providing sewerage services to the majority of the country's urban areas by 2015

<i>Major policies and measures</i>	<i>Examples/comments</i>
Strategy on National Research, Development and Innovation 2007–2013 (adopted in 2007)	This strategy promotes research and innovation in: clean technologies for products and processes, with particular application to construction, transport, energy production and waste management; and sustainable territorial development planning
<i>Policies and measures by sector</i>	
<i>Energy</i>	
National Energy Strategy 2007–2020 (adopted in 2007), Law 220/2008 as revised and complemented by Governmental Emergency Decision 88/2011 and the National Plan on Renewable Resources (adopted in 2010)	The strategy establishes the principles for a sustainable energy sector: the promotion of energy efficiency, RES and cogeneration. The Law and the plan set two goals for the contribution of RES by 2020: a 38 per cent share of electricity from RES and a 24 per cent share in gross final energy consumption. The Law and the Decision also revise the green certificates system, but this has not yet been implemented
Romanian Energy Efficiency Fund (adopted in 2001, amended in 2002)	This fund channels Global Environment Facility (GEF) funds to projects supporting the rational use of energy in industrial companies and other energy consumers. By March 2008, the fund had completed 20 contracts with a total value of USD 11 million and had led to estimated annual energy savings of 37 ktoe
National Strategy for Energy Efficiency for 2004–2015 (adopted in 2004) and Law 199/2000 regarding the efficient use of energy	Romania's goal is to decrease its energy intensity by 40 per cent by 2015 compared with the 2001 level by implementing improvements in industry, residences, transport, the tertiary sector and energy production. In the period 2004–2015, the improvements will lead to a reduction of 25.4 Mtoe (approximately 60 Mt CO ₂ eq in Romania) at a cost of EUR 2.7 billion
United Nations Development Programme (UNDP)/GEF Energy Efficiency Financing Team in Romania 2003–2006 (established in 2003)	The Government of Romania, UNDP and the GEF supported companies and municipalities investing in energy efficiency and building local capacity. By the end of the project, 68 public utilities, municipalities and private companies had received substantive support, and 34 investments (amounting to almost USD 70 million) were in progress or complete, with CO ₂ emission savings of more than 120 kt/year
Strategy for Heat Supply in Cities (2004), District Heating Programme 2006–2015, initiated Financing Programme (2006) and Decisions 1461/2008 and 1215/2009	These policies and measures promote high-efficiency cogeneration and the improvement of the efficiency of the district heating systems through financial support schemes. They also support the rehabilitation of buildings, with over 50,000 apartments rehabilitated in the period 2008–2010, and the use of RES in heating (EUR 37 million has been disbursed)
<i>Transport</i>	
Strategies of the Ministry of Transport for rail, road, naval and air transport to achieve European Union (EU) standards	The achievement of EU standards will help to: reduce energy consumption in the rail transport of passengers and freight; increase the quality and coverage of public transport and reduce the use of private cars; introduce legislation to support more energy-efficient and cleaner vehicles; and increase the use of gaseous fuels and biofuels in transport. The estimated cost of developing a proper infrastructure in compliance with the EU standards is EUR 14.6 billion

<i>Major policies and measures</i>	<i>Examples/comments</i>
EU ETS: the inclusion of international aviation bunkers	The emissions from all international flights departing from or arriving at any EU member State from 2012 will be covered by the EU ETS
<i>Industry</i>	
Road map to implement the Environmental Technologies Action Plan (adopted in 2008)	The action plan promotes the incorporation of innovations and environmentally friendly technologies into industries, while promoting economic growth
<i>Agriculture</i>	
National Strategic Plan for Agriculture and Rural Development 2007–2013 (adopted in 2006)	This plan identifies development priorities for agriculture, forestry and rural areas, in the context of Romania being a new EU member State. It supports the improvement of agriculture companies and the establishment and upgrading of farms, including a support scheme, adopted in 2008, for the renovation of tractors and other agricultural equipment. In addition, one goal is the afforestation of 50,000 ha of degraded agricultural lands, but by 2010 less than 500 ha had been afforested (the budget for 2011 is EUR 200 million)
Programme for the Stimulation of Energy Crops, including Biofuels (adopted in 2006)	This programme led to an increase of the cultivated area for energy crops to 27,000 ha in 2007 and 39,000 ha in 2008
<i>Forestry</i>	
National Strategic Plan for Agriculture and Rural Development for 2007–2013 (adopted in 2006)	This plan aims at extending the forest areas in the country from 27 per cent of the total land area in 2007 to 32 per cent by 2013
National Programme for Afforestation (adopted in 2010)	This programme aims to increase the forested area by 422,000 ha (1.8 per cent of the total land area) between 2010 and 2035. The estimated cost is 3.5 billion new lei (RON) (around EUR 800 million), equating to around 8,000 RON/ha
<i>Waste</i>	
Governmental Programme for 2009–2012	This programme aims, among others, at reviewing the National Strategy on Waste Management, implementing the National Waste Management Plan 2009–2013 and increasing energy production from municipal waste

1. Policy framework and cross-sectoral measures

38. The Ministry of Environment and Forests, supported by the National Environmental Protection Agency, is responsible for climate change policy in Romania, but almost all of the other ministries have to implement environmental protection measures (including in relation to climate change) within their sectoral policies. The National Commission on Climate Change (NCCC), established in 1996 and amended in 2006, is a consultative body that supports the integration of climate change policy into other sectoral policies and enhances the coordination between the ministries. The NCCC also provides advisory services related to the approval of Romania's national communications, GHG inventories, joint implementation (JI) projects and emissions trading activities (national allocation plans for the EU ETS and rules for green investment schemes (GIS)).

39. However, the NC5 provides limited information on how the ministries interact in the development and approval of sectoral strategies and plans, and on the role of the public and

business and environmental non-governmental organizations (NGOs) in the policymaking process, although it is mentioned that NGOs participated in the elaboration of the NSCC and the NAPCC. The ERT encourages Romania to improve the transparency of the reporting on its policymaking process in its next national communication.

40. The NC5 barely reports on the role of the counties and municipalities in climate change policymaking. During the review, additional information was provided on their role in the planning and implementation of PaMs relating to climate change, such as energy efficiency and RES, transportation, agriculture and waste. The ERT encourages Romania to report this information, together with examples of successful PaMs and initiatives, in its next national communication.

41. The existing legal framework in Romania in the field of climate change consists of: multilateral treaties (the Convention and its Kyoto Protocol) and the strategies and action plans to implement them; national regulations, such as the national allocation plans under the EU ETS plans; and specific sectoral legislation. As a new EU member State since 2007, Romania's current and future climate change policy and legislation is shaped by EU policies (see para. 42 below).

