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## **Report on the technical review of the eighth national communication and the technical review of the fifth biennial report of Romania**

Parties included in Annex I to the Convention were requested by decision 6/CP.25 to submit their eighth national communication to the secretariat by no later than 31 December 2022. According to decision 15/CMP.1, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol are required to include in their national communications supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. This report presents the results of the technical review of the eighth national communication and relevant supplementary information under the Kyoto Protocol of Romania, conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention” and the “Guidelines for review under Article 8 of the Kyoto Protocol”.

Developed country Parties were requested by decision 6/CP.25 to submit their fifth biennial report to the secretariat by no later than 31 December 2022. This report presents the results of the technical review of the fifth biennial report of Romania, conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”.

The review of these submissions took place in Bucharest from 11 to 15 September 2023.



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## Abbreviations and acronyms

|  |  |
|--|--|
| AEA  | annual emission allocation   |
| Annex II Party                                     | Party included in Annex II to the Convention   |
| AR   | Assessment Report of the Intergovernmental Panel on Climate Change   |
| BR   | biennial report  |
| CH <sub>4</sub>                                    | methane  |
| CO <sub>2</sub>                                    | carbon dioxide   |
| CO <sub>2</sub> eq                                 | carbon dioxide equivalent  |
| COST   | European Cooperation in Science and Technology   |
| CTF  | common tabular format  |
| EF   | emission factor  |
| ERT  | expert review team   |
| ESD  | European Union effort-sharing decision   |
| ESR  | European Union effort-sharing regulation   |
| EU   | European Union   |
| EU ETS   | European Union Emissions Trading System  |
| F-gas  | fluorinated gas  |
| GCOS   | Global Climate Observing System  |
| GDP  | gross domestic product   |
| GHG  | greenhouse gas   |
| GWP  | global warming potential   |
| HFC  | hydrofluorocarbon  |
| ICAO   | International Civil Aviation Organization  |
| IE   | included elsewhere   |
| IMO  | International Maritime Organization  |
| IPCC   | Intergovernmental Panel on Climate Change  |
| IPPU   | industrial processes and product use   |
| LULUCF   | land use, land-use change and forestry   |
| N <sub>2</sub> O                                   | nitrous oxide  |
| NA   | not applicable   |
| NC   | national communication   |
| NE   | not estimated  |
| NF <sub>3</sub>                                    | nitrogen trifluoride   |
| NO   | not occurring  |
| PaMs   | policies and measures  |
| PFC  | perfluorocarbon  |
| PRIMES   | Price-Induced Market Equilibrium System (model)  |
| reporting guidelines for supplementary information | “Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol. Part II: Reporting of supplementary information under Article 7, paragraph 2” |
| SF <sub>6</sub>                                    | sulfur hexafluoride  |
| UNFCCC reporting guidelines on BRs                 | “UNFCCC biennial reporting guidelines for developed country Parties”   |
| UNFCCC reporting guidelines on NCs                 | “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”    |
| WAM  | ‘with additional measures’   |
| WEM  | ‘with measures’  |
| WOM  | ‘without measures’   |

## **I. Introduction and summary**

### **A. Introduction**

1. This is a report on the in-country technical review of the NC8 and BR5 of Romania. The review was organized by the secretariat in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”, particularly “Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention” and “Part V: UNFCCC guidelines for the technical review of national communications from Parties included in Annex I to the Convention” (annex to decision 13/CP.20), and the “Guidelines for review under Article 8 of the Kyoto Protocol” (annex to decision 22/CMP.1 and annex I to decision 4/CMP.1).

2. In accordance with decision 13/CP.20, a draft version of this report was transmitted to the Government of Romania, which did not provide any comments.

3. The review was conducted from 11 to 15 September 2023 in Bucharest by the following team of nominated experts from the UNFCCC roster of experts: Sander Akkermans (Kingdom of the Netherlands), Edwige Ernestine Essomba Atangana (Cameroon), Agita Gancone (Latvia), Wolfram Jörß (EU), Huantao Shou (China) and Maia Tskhvaradze (Georgia). Agita Gancone and Maia Tskhvaradze<sup>1</sup> were the lead reviewers. The review was coordinated by Anna Sikharulidze and Nalin Srivastava (secretariat).

### **B. Summary**

4. The ERT conducted a technical review of the information reported in the NC8 of Romania in accordance with the UNFCCC reporting guidelines on NCs,<sup>2</sup> the reporting guidelines for supplementary information, in particular the supplementary information required under Article 7, paragraph 2, and on the minimization of adverse impacts under Article 3, paragraph 14, of the Kyoto Protocol<sup>3</sup> and of the information reported in the BR5 of Romania in accordance with the UNFCCC reporting guidelines on BRs.<sup>4</sup>

#### **1. Timeliness**

5. The NC8 was submitted on 30 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25.

6. The BR5 was submitted on 31 December 2022, before the deadline of 31 December 2022 mandated by decision 6/CP.25. The CTF tables were also submitted on 31 December 2022. The CTF tables were resubmitted on 13 September 2023 to address issues raised during the review. The resubmission included changes to CTF tables 1, 2(b), 3, 4, 5, 6(a), 6(b) and 6(c). Detailed information on improvements related to the resubmission is provided in paragraph 11 below. Unless otherwise specified, the information and values from the latest submission are used in this report.

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

7. Issues and gaps identified by the ERT related to the information reported by Romania in its NC8 are presented in tables 1–2. The information reported, including the supplementary information under the Kyoto Protocol, mostly adheres to the UNFCCC reporting guidelines on NCs. The ERT concludes that the issues of a mandatory nature related to supplementary

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<sup>1</sup> As a lead reviewer, Maia Tskhvaradze led the preparations for the review and contributed to the draft technical review report. However, she was not able to participate in the review week owing to other commitments.

<sup>2</sup> Decision 6/CP.25, annex.

<sup>3</sup> Decision 15/CMP.1, annex, and decision 3/CMP.11, annex III.

<sup>4</sup> Decision 2/CP.17, annex.

information under the Kyoto Protocol do not influence the Party's ability to fulfil its commitments for the second commitment period of the Kyoto Protocol.

8. Romania made improvements to the reporting in its NC8 compared with that in its NC7, including by addressing some of the recommendations and encouragements from the previous review report. The ERT noted that the Party has improved:

(a) The transparency of the GHG inventory information reported by clearly describing the process used for the official consideration and final approval of the inventory and the process used for the selection of the EFs;

(b) The transparency and completeness of the information reported on PaMs by improving the information on how the progress of PaMs in mitigating GHGs is monitored and evaluated over time, and listing PaMs no longer in place and explaining why they are no longer in place;

(c) The transparency and completeness of the information reported on projections and the total effects of PaMs by clearly demonstrating that the definitions of the WEM, WOM and WAM scenarios are in line with the UNFCCC reporting guidelines on NCs, reporting on the aggregated effects of additional PaMs considered for the WAM scenario, and clearly explaining the methodology used for estimating the aggregated effects of PaMs;

(d) The completeness of the information reported on education, training and public awareness by reporting on the extent of public participation in the preparation or domestic review of the NC;

(e) The completeness of the supplementary information related to the Kyoto Protocol by including the test procedures developed with the aim of testing the performance, procedures and security measures of the national registry, and providing information on legislative arrangements and administrative procedures for ensuring that the implementation of activities under Article 3, paragraph 3, and any 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;

(f) The transparency of the supplementary information related to the Kyoto Protocol by clearly describing the process used for the official consideration and final approval of the inventory and the process used for the selection of the EFs, particularly the sources of the EFs used.