42. As a member State of the EU, Romania is obliged to implement EU policy and transpose the EU legislation into national law. In the areas of energy and the environment, the most prominent legislation is the 2008 EU climate and energy package, which sets targets for 2020 for GHG emissions, energy efficiency and renewable energy. Under the EU effort-sharing decision (decision 406/2009/EC), Romania has agreed to limit the increase of its GHG emissions not covered by the EU ETS to 19 per cent between 2005 and 2020; for emissions covered by the EU ETS, Romania will contribute towards the EU-wide 21 per cent reduction (compared with 2005) in emission allowances for 2020 established by EU directive 2009/29/EC⁶; EU directive 2009/28/EC⁷ sets for Romania a target of a 24 per cent share of energy from RES in gross final energy consumption by 2020; finally, for primary energy use, the target is an EU-wide reduction of primary energy use by 20 per cent compared with projected levels.

43. For the sectors covered by the EU ETS (the ETS sector), the ERT noted that the allocation for 2007 was 74.3 million allowances, while verified emissions amounted to 69.6 Mt CO₂ (6.4 per cent below the allocation). The allocation for 2008–2012 is an annual average of 74.1 million allowances. In 2008, the verified emissions (64.1 Mt CO₂) were 13.4 per cent below the allocation. Emissions continued to decrease thereafter: the verified emissions in 2009 (49.0 Mt CO₂ eq) and in 2010 (47.3 Mt CO₂ eq) were 34 per cent and 36 per cent, respectively, below the average allocation. The ERT encourages Romania to include further information about the differences between the allocation and the verified emissions in its next national communication.

2. Policies and measures in the energy sector

44. Between 1989 and 2009, GHG emissions from the energy sector decreased by 54 per cent (100.9 Mt CO₂ eq), driven mainly by the decreases in emissions from fuel combustion from energy industries (by 67.0 Mt CO₂ eq) and the industrial sector (by 25.7 Mt CO₂ eq) and in fugitive emissions from oil and gas (by 17.6 Mt CO₂ eq). Emissions from transport increased by 163 per cent in the same period (by 9.5 Mt CO₂ eq),

⁶ Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community.

⁷ Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

while emissions from the residential, institutional and commercial subsectors increased by 43 per cent (by 2.8 Mt CO₂ eq).

45. **Energy supply.** The NC5 reports that Romania's hydropower installed capacity, 6 GW (30 per cent of the total power installed capacity), has the potential to more than double. The contribution of the two nuclear reactors, amounting to a 17 per cent share of the electricity produced in 2008, is expected to increase with the addition of two new reactors by 2020. During the review, Romania reported on several power plants under construction: hydropower projects (300 MW installed capacity); an 860 MW natural gas cogeneration plant; the refurbishing of existing 330 MW lignite plants, in order to increase efficiency and reduce pollution; and wind power plants (adding 200 MW by 2010 and 1,000 MW by 2011). Simultaneously, the power transport and distribution grids are being improved, in order to reduce losses and integrate the contribution of RES.

46. During the review, Romania reported on the actions taken to promote high-efficiency cogeneration: energy auditing and the rehabilitation of existing units, and the construction of new, high-efficiency plants.

47. **Renewable energy sources.** The National Energy Strategy (NES) 2007–2020 promotes the increase in the share of RES in energy consumption, and Law 220/2008 sets the target of a 38 per cent contribution of RES to electricity supply by 2020. During the review, Romania reported that the National Plan on Renewable Resources (NPRR) was adopted in 2010, with the goal of a 24 per cent share of RES in gross final energy consumption by 2020, and that Law 220/2008 has been revised and complemented by Governmental Emergency Decision 88/2011, revising the green certificates system. Romania also indicated that the NES is under revision to further support RES. The ERT encourages Romania to report on these new developments in its next national communication.

48. **Energy efficiency.** The implementation of the NSEE is estimated to lead to a reduction of approximately 60 Mt CO₂ eq from the energy, industrial, transport, residential and commercial sectors in the period 2004–2015 (see table 3). The 2003–2006 United Nations Development Programme/Global Environment Facility Energy Efficiency Financing Team in Romania and the Romanian Energy Efficiency Fund have also contributed to improving energy efficiency (see table 3).

49. Regarding the centralized heat supply, in the 1990s a large number of users disconnected from it, owing mainly to a comparatively poor price to quality ratio. After a series of improvements, between 2005 and 2007, the number of apartments connected to the district heating system increased by 40 per cent (from 1.2 million to 1.7 million). However, the level of degradation, both in terms of production, transport and distribution systems and equipment, and the large investments needed pose challenges to the sustainability of the centralized heat supply system. In 2004, the Government established the Strategy for Heat Supply in Cities, and in 2006 a financing programme started. In 2007, the Government established the rules for the promotion of high-efficiency cogeneration and in 2009 the rules for the support scheme for high-efficiency cogeneration.

50. The NC5 reports that Romania's electricity prices are the lowest in the EU and therefore cannot be used as an incentive to promote energy efficiency. During the review, Romania reported that the NES estimates energy savings of up to 1.3 Mtoe between 2010 and 2016 as a result of actions undertaken in the industrial, residential and transportation sectors.

51. **Residential and commercial sectors.** During the review, Romania reported that the policy focus for energy efficiency in the residential sector was on heating, hot water and lighting, and that the potential PaMs could include financial support (including from EU funds) for improvements, promoting energy-efficient lighting installations, the mandatory

application of EU standards for the energy efficiency of new buildings and stimulating the operations of the energy services companies.

52. Romania also reported that the Ministry of Regional Development and Tourism is managing 48 programmes (using national and EU funds), which include the aim of improving by 20 per cent the energy performance of buildings by 2020. With regard to heating needs, the objective is to halve the energy required, from around 200 kWh/m² to 100 kWh/m². During 2008, 2,500 apartments were rehabilitated, while in 2009 the number rose to 25,000, and the objective for 2010 is 25,000 with a budget of 300 million new lei (around EUR 70 million). There is also support for introducing the use of RES for heating in households, with nearly EUR 5 million already disbursed, and in the commercial food service sector (with a budget of EUR 32 million).

53. **Transport sector.** The strategies for the railway system, road infrastructure, naval transport and air transport will guide the upgrading of this infrastructure to meet EU standards (see table 3). Information on CO₂ emissions is mandatory for new vehicles, in order to guide buyers towards lower-emission vehicles. Although the NC5 does not report on the PaMs influencing international transport GHG emissions, during the review, Romania reported that from 2012 onwards, emissions from international aviation will be covered by the EU ETS.

54. **Industrial sector.** The National Strategy for Sustainable Development (NSSD), Horizons 2013, 2020 and 2030, provides the strategic directions for Romania's industry. The guiding principle is the technological modernization of processes and products considering the environmental impact of products throughout their entire life cycle.

3. Policies and measures in other sectors

55. Between 1989 and 2009, total GHG emissions, excluding those from the energy sector, decreased by 57 per cent (55 Mt CO₂ eq). Emissions from the industrial processes and solvent and other product use sector decreased by 74 per cent (32 Mt CO₂ eq). Emissions from the agriculture sector also decreased, by 49 per cent (25 Mt CO₂ eq). The waste sector was the only sector from which emissions increased in that period, by 55 per cent (2 Mt CO₂ eq).