Table 1

**Assessment of completeness and transparency of mandatory information reported by Romania in its eighth national communication**

| <i>Section of NC</i>   | <i>Completeness</i> | <i>Transparency</i> | <i>Reference to description of recommendation</i> |
|--|---------------------|---------------------|---|
| Executive summary  | Complete            | Transparent         | –   |
| National circumstances relevant to GHG emissions and removals            | Complete            | Transparent         | –   |
| GHG inventory  | Complete            | Mostly transparent  | Issue 2 in table I.1                              |
| PaMs   | Mostly complete     | Mostly transparent  | Issues 4, 7 and 9 in table I.2                    |
| Projections and the total effect of PaMs                                 | Mostly complete     | Transparent         | Issues 2, 4 and 6 in table I.3                    |
| Vulnerability assessment, climate change impacts and adaptation measures | Mostly complete     | Transparent         | Issue 1 in table I.4                              |
| Financial resources and transfer of technology <sup>a</sup>              | NA                  | NA                  | NA  |
| Research and systematic observation                                      | Mostly complete     | Transparent         | Issue 1 in table I.5                              |

| <i>Section of NC</i>                     | <i>Completeness</i> | <i>Transparency</i> | <i>Reference to description of recommendation</i> |
|--|---------------------|---------------------|---|
| Education, training and public awareness | Complete            | Transparent         | –   |

*Note:* A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in annex I. The assessment of completeness and transparency by the ERT in this table is based only on the “shall” reporting requirements.

<sup>a</sup> Romania is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paras. 3–5, of the Convention.

Table 2

**Assessment of completeness and transparency of mandatory supplementary information under the Kyoto Protocol reported by Romania in its eighth national communication**

| <i>Supplementary information under the Kyoto Protocol</i>                    | <i>Completeness</i> | <i>Transparency</i> | <i>Reference to description of recommendation</i> |
|--|---------------------|---------------------|---|
| National system  | Complete            | Transparent         | –   |
| National registry  | Complete            | Transparent         | –   |
| Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 | Complete            | Transparent         | –   |
| PaMs in accordance with Article 2  | Complete            | Mostly transparent  | Issue 1 in table I.6                              |
| Domestic and regional programmes and/or arrangements and procedures          | Complete            | Mostly transparent  | Issue 2 in table I.6                              |
| Information under Article 10 <sup>a</sup>                                    | NA                  | NA                  | NA  |
| Financial resources <sup>b</sup>   | NA                  | NA                  | NA  |
| Minimization of adverse impacts in accordance with Article 3, paragraph 14   | Complete            | Transparent         | –   |

*Note:* A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in annex I. The assessment of completeness and transparency by the ERT in this table is based only on the “shall” reporting requirements.

<sup>a</sup> The assessment refers to information provided by the Party on the provisions contained in Article 4, paras. 3, 5 and 7, of the Convention, as reported under Article 10 of the Kyoto Protocol, which is relevant to Annex II Parties only. An assessment of the information on the other provisions of Article 10 of the Kyoto Protocol is provided under the relevant substantive headings under the Convention, for example research and systematic observation.

<sup>b</sup> Romania is not an Annex II Party and is therefore not obliged to provide information on financial resources under Article 11 of the Kyoto Protocol, including on “new and additional” resources.

9. Issues and gaps identified by the ERT related to the information reported by Romania in its BR5 are presented in table 3. The information reported mostly adheres to the UNFCCC reporting guidelines on BRs.

10. Romania made improvements to the reporting in its BR5 compared with that in its BR4, including by addressing many of the recommendations and encouragements from the previous review report. The ERT noted that the Party has improved:

(a) The transparency of the information reported on its quantified economy-wide emission reduction target and related assumptions, conditions and methodologies by correctly reporting the description of its target, specifying in CTF table 2(b) that NF<sub>3</sub> and the LULUCF sector are not included in the target using an appropriate notation key (“NA”) and providing relevant explanations as appropriate in a footnote to CTF table 2(b); providing information explaining that it does not intend to use international market-based mechanisms to achieve its quantified economy-wide emission reduction target; and providing information on its domestic arrangements established for the process of the self-assessment of compliance with emission reductions in comparison with emission reduction commitments;

(b) The transparency of the information reported on progress in the achievement of its quantified economy-wide emission reduction target and relevant information by clearly describing the changes to the domestic institutional arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its target; ensuring consistency between the names of the PaMs described in the

textual part of the BR and CTF table 3; and correctly reporting the status of implementation of PaMs in the BR and in CTF table 3;

(c) The transparency and completeness of the information reported on projections by reporting information on WOM projections for 2030 consistently between CTF table 6(b) and the textual part of the BR and including a diagram illustrating the information on projections, showing unadjusted inventory data and the WEM, WOM and WAM projections.

Table 3

**Summary of completeness and transparency of mandatory information reported by Romania in its fifth biennial report**

| <i>Section of BR</i>  | <i>Completeness</i> | <i>Transparency</i> | <i>Reference to description of recommendation</i> |
|---|---------------------|---------------------|---|
| GHG emissions and removals  | Complete            | Mostly transparent  | Issue 1 in table II.1                             |
| Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies | Complete            | Transparent         | –   |
| Progress in achievement of targets  | Mostly complete     | Transparent         | Issues 2 and 4 in table II.2                      |
| Provision of support to developing country Parties <sup>a</sup>   | NA                  | NA                  | NA  |

*Note:* A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in annex II. The assessment of completeness and transparency by the ERT in this table is based only on the “shall” reporting requirements.

<sup>a</sup> Romania is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paras. 3–5, of the Convention.

11. The resubmission of the CTF tables made during the review improved:

(a) The GHG inventory information reported by adding a custom footnote to explain the base year reported in CTF table 1;

(b) The information reported on the Party’s quantified economy-wide emission reduction target and related assumptions, conditions and methodologies by specifying in CTF table 2(b) that NF<sub>3</sub> is not included in the target using an appropriate notation key;

(c) The information reported on PaMs by ensuring no double reporting of PaMs, correctly reporting the status of implementation and start years of implementation of PaMs, and clarifying how the PaMs are grouped to estimate the sectoral mitigation impact in CTF table 3;

(d) The information reported on progress in the achievement of the Party’s quantified economy-wide emission reduction target by including in CTF table 4 data on the base year (1990) in the column “Year” and providing a footnote explaining that the base year for the joint target of the EU and its member States under the Convention is 1990 for all sectors and gases;

(e) The information reported on projections and the total effects of PaMs by correcting the units used for the key underlying assumptions reported in CTF table 5; ensuring the consistency of the data reported on historical emissions in CTF tables 6(a–c), as well as between the data on NF<sub>3</sub> emissions reported in CTF tables 6(a–c) with the data in CTF table 1, and between the 2030 projections data reported in CTF tables 6(a–c) with the respective data reported in the textual part of the NC8/BR5; and providing modelled WOM scenario results for 2010, 2015 and 2020 in CTF table 6(b).

## **II. Technical review of the information reported in the eighth national communication and fifth biennial report**

### **A. National circumstances relevant to greenhouse gas emissions and removals**

#### **1. Technical assessment of the reported information**

12. The NC8 contains key data on legislation, population trends, geography and land use, climate and climate change, economic developments, energy, transport, the buildings sector, industry, trade, the services sector, agriculture, forestry, resource efficiency and wastewater. The reported national circumstances of Romania explain the relationship between its historical and future emission trends and its national circumstances. The decrease in GHG emissions between 1989 and 2020 is, in addition to Romania's climate change policy, largely the result of Romania's transition to a market-based economy and the effect of the global financial and economic crisis.

13. The Party highlighted the reduction in consumption of fossil fuels and mineral energy resources (e.g. oil and coal) and the increased use of renewable energy sources as the main drivers of the reduction in GHG emissions in recent years. In 2017, domestic crude oil production covered nearly 32 per cent of demand. Between 2017 and 2022, crude oil production has decreased by an average of 2 per cent per year. The transport sector is one of the key drivers of GHG emissions, with an increase in emissions until 2019, mainly due to the increase in the volume of transported goods (e.g. freight), which grew from 20,226 t in 2005 to 47,315 t in 2019. Transport sector emissions decreased sharply in 2020 owing to the 2019 coronavirus pandemic, with the volume of transported goods decreasing to 10,236 t. Emissions from the agriculture sector, which also represents a significant share of GHG emissions, have decreased since 1989 owing to the decrease in the number of livestock.