56. **Industrial processes.** Between 1989 and 2009, GHG emissions from the industrial processes sector decreased, driven by plant closures and the decrease in industrial output. Emissions from iron and steel production decreased by 77 per cent (12 Mt CO₂ eq), from nitric acid production by 91 per cent (4.9 Mt CO₂ eq), from ammonia production by 66 per cent (3.3 Mt CO₂ eq), from aluminium production by 92 per cent (3.4 Mt CO₂ eq) and from cement production by 44 per cent (2.5 Mt CO₂ eq). The EU ETS (see para. 43 above and table 3) and the NSSD (see para. 54 above) are the main PaMs addressing process emissions from industry.

57. **Agriculture.** Between 1989 and 2009, GHG emissions from the agriculture sector decreased, driven by the decreases in N₂O emissions from agricultural soils (by 14.6 Mt CO₂ eq) mainly as a result of the reduction in the cultivated area and fertilizer applied and in CH₄ emissions from enteric fermentation and manure management (by 5.6 Mt CO₂ eq and 4.2 Mt CO₂ eq, respectively) as a result of the decrease in the number of livestock. The NC5 reports on a programme to incentivize the planting of energy crops and the renewal of tractors and other agricultural equipment. The NSPARD 2007–2013 envisages a more efficient agriculture sector by modernizing practices and equipment (see table 3).

58. **LULUCF.** The LULUCF sector was a net sink of GHG emissions (–24.6 Mt CO₂ eq) in Romania in 2009, and net GHG removals have increased by 13 per cent since 1989. The NSPARD 2007–2013 supports the extension of forest areas through the afforestation of non-forested land and reforestation (see table 3). The NC5

reports that JI projects could be implemented in the areas of afforestation and reforestation. During the review, Romania reported that the principles to enhance removals include conserving and increasing forested areas, raising public awareness and increasing the enforcement of the existing legislation to decrease illegal logging.

59. **Waste management.** Between 1989 and 2009, GHG emissions from the waste sector increased by 55 per cent (by 1.6 Mt CO₂ eq) driven by emissions from landfills, which increased by 42 per cent (1.0 Mt CO₂ eq). Emissions from wastewater handling also increased substantially (by 106 per cent, or 0.6 Mt CO₂ eq). The 7 per cent decline in Romania's population was more than offset by the increase in the per capita waste generation rate, the low rate of waste separation and the large proportion of deep, unmanaged landfills.

60. The NC5 reports that there is no urban waste incineration in Romania (only hazardous waste incineration), and that increasing access to wastewater treatment and meeting EU standards for landfills, including CH₄ recovery, have been the country's priorities in recent years. During the review, Romania reported that, in order to comply with EU legislation, 177 landfills will cease operations by 2017, while another 101 municipal landfills will gradually reduce the quantity of waste deposited. By 2013, Romania will reduce the annual amount of biodegradable waste deposited in landfills and implement measures to significantly reduce the disposal of packaging waste. The Waste Management Strategy is under revision, in order to support the decoupling of growth in waste (in all sectors) from economic growth and to promote waste prevention, recycling, re-use and energy recovery from waste.

4. Minimization of adverse effects in accordance with Article 2, paragraph 3, of the Kyoto Protocol

61. The NC5 does not explicitly report information on how Romania strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts, on other Parties, especially developing country Parties. The NC5 reports some information on the gradual removal of market imperfections, fiscal incentives, tax and duty exemptions and subsidies on fossil fuels. The ERT recommends that Romania explicitly include the missing information in its next national communication. Further information on how Romania strives to implement its commitments under Article 3, paragraph 1, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on the developing country Parties, as reported in the Party's 2011 annual submission, is presented in chapter II.I of this report.

C. Projections and the total effect of policies and measures, and supplementarity relating to the Kyoto Protocol mechanisms

62. The NC5 reports three GHG emission scenarios until 2020. No updated emission projections were available during the review. The ERT noted that the emission projections were concluded in 2008 and have not been updated since then. The ERT also noted that, as a result, the existing projections do not fully reflect the impact of the recent global economic crisis and structural changes in the economy of Romania on national GHG emissions and that, if updated, the emission projections could be much lower than the existing projections.

1. Projections overview, methodology and key assumptions

63. The GHG emission projections provided by Romania in the NC5 include a ‘with measures’, a ‘with additional measures’ and a ‘without measures’ scenario until 2020, presented relative to actual inventory data for 1989 and 2006 and estimated data for 2007 and 2008. The projections are presented on a sectoral basis, using the same sectoral categories used in the PaMs section of the NC5 and on a gas-by-gas basis for the following GHGs: CO₂, CH₄, N₂O, PFCs, HFCs and SF₆ (treating PFCs and HFCs collectively in each case). Projections are also provided in an aggregated format for each sector as well as for a national total, using global warming potential values. The ERT commends Romania for the improved transparency of the projection results compared with the NC4.

64. However, the NC5 does not report emission projections related to the fuel sold to ships and aircraft engaged in international transport. During the review, Romania indicated that these emissions will probably increase in the short term. The ERT recommends that Romania include these projections in its next national communication.

65. The ‘without measures’ scenario projects GHG emissions according to the evolution of the socio-economic indicators without any PaMs for GHG emissions mitigation. The ‘with measures’ scenario adds the effect of implemented and adopted GHG emission mitigation PaMs. Finally, the ‘with additional measures’ scenario considers additional GHG emission mitigation PaMs. The ERT noted that the scenario definitions do not indicate the specific PaMs considered in each scenario. The ERT recommends that Romania include this information in its next national communication.

66. The methodology for preparing the GHG emission projections reported in the NC5 is the same as the one used for preparing those in the NC4. It relies on historical data from the Party’s GHG inventory for the period 1989–2006 and on projections of macroeconomic indicators and other indicators considered in Romania’s relevant strategies and socio-economic policies, which incorporate the EU *acquis communautaire*.

67. The GHG emission projections for the energy sector consider energy demand by subsector (industry, transport, agriculture, and household and commercial consumption) and energy supply by subsector (the extraction of primary energy resources, their conversion in refineries, and thermal and cogeneration power plants, and the transport and distribution of energy products to consumers). The projections are based on calculations carried out using ENPEP (energy and power evaluation program) software.

68. The projected evolution of the electricity sector is based on the NES 2007–2020, under the following assumptions: the increase of the national consumption of electricity at a constant rate of about 3 per cent annually; the use of RES to achieve the targets of a 33 per cent, 35 per cent and 38 per cent share of gross domestic electricity consumption by 2010, 2015 and 2020, respectively; the use of solid fuels through clean technologies; the use of natural gas, mainly in cogeneration groups, in order to ensure heat supply for the population; and the export of 15 TWh electricity annually.