14. Romania's GDP growth rate fluctuated in 2000–2020, with a positive trend between 2012 and 2017 and an annual growth rate of 4.6 per cent. The country experienced a recession in 2017–2020 and a decrease in GDP by 3.8 per cent in 2020 owing to the pandemic. GHG emissions per GDP unit and GHG emissions per capita decreased by approximately 24.0 and 7.3 per cent respectively from 2017 to 2020 owing to migration abroad, rising mortality rates, declining birth rates, improvements in technology, GHG emission reduction policies and structural changes in the economy.

15. Romania requested flexibility in accordance with Article 4, paragraphs 6 and 10, of the Convention in relation to the base-year definition. In accordance with Article 4, paragraph 6, of the Convention and decision 9/CP.2, Romania, as a Party with an economy in transition, may use 1989 as its base year.

#### **2. Assessment of adherence to the reporting guidelines**

16. The ERT assessed the information reported in the NC8 of Romania and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs. There were no issues raised during the review relating to the topics discussed in this chapter of the review report.

### **B. Greenhouse gas inventory information<sup>5</sup>**

#### **1. Technical assessment of the reported information**

17. Romania reported information in its BR5 and NC8 on its historical GHG emissions and inventory arrangements using GWP values from the AR4. More recent information on

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<sup>5</sup> GHG emission data in this section, which use GWP values from the AR5, are based on Romania's 2023 annual submission, version 2, which has not yet been subject to review. All emission data in subsequent chapters are based on Romania's BR5 CTF tables, which use GWP values from the AR4 unless otherwise noted.



GHG emissions was reported in Romania’s 2022 annual submission, which used GWP values from the AR5. Total GHG emissions<sup>6</sup> excluding emissions and removals from LULUCF decreased by 56.4 per cent between 1990 and 2020, while total GHG emissions including net removals from LULUCF decreased by 73.0 per cent over the same period.

18. The changes in total emissions were driven mainly by factors such as the transition to a market-based economy, the reduction in coal power plant generation and outputs of the metal and chemical industries, the introduction of abatement technologies for gas production, the establishment of nuclear power and hydroelectric plants, and the decline in the livestock population and crop production levels. Emissions decreased considerably between 1990 and 1994 as a result of the decline in economic activities and the related decrease in energy demand. Emissions showed an upward trend from 1994 until 1996 following the revitalization of the economy. In 1997, GHG emissions decreased again until 1999 owing to the significant change in the energy supply mix, followed by a slight increase in 2000–2003 owing to economic growth. Emissions remained relatively stable between 2004 and 2007 before decreasing steadily between 2008 and 2010 owing to the global economic and financial crisis. Emissions then remained stable in 2010–2016, followed by an upward trend until 2018 as a result of economic growth, and a downward trend from 2019 onward owing to the pandemic. Emissions excluding emissions and removals from LULUCF in 2021 increased by 3.0 per cent compared with 2020, in line with the easing of pandemic-related restrictions.

19. The Party presented GHG emission trends by gas and by sector from 1989 (Romania’s base year under the Convention) until 2020, with the trend analysis being carried out taking 1989 as the base year. Similarly to the previous review report, the ERT notes that transparency could be enhanced by using 1990 as the base year in the discussion of GHG emissions and emission trends.

20. Table 4 illustrates the emission trends by sector and by gas for Romania using information from the 2023 GHG annual submission. The emissions reported in the 2022 GHG annual submission are the same as those reported in CTF table 1, while the emissions reported in the 2023 GHG inventory submission differ from those reported in CTF table 1 owing to recalculations performed for the time series 1990–2020 (e.g. using additional country-specific EFs and GWP values from the AR5). Total GHG emissions excluding LULUCF in 1990 increased by 2.8 per cent in the 2023 GHG annual submission compared with the 2022 GHG annual submission, while total GHG emissions excluding LULUCF in 2020 increased by 1.5 per cent.

Table 4  
**Greenhouse gas emissions by sector and by gas for Romania for 1990–2021**

|   | <i>GHG emissions (kt CO<sub>2</sub> eq)</i> |             |             |             |             | <i>Change (%)</i> |                  | <i>Share (%)</i> |             |
|---|---|-------------|-------------|-------------|-------------|-------------------|------------------|------------------|-------------|
|   | <i>1990</i>                                 | <i>2000</i> | <i>2010</i> | <i>2020</i> | <i>2021</i> | <i>1990–2020</i>  | <i>2020–2021</i> | <i>1990</i>      | <i>2021</i> |
| <i>Sector</i>                                 |   |             |             |             |             |                   |                  |                  |             |
| 1. Energy                                     | 185 042.77                                  | 98 363.67   | 88 407.43   | 73 800.78   | 76 909.92   | –60.1             | 4.2              | 72.0             | 66.6        |
| A1. Energy industries                         | 71 694.67                                   | 43 156.50   | 34 884.24   | 18 518.38   | 18 887.53   | –74.2             | 2.0              | 27.9             | 16.4        |
| A2. Manufacturing industries and construction | 54 108.35                                   | 17 692.76   | 15 029.91   | 14 597.71   | 14 511.48   | –73.0             | –0.6             | 21.0             | 12.6        |
| A3. Transport                                 | 12 431.77                                   | 9 915.10    | 14 220.16   | 18 357.63   | 19 557.28   | 47.7              | 6.5              | 4.8              | 16.9        |
| A4. and A5. Other                             | 12 616.59                                   | 9 613.01    | 10 909.21   | 12 748.11   | 14 513.87   | 1.0               | 13.9             | 4.9              | 12.6        |
| B. Fugitive emissions from fuels              | 34 191.39                                   | 17 986.30   | 13 363.91   | 9 578.95    | 9 439.75    | –72.0             | –1.5             | 13.3             | 8.2         |
| C. CO <sub>2</sub> transport and storage      | NO  | NO          | NO          | NO          | NO          | NA                | NA               | NA               | NA          |

<sup>6</sup> In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO<sub>2</sub> eq excluding LULUCF, unless otherwise specified.

|   | GHG emissions (kt CO <sub>2</sub> eq) |                   |                   |                   |                   | Change (%)   |            | Share (%)    |              |
|---|---------------------------------------|-------------------|-------------------|-------------------|-------------------|--------------|------------|--------------|--------------|
|   | 1990                                  | 2000              | 2010              | 2020              | 2021              | 1990–2020    | 2020–2021  | 1990         | 2021         |
|   | 2. IPPU                               | 31 807.12         | 18 042.86         | 13 781.99         | 12 686.90         | 12 794.86    | –60.1      | 0.9          | 12.4         |
| 3. Agriculture                              | 34 651.38                             | 19 794.87         | 17 943.59         | 19 010.69         | 19 169.30         | –45.1        | 0.8        | 13.5         | 16.6         |
| 4. LULUCF                                   | –28 603.93                            | –32 922.14        | –37 235.53        | –50 406.76        | –49 258.43        | –76.2        | 2.3        | NA           | NA           |
| 5. Waste                                    | 5 635.91                              | 6 036.91          | 6 536.90          | 6 537.66          | 6 529.07          | 16.0         | –0.1       | 2.2          | 5.7          |
| 6. Other <sup>a</sup>                       | NO                                    | NO                | NO                | NO                | NO                | NA           | NA         | NA           | NA           |
| <i>Gas<sup>b</sup></i>                      |                                       |                   |                   |                   |                   |              |            |              |              |
| CO <sub>2</sub>                             | 176 506.90                            | 93 334.04         | 86 094.08         | 74 026.53         | 77 190.58         | –58.1        | 4.3        | 68.6         | 66.9         |
| CH <sub>4</sub>                             | 59 043.13                             | 35 995.80         | 29 798.93         | 26 340.58         | 25 785.35         | –55.4        | –2.1       | 23.0         | 22.3         |
| N <sub>2</sub> O                            | 19 056.44                             | 11 325.69         | 9 814.48          | 9 755.85          | 10 465.42         | –48.8        | 7.3        | 7.4          | 9.1          |
| HFCs  | 0.16                                  | 66.76             | 899.27            | 1 847.43          | 1 908.24          | 1 121 449.3  | 3.3        | 0.0          | 1.7          |
| PFCs  | 2 530.06                              | 1 507.48          | 8.21              | 3.19              | 3.40              | –99.9        | 6.6        | 1.0          | 0.0          |
| SF <sub>6</sub>                             | 0.48                                  | 8.55              | 54.93             | 62.45             | 50.17             | 12 996.3     | –19.7      | 0.0          | 0.0          |
| NF <sub>3</sub>                             | NO                                    | NO                | NO                | NO                | NO                | NA           | NA         | NA           | NA           |
| <b>Total GHG emissions excluding LULUCF</b> | <b>257 137.18</b>                     | <b>142 238.31</b> | <b>126 669.91</b> | <b>112 036.04</b> | <b>115 403.15</b> | <b>–56.4</b> | <b>3.0</b> | <b>100.0</b> | <b>100.0</b> |
| <b>Total GHG emissions including LULUCF</b> | <b>228 533.25</b>                     | <b>109 316.17</b> | <b>89 434.38</b>  | <b>61 629.28</b>  | <b>66 144.72</b>  | <b>–73.0</b> | <b>7.3</b> | <b>NA</b>    | <b>NA</b>    |