69. Assumptions for the main industrial sectors (iron and steel, aluminium, other non-ferrous metals, chemical fertilizers, other chemical products and cement) are based on the forecasted economic development of Romania. The production levels for the period 2010–2020 are established both by extrapolating the evolution in the period 2000–2006 and by taking into account the forecasts for the various industries. The same production levels are considered for all scenarios, and no major technological changes are expected in the period 2009–2015. New capacities with modern technology are expected to be commissioned after 2015.

70. The ERT noted that the assumptions relating to energy consumption and industrial production levels have not been updated and so do not include the effects of the recent

global financial and economic crisis. The ERT noted that the fuel prices considered for 2010, 2015 and 2020 are relatively low. The NC5 reports a sensitivity analysis for electricity generation only. The sensitivity analysis shows that the choice of technology for new power plants is virtually unaffected by the fuel prices considered, although operational expenses are affected. The ERT noted that the increase in electricity consumption, one of the major drivers of emissions, is assumed at a constant rate of 3 per cent annually during the period up to 2020. To complement the sensitivity analysis, the ERT encourages Romania to include different rates of increase in electricity consumption and broader energy price ranges in its next national communication.

2. Results of projections

71. Table 4 shows the key results of Romania's GHG emission projections included in the NC5. The emission trends are illustrated in the figure below. Romania's total GHG emissions are estimated to be below its Kyoto Protocol target for the period 2008–2012 (annual average 256.0 Mt CO₂ eq) in all scenarios, including the 'without measures' scenario. In the 'without measures' scenario, in 2010 the Kyoto Protocol target is overachieved by nearly 20 percentage points, or by 54 Mt CO₂ eq. In the 'with measures' scenario, the overachievement is by 24 percentage points, or by 67 Mt CO₂ eq. According to the projections, Romania will meet its Kyoto Protocol target by domestic efforts alone (PaMs and the use of accounting for activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol), without the need to use the Kyoto Protocol mechanisms.

72. The ERT noted that Romania's GHG emissions in 2008 were 41 per cent below the Kyoto Protocol target and that in 2009 they decreased to 50 per cent below that target. The ERT also noted that updated projections are not available (see para. 62 above). The ERT considers that updating the projections could indicate a larger overachievement of the Kyoto Protocol target in all scenarios.

Table 4

Summary of greenhouse gas emission projections for Romania

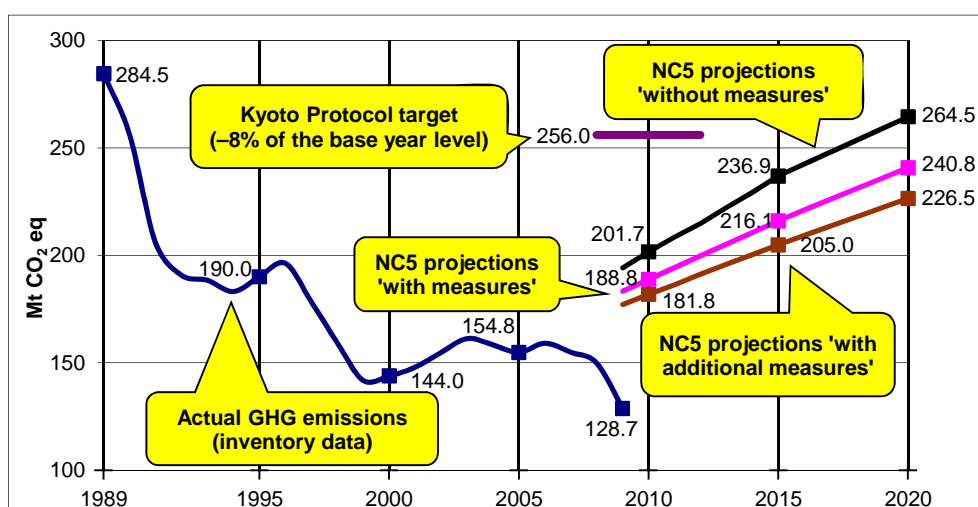
	Greenhouse gas emissions (Mt CO ₂ eq per year)	Changes (%) in relation to	
		base year level ^b	2009 level
Inventory data 1989 ^a	284.5	2.2	121.0
Inventory data 2009 ^a	128.7	-53.7	0.0
Kyoto Protocol base year ^b	278.2	0.0	116.1
Kyoto Protocol target ^b	256.0	-8.0	98.8
'Without measures' projections for 2010 ^c	201.7	-27.5	56.7
'With measures' projections for 2010 ^c	188.8	-32.1	46.7
'With additional measures' projections for 2010 ^c	181.8	-34.7	41.2
'Without measures' projections for 2020 ^c	264.5	-4.9	105.4
'With measures' projections for 2020 ^c	240.8	-13.4	87.1
'With additional measures' projections for 2020 ^c	226.5	-18.6	75.9

^a Source: Romania's 2011 greenhouse gas inventory submission (version 3.1) submitted on 15 September 2011; the emissions are without land use, land-use change and forestry (LULUCF).

^b Source: Based on the initial review report for Romania, contained in document FCCC/IRR/2007/ROU.

^c Source: Romania's fifth national communication; the emissions are without LULUCF.

Greenhouse gas emission projections



Sources: (1) Data for the years 1989–2009: Romania’s 2011 GHG inventory submission (version 3.1), submitted on 15 September 2011; the emissions are without land use, land-use change and forestry (LULUCF); (2) Data for the years 2009–2020: Romania’s NC5; the emissions are without LULUCF.

Abbreviations: GHG = greenhouse gas, NC5 = Romania’s fifth national communication.

73. In the ‘with measures’ scenario, CO₂ emissions are estimated to reach 182 Mt in 2020, a 6 per cent decrease from the level of CO₂ emissions in 1989. CO₂ emissions from transport are estimated to increase by nearly 300 per cent between 1989 and 2020, while emissions from energy industries are expected to decrease by 25 per cent in the same period. The share of CO₂ emissions in total GHG emissions is expected to reach 75 per cent in 2020 from 68 per cent in 1989.

74. CH₄ emissions are estimated to reach 35.2 Mt CO₂ eq in 2020 (27 per cent below the 1989 level) mainly as a result of the decrease in fugitive emissions and emissions from the agriculture sector. The share of CH₄ emissions in total GHG emissions in 2020 is estimated at 15 per cent (compared with 17 per cent in 1989). N₂O emissions are projected to reach 22.2 Mt CO₂ eq in 2020 (44 per cent below the 1989 level). F-gas emissions are expected to increase strongly between 2009 and 2020 (1.7 Mt CO₂ eq in 2020 compared with 0.04 Mt CO₂ eq in 2009); however, the ERT noted that the historical data used for the projections of F-gases (0.6 Mt CO₂ eq in 2006) have been considerably revised in the Party’s 2011 annual submission (reported as 0.14 Mt CO₂ eq in 2006), and that, as a result, the projections for F-gases should also be revised.

75. The EU climate and energy package sets targets for emission reductions, RES shares and energy efficiency for 2020 (see para. 42 above). According to the ‘with measures’ scenario included in the NC5, total GHG emissions in 2020 are projected to reach 240.8 Mt CO₂ eq, 55 per cent above the 2005 level. The ERT noted that this projected level of emissions for 2020 is higher than the emission targets for both the emissions not covered by the EU ETS (an increase of 19 per cent between 2005 and 2020) and the EU-wide emissions covered by the EU ETS (a decrease of 21 per cent between 2005 and 2020; see para. 42 above). Given the difference between the available projections, the actual GHG emissions data up to 2009 and the targets set for 2020, the ERT noted the urgent need to update the projections.

3. Total effect of policies and measures

76. In its NC5, Romania has presented the estimated total effect of implemented and adopted PaMs compared with a situation without such PaMs. Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO₂ eq basis), for the period 2010–2015 and for 2020. Romania calculates the total effect of implemented and adopted PaMs as the difference between the ‘without measures’ and the ‘with measures’ scenarios. The ERT noted that the scenarios do not fully reflect recent economic and structural changes (see para. 62 above) and that, as a result, the reported total effect of implemented and adopted PaMs is based on a hypothetical situation.

77. The NC5 reports that the total estimated effect of adopted and implemented PaMs is 13 Mt CO₂ eq in 2010 and 24 Mt CO₂ eq in 2020. The PaMs implemented in the energy sector will deliver the largest emission reductions (9 Mt CO₂ eq in 2015 and 19 Mt CO₂ eq in 2020). However, the ERT noted that the sectoral PaMs and the drivers behind the GHG emission reductions are not reported in the NC5. Table 5 provides an overview of the total effect of PaMs as reported by Romania.

Table 5
Projected effects of implemented and adopted policies and measures in 2010 and 2020

Sector	<i>Effect of implemented and adopted measures (Mt CO₂ eq)^a</i>	<i>Relative value (% of 1989 emissions)^b</i>	<i>Effect of implemented and adopted measures (Mt CO₂ eq)^a</i>	<i>Relative value (% of 2005 emissions)^b</i>
	2010		2020	
Energy (excluding emissions from transport)	8.0	2.8	16.6	10.6
Transport	1.1	0.4	2.4	1.6
Industrial processes	1.9	0.7	1.6	1.0
Agriculture	1.4	0.5	1.8	1.1
Waste management	0.4	0.2	1.3	0.9
Total	12.9	4.6	23.7	15.2

^a Source: Romania’s fifth national communication.

^b Source: Romania’s 2011 GHG inventory submission (version 3.1) submitted on 15 September 2011; the emissions are without land use, land-use change and forestry.

Note: The total effect of implemented and adopted policies and measures is defined as the difference between the ‘without measures’ and ‘with measures’ scenarios.

4. Supplementary relating to mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

78. The NC5 reports that Romania will not need to use the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol to meet its Kyoto Protocol target for the first commitment period (see para. 71 above). During the review, Romania reiterated that it expects to achieve its target by domestic action alone. Romania explained that the Government does not plan to use Kyoto Protocol units to meet this target, and that any JI projects implemented in the country and GIS financed from revenues from emissions trading under Article 17 will contribute to further emission reductions. The ERT therefore concludes that Romania’s use of the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol fulfils the condition of supplementarity.

79. The NC5 reports that 17 JI projects have been approved, with an estimated generation of 14 million emission reduction units in the period 2008–2012 from

improvements in the district heating system (including the use of RES) and landfill gas recovery. During the review, Romania reported that it is the only Party hosting a JI afforestation and reforestation project (6,000 ha). With regard to GIS, the framework has been established but no agreement has yet been concluded.

80. Romania reported that, in accordance with the EU Linking Directive,⁸ companies that are under the EU ETS can meet their emission reduction targets by offsetting part of their emissions through the use of emission allowances acquired from the market. Romania's companies can use up to about 7.6 Mt allowances annually in the period 2008–2012 (a total of 38 Mt allowances), which corresponds to 10 per cent of their annual allocation, as established in the national allocation plan for the period 2008–2012.

D. Vulnerability assessment, climate change impacts and adaptation measures

81. In its NC5, Romania has provided the required information on the expected impacts of climate change in the country and on adaptation options. Compared with the NC4, the NC5 expands the information reported on vulnerability to include the assessment of the biodiversity, energy, water resources, tourism and forestry sectors. However, the ERT noted that the NC5 provides limited information on cooperation with other Parties on adaptation, though additional information was presented during the review. Table 6 summarizes the information on vulnerability and adaptation to climate change presented in the NC5.

Table 6

Summary of information on vulnerability and adaptation to climate change

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Agriculture (crop production)	<p><i>Vulnerability:</i> The decreased availability of water resources and increasing frequency of droughts are expected to have a negative impact on agriculture and food production in Romania. Winter wheat productivity will increase, while maize yield will decrease</p> <p><i>Adaptation:</i> In 2008, the national strategy for the decrease of the effects of droughts, and the prevention and mitigation of soil degradation and desertification was adopted. The strategy proposes, among other measures: selecting crops according to the local conditions; increasing the variety of crops; improving crop management and rotation; and improving the irrigation infrastructure</p>
Biodiversity	<p><i>Vulnerability:</i> Hydric and thermal stresses are expected to reduce the adaptive capacity of natural habitats and biodiversity. Over-grazing and human-induced deforestation may exacerbate the impacts</p> <p><i>Adaptation:</i> The measures include creating a national monitoring system for endangered species, decreasing agricultural activities in the most vulnerable areas and isolating industrial facilities with forest belts. Romania has prioritized the areas requiring protection, such as the ecosystems with the highest diversity of species and ecosystems that only occur in Romania (e.g. the Danube Delta)</p>
Forests	<p><i>Vulnerability:</i> Higher mean temperatures and reduced precipitation will increase the aridity of the southern, plain and hilly areas. In the short term, increased productivity may occur in some areas but will disappear in the</p>

⁸ Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms.

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
	<p>mid term. The assessment projects the higher mortality of spruce trees under 60 years old and increased effects of pests</p> <p><i>Adaptation:</i> Implementing good practices in forest management, increasing afforestation and reducing deforestation will increase the resilience of the forests. Other measures include identifying species tolerant to hydric stress, afforesting degraded land and not permitting the conversion of forest land to other land uses</p>
Infrastructure (buildings and constructions)	<p><i>Vulnerability:</i> The greatest impacts are expected from extreme weather events, resulting in landslides and damages to infrastructure</p> <p><i>Adaptation:</i> Promoting prevention systems and fast response after the event, increasing the capacity of the drainage systems and promoting rain water infiltration will help to protect the infrastructure</p>
Tourism	<p><i>Vulnerability:</i> For seaside tourism, the increased erosion of beaches and the frequency of extreme weather events will decrease the appeal of these areas. However, the extended duration of the warm season is likely to increase the number of tourists. For mountain tourism, reduced areas and shorter seasons will increase the pressure on high-altitude areas</p> <p><i>Adaptation:</i> Protecting and rehabilitating the beaches, better urban planning in coastal areas and emergency preparedness, and increasing mountain tourism in summer will reduce the impacts</p>
Energy	<p><i>Vulnerability:</i> Increased energy demand (air conditioning) and constraints on power production (limited access to cooling water and reduced renewable energy production due to the limited availability of hydropower and reduced wind speed) will increase the pressure on infrastructure and prices during the longer and warmer summer season. However, heating needs in winter will decrease</p> <p><i>Adaptation:</i> More detailed risk assessments are necessary in the hydropower sector. Upgrading the production, transport and distribution networks, decreasing demand through energy efficiency and promoting renewable energy sources will alleviate the impacts</p>
Industry	<p><i>Vulnerability:</i> The reduction of water resources is identified as the main impact</p> <p><i>Adaptation:</i> Industry should be proactive and use energy-efficient processes and technologies, including renewable energy</p>
Transport	<p><i>Vulnerability:</i> Roads and railways are especially vulnerable to landslides as a result of extreme precipitation. Fluvial transport and harbours will be affected by the increased variability of river flows. Coastal harbours will be affected by sea level rise</p> <p><i>Adaptation:</i> The main recommendations include: adapting regulations to the new and increased risks; upgrading infrastructure; the use of new materials; improved drainage; alternative routes; and afforestation</p>
Human health	<p><i>Vulnerability:</i> Heat waves (especially in urban areas) and extreme weather events will negatively affect human health. The frequency of vector-transmitted diseases and water contamination will increase. The average exposure to ultraviolet radiation will increase as a result of the increase in the time spent outdoors</p> <p><i>Adaptation:</i> The main recommendations include: improving the early warning systems for heat waves and the communication with the urban population; performing epidemiological studies; increasing surveillance; and increasing cooperation between administrations</p>
Sea level rise	<p><i>Vulnerability:</i> The level of the Black Sea increased by 34 cm between 1860 and 2004</p>

<i>Vulnerable area</i>	<i>Examples/comments/adaptation measures reported</i>
Water resources, droughts and flooding	<p><i>Adaptation:</i> The Coastal Protection Plan includes the preliminary design of the protective measures to be built by 2015</p> <p><i>Vulnerability:</i> The floods in 2005 caused 76 deaths. In 2006 the Danube flow reached its highest level since 1840, causing record flooding. However, 2007 was the driest year in the last 60 years. The increased number of droughts and floods reduces water availability and quality, and affects sectors such as agriculture, human health and ecosystems</p> <p><i>Adaptation:</i> The national meteorological system has been updated and the hydrological system is being updated. The National Strategy on Flood Risk Management was adopted. Recommended measures include: improving the mapping of high-risk areas and including this knowledge in regional development plans; creating and improving defence infrastructure and reservoirs; increasing the safety level of the protective infrastructure in nine rivers, three enclosures of the Danube River and 13 large dams; and expanding the banks of the Danube River</p>

82. The NC5 reports that the climate scenarios for Romania point to a significant rise in the annual mean air temperature (by 0.5–1.5°C by 2029 and by 2.0–5.0°C by 2100), most pronounced in summer, and to a decrease in annual precipitation, resulting in the increasing occurrence and duration of droughts. The NC5 reports on vulnerability studies, especially for water resources, crop production, energy and tourism, with a range of adaptation measures proposed. Information on other sectors comprises rather general information on vulnerability and adaptation measures. The ERT encourages Romania to provide more information on vulnerability and the implementation of adaptation measures in other sectors, including health, fisheries, industry and infrastructure, in its next national communication. The ERT noted the shift in focus, compared with the NC4, from vulnerability assessment to the identification of adaptation measures in the NC5 and commends Romania for that development.

83. Adaptation to climate change impacts is increasing in importance in Romania's policies, especially after the record flooding and droughts in the 2005–2007 period (see table 6). In 2008, the Government issued the Adaptation Guide to Climate Change, in order to increase awareness and to recommend measures for adaptation in various sectors. Adaptation has been included in the NSPARD and will be included in the NSCC 2011–2020, and a working group on adaptation was established under the NCCC. The National Strategy to Reduce the Long-term Effects of Drought was drafted in 2007. The National Strategy on Flood Risk Management, elaborated in 2005, assigns responsibilities to different administrative units. The prefect's handbook and the mayor's handbook prepare the municipal administration to deal with emergency situations, including flooding.

84. During the review, Romania reported that the National Rural Development Programme has allocated EUR 62.5 million for the construction, reconstruction and modernization of infrastructure for flood prevention and EUR 156 million for the reconstruction and improvement of roads affected by the flooding in 2010. Romania also reported on the Programme for the Implementation of the Anti-hail and Rain-increasing System, established by Law 173/2008 regarding active intervention in the atmosphere, and on the 15-year Development Programme adopted in 2010.

85. During the review, Romania reported on its collaboration during the 2005–2007 period with other European countries on the project entitled "Agriculture and climate change: how to reduce human effects and threats", which resulted in the establishment of a transnational network to examine the relationship between agriculture and climate change, increased awareness and the elaboration of a Code of Attitude for farmers. Romania also reported on the project entitled "Climate change and variability: impact on Central and

Eastern Europe 2006–2009” (CLAVIER), which analysed future climate changes in regions of Bulgaria, Hungary and Romania in great geographical detail, in order to fulfil the needs of local and regional impact assessments. In addition, CLAVIER evaluated the economic impacts on the agriculture, tourism, energy supply and public sectors.

86. Romania also reported on the Central and Eastern Europe Climate Change Impact and Vulnerability Assessment (CECILIA) project, finalized in 2010. CECILIA improves the understanding of local climate change in Central and Eastern Europe and its impacts on forestry, agriculture, hydrology and air quality, by applying climate modelling studies at a 10 km grid scale for local impact studies in key sectors, including hydrology, agriculture and forestry.

87. The ERT noted that the many initiatives on adaptation are strategic, without funds allocated or a defined timeline for their implementation, and that no socio-economic or cost analysis has been conducted to prioritize the measures proposed in the Adaptation Guide to Climate Change. During the review, Romania indicated that additional analysis and assessment would serve as the basis for prioritizing adaptation strategies and measures. The ERT encourages Romania to provide additional information on updated studies on vulnerability and specific adaptation options implemented or planned in various sectors in its next national communication.

88. In its NC5, Romania does not provide information on cooperation with developing countries on adaptation. During the review, Romania reported on its cooperation with the Republic of Moldova on mitigation and adaptation. The ERT recommends that Romania provide information on its cooperation with other Parties in preparing for adaptation in its next national communication.

E. Financial resources and transfer of technology, including information under Articles 10 and 11 of the Kyoto Protocol

1. Provision of financial resources, including “new and additional” resources and resources under Article 11 of the Kyoto Protocol

89. Romania is not a Party included in Annex II to the Convention and is therefore not obliged to fulfil the obligations defined in Article 4, paragraphs 3, 4 and 5, of the Convention and Article 11, paragraphs 2 and 3, of the Kyoto Protocol. However, during the review, Romania reported on its cooperation with the Republic of Moldova: Romania has pledged EUR 15 million up to 2012 to be transferred as fast-start financing to the Republic of Moldova, mainly for increasing energy efficiency in buildings and improving road infrastructure.

2. Activities related to transfer of technology, including information under Article 10 of the Kyoto Protocol

90. During the review, Romania reported on its memorandum of understanding (MoU) with the Republic of Moldova. This MoU supports the transfer of technology and know-how, and collaboration on research, training and systematic observation. The ERT noted that the transfer of technology will also be included in the NSCC 2011–2020. The ERT commends Romania for this initiative and encourages the Party to report thereon in its next national communication.

F. Research and systematic observation

91. In its NC5, Romania has provided extensive information on its actions relating to research and systematic observation, including domestic and European activities. However, the ERT noted that the NC5 does not provide the following reporting elements required by the UNFCCC reporting guidelines: information on Romania's actions relating to research and systematic observation addressing international activities such as the World Climate Programme, the International Geosphere–Biosphere Programme, the Global Climate Observing System (GCOS) and the Intergovernmental Panel on Climate Change (IPCC); or a summary of information on GCOS activities. The ERT also noted the limited information reported on the support provided by Romania for capacity-building in developing countries. The ERT recommends that Romania include the missing information in its next national communication.

92. During the review, Romania reported on its participation in the activities of the World Meteorological Organization (WMO) and on the work of several Romanian experts in the working groups of the IPCC. Romania also reported that it has 23 stations in the GCOS network, participates in ocean observation and provides data on upper air and total ozone observations.

93. In Romania, climate change research is funded from the national budget and from EU funds. Romania participates actively in various EU projects related to economic and technical capacity-building. Romania has a strong and continuous cooperation with the Republic of Moldova in observation activities and data exchange.

G. Education, training and public awareness

94. In its NC5, Romania has provided information on its domestic actions relating to education, training and public awareness. Compared with the NC4, the NC5 includes additional information on education and public-awareness programmes. In Romania, the central authority responsible for education is the Ministry of Education, Research and Innovation. The ERT noted that there is no specific climate change education in primary schools, although climate change issues are included in the geography courses at high school level and increasingly in higher education (e.g. a two-year Master's degree on managing climate change impacts started in 2009). The ERT also noted that training is mainly the initiative of NGOs rather than a governmental activity.

95. The NC5 does not report on any joint training programmes or capacity-building activities with developing countries. During the review, the ERT noted some initiatives of NGOs on preparing educational materials on RES, energy efficiency, mitigation options and adaptation. The ERT encourages Romania to include this information in its next national communication.

96. The NC5 provides very detailed information on the awareness-raising projects in Romania, but only limited information on the role and involvement of the public and NGOs in influencing policy (see para. 39 above). During the review, the ERT noted that NGOs are very active in Romania in education and public-awareness activities, and that the Ministry of Environment and Forests has partnered in some new initiatives, including Green Politics, the Green Business Index and Stop CO₂. Climate Action Network Romania, an association of NGOs, is the national focal point for Article 6 of the Convention. NGOs are included in the working group on adaptation under the NCCC. The ERT encourages Romania to include additional information on the role of the public and NGOs in the relevant decision-making processes in its next national communication.

H. Evaluation of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

97. The NC5 provides most of the supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol. The supplementary information is placed in different sections of the NC5. Table 7 provides an overview of the supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol as well as references to the sections of the NC5 in which this information is provided.

Table 7

Overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

<i>Supplementary information^a</i>	<i>Reference</i>
National system	Fifth national communication (NC5), section III.C
National registry	NC5, section III.D
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	NC5, section V.C
Policies and measures in accordance with Article 2	NC5, sections IV.C and VIII.B and information provided during the review
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	NC5, section IV.B and information provided during the review
Information under Article 10	NC5, section VIII.A

^a As a country with an economy in transition, Romania does not have to report on the implementation of Article 11 of the Kyoto Protocol, including on the provision of new and additional resources.

98. The NC5 does not include the following elements of the supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol: information on Romania's cooperation with other Parties in achieving its quantified emission reduction commitment; information on steps taken to promote and/or implement any decisions of the International Civil Aviation Organization and the International Maritime Organization to limit or reduce GHG emissions; a description of any provisions to make publicly accessible the information on legislative arrangements and enforcement and administrative procedures for Romania to meet its commitments under the Kyoto Protocol; a description of the national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol also contributes to the conservation of biodiversity and the sustainable use of natural resources; and information on procedures for addressing cases of non-compliance under domestic law. During the review, Romania provided relevant information and clarifications on these reporting elements. The technical assessment of the information reported under Article 7, paragraph 2, of the Kyoto Protocol is contained in the relevant chapters of this report. The ERT recommends that Romania report the above-listed elements in its next national communication and improve the transparency of its reporting on the minimization of adverse effects in accordance with Article 2, paragraph 3, of the Kyoto Protocol (see para. 61 above).

I. Minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol

99. Romania reported the information requested in section H, “Minimization of adverse impacts in accordance with Article 3, paragraph 14”, of the annex to decision 15/CMP.1 as a part of its 2011 annual submission. During the review, Romania reported additional information on how it strives to implement its commitments under Article 3, paragraph 1, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. The ERT considers the reported information to be transparent and complete. For Romania’s future annual submissions, the ERT encourages the Party to continue exploring methods for evaluating the adverse impacts of response measures and to continue its reporting on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol and in conjunction with the PaMs taken to reduce GHG emissions.

100. The Party’s 2011 annual submission and the additional information provided during the review presented several initiatives of Romania aiming to minimize adverse impacts, including technical and financial assistance, such as fast-start financing (see para. 89 above) to developing countries.

III. Conclusions and recommendations

101. The ERT noted with concern the delay in the submission of Romania’s NC5. The ERT concludes that the NC5 generally provides a good overview of the national climate change policy of Romania. The information provided in the NC5 includes most of the mandatory information required by the UNFCCC reporting guidelines (see paras. 29, 64, 88 and 91 above) and most of the elements of the supplementary information required under Article 7, paragraph 2, of the Kyoto Protocol (see para. 98 above). During the review, Romania provided relevant additional information and clarifications, in particular on PaMs, adaptation measures, research and systematic observation, and legislative arrangements and administrative procedures.

102. In 2009, Romania’s GHG emissions excluding LULUCF were 54.7 per cent below its 1989 level (60.6 per cent below including LULUCF). In the 1990s, emission decreases were driven by the decrease in industrial output and the restructuring of the economy, and the related decrease in energy consumption. These factors have outweighed the impact on emission levels of the economic growth experienced since 2000 (gross domestic product increased by 65 per cent between 2000 and 2009).

103. In its NC5, Romania has presented GHG emission projections up to 2020. Three scenarios are included: ‘without measures’, ‘with measures’ and ‘with additional measures’, and the emissions projected for 2010 are 27 per cent, 32 per cent and 35 per cent below the base year level, respectively. The ERT noted that the projections have not been updated since 2008 and, as a result, do not fully reflect the impact of the recent global economic crisis and the structural change experienced by Romania on the country’s GHG emissions; updated projections could indicate a much lower level of GHG emission levels.

104. According to the projections, Romania can meet its Kyoto Protocol target for the first commitment period (an 8 per cent emission reduction compared with the base year level) with domestic efforts alone in all scenarios. As a result, Romania does not plan to use the Kyoto Protocol mechanisms to meet its target, and any JI projects implemented in the country or GIS financed from revenues from emissions trading under Article 17 of the Kyoto Protocol will further decrease emissions.

105. The NSCC and the NAPCC set the legal and institutional foundations for Romania to meet its Kyoto Protocol target and for the implementation of the EU ETS, the major implemented PaM. The NSEE sets the goal of decreasing energy intensity by 40 per cent by 2015 compared with the 2001 level. In the context of EU legislation, Romania has agreed to limit the increase of its emissions not covered by the EU ETS to 19 per cent above the 2005 level by 2020, and contribute towards the EU-wide 21 per cent reduction compared with the 2005 level in emission allowances for 2020. Romania has also agreed to a target of a 24 per cent share of energy from RES in gross final energy consumption by 2020 and a 20 per cent reduction in primary energy use compared with projected levels.

106. The ERT commends Romania for its reporting on financial resources and the transfer of technology. The ERT noted the Party's strong collaboration with the Republic of Moldova.

107. The NC5 shows a shift in attention from vulnerability assessment to the identification of adaptation measures. Floods and droughts have major impacts on agriculture, transport, tourism and infrastructure. However, the ERT noted that many adaptation initiatives are strategic, without funds allocated or a defined timeline for their implementation. The ERT also noted the collaboration of Romania with many European countries in the area of adaptation.

108. The NC5 provides comprehensive information on activities regarding education, training and public awareness in Romania. The NC5 reports on research and systematic observation, and additional information on Romania's participation in the activities of WMO and the IPCC was provided by the Party during the review.

109. The ERT noted the conclusion of the 2010 ARR, which states that the national system is not performing all of the specific functions set out in decision 19/CMP.1. However, the ERT concluded that the national registry continues to perform the functions set out in the annex to decision 13/CMP.1 and the annex to decision 15/CMP.1, and continues to adhere to the technical standards for data exchange between registry systems in accordance with the relevant decisions of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol. The ERT noted that updates of databases and applications, implemented security measures and changes to the national registry software are documented on a regular basis by a nominated responsible person.

110. Supplementary information under Article 7, paragraph 1, of the Kyoto Protocol on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol, provided by Romania in its 2011 annual submission, is complete and transparent.

111. In the course of the IDR, the ERT formulated several recommendations relating to the completeness and transparency of Romania's reporting under the Convention and its Kyoto Protocol. The key recommendations⁹ are that Romania, in its next national communication:

- (a) Improve the completeness of its reporting by including:
 - (i) A description of the national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, and elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contributes to the conservation of biodiversity and the sustainable use of natural resources;
 - (ii) The presentation of the sectoral PaMs by GHG;

⁹ The recommendations are given in full in the relevant chapters of this report.

- (iii) Summary tables on PaMs by sector;
- (iv) Information on which GHG is affected by which PaM, the type of PaM (e.g. economic, fiscal or voluntary agreement), the status of implementation, the implementing entities and quantitative estimates of the mitigation impact;
- (v) Information on how Romania believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals;
- (vi) Projections related to the fuel sold to ships and aircraft engaged in international transport;
- (vii) Information on the specific PaMs considered in each projection scenario;
- (viii) Information on cooperation on adaptation with developing countries;
- (ix) Information on Romania's actions relating to research and systematic observation, addressing international activities;
- (x) A summary of information on GCOS activities;
- (b) Improve the transparency of its reporting by including further information on:
 - (i) National circumstances in relation to LULUCF;
 - (ii) How Romania strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects on other Parties, especially developing country Parties.

112. The ERT encourages Romania to undertake a number of improvements regarding the transparency and completeness of its reporting. The most important are that Romania, in its next national communication:

- (a) Improve the consistency between the information presented in its GHG inventory and in the PaMs and projections sections of its national communication;
- (b) Include information on developments in the regular monitoring and evaluation of the progress of its PaMs and the interactions of its PaMs at the national level;
- (c) Include further information on the cost of implementation of its PaMs;
- (d) Continue analysing the impacts of the implemented PaMs and reporting on those that could result in an increase in emissions;
- (e) Provide further information on the policymaking process, including on the interactions between ministries and the role of the public and NGOs;
- (f) Report on new developments with regard to national targets currently under revision;
- (g) Complete the sensitivity analysis of the projections by analysing different ranges for the annual increase in electricity consumption and the prices of fossil fuels;
- (h) Provide further detail on the implemented adaptation measures;
- (i) Include information on activities related to the transfer of technology, where available.

113. For Romania's future annual submissions, the ERT also encourages the Party to continue exploring methods for evaluating the adverse impacts of response measures and to continue its reporting on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol and in conjunction with the PaMs implemented to reduce GHG emissions.

IV. Questions of implementation

114. During the review, the ERT assessed the NC5, including the supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol and reviewed the information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol, with regard to timeliness, completeness and transparency. No question of implementation was raised by the ERT during the review. The ERT notes that, at the time of the preparation and publication of this report, the question of implementation regarding the national system of Romania, identified in the 2010 ARR, remains unresolved.

Annex

Documents and information used during the review

A. Reference documents

“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 preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories”. FCCC/CP/1999/7. Available at <<http://unfccc.int/resource/docs/cop5/07.pdf>>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Decision 15/CMP.1. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf#page=54>>.

“Guidelines for review under Article 8 of the Kyoto Protocol”. Decision 22/CMP.1. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=51>>.

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<http://unfccc.int/resource/docs/natc/rou_nc5_resbmit.pdf>.

2009 annual submission of Romania: Common reporting format (CRF) tables available at
<http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/rou_2009_crf_13apr.zip>.

2011 annual submission of Romania: CRF tables available at
<http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/rou-2011-crf-15sept.zip>.

National inventory report available at
<http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/rou-2011-nir-22sept.zip>.

B. Additional information provided by Romania

Responses to questions during the review were received from Mr. Constantin Harjeu, Mr. Narcis Jeler, Ms. Florentina Manea and Ms. Miriana Roman (Ministry of Environment and Forests) and from a number of experts from the Romanian Government, knowledge institutes, business associations and non-governmental organizations.