Source: GHG emission data: Romania's 2023 annual submission, version 2.

<sup>a</sup> Emissions and removals reported under the sector other (sector 6) are not included in total GHG emissions.

<sup>b</sup> Emissions by gas without LULUCF.

21. In brief, Romania's national inventory arrangements were established in accordance with relevant government decisions.<sup>7</sup> The National Environmental Protection Agency has overall responsibility for the national GHG inventory and plays an active role in inventory planning, preparation, quality assurance/quality control and inventory submission. In accordance with government decision 590/2019, preparation of the annual LULUCF inventory is assigned on a contractual basis to the various national research institutes.<sup>8</sup> Government ministries, local public authorities, research institutes, owners of industrial facilities, professional associations and other relevant agencies are legally required to provide the necessary inventory data to the National Environmental Protection Agency. The national inventory report is approved by the Ministry of Environment, Waters and Forests before its submission to the secretariat. There have been no changes in these arrangements since the BR4.

## 2. Assessment of adherence to the reporting guidelines

22. The ERT assessed the information reported in the NC8 and BR5 of Romania and identified issues relating to transparency, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are described in tables I.1 and II.1.

## 3. National system for the estimation of anthropogenic emissions by sources and removals by sinks

### (a) Technical assessment of the reported information

23. Romania provided in the NC8 a description of how its national system for the estimation of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol is performing the general and specific functions defined

<sup>7</sup> Government decision 1570/2007, modified by government decisions 668/20012, 120/2014, 1022/2016 and 600/2022.

<sup>8</sup> The National Research and Development Institute for Cryogenic and Isotopic Technologies, the National Research and Development Institute in Forestry "Marin Drăcea", the National Research and Development Institute for Soil Science, Agrochemistry and Environment, and the National Institute for Aerospace Research "Elie Carafoli".

in the annex to decision 19/CMP.1 in conjunction with decisions 3/CMP.11 and 4/CMP.11. The description includes all the elements mandated by paragraph 30 of the annex to decision 15/CMP.1. The NC8 also contains a reference to the description of the national system provided in the national inventory report of the 2022 annual submission. The ERT took note of the review of the changes to the national system reflected in the report on the individual review of the 2022 annual submission of Romania.

**(b) Assessment of adherence to the reporting guidelines**

24. The ERT assessed the information reported in the NC8 of Romania and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

**4. National registry**

**(a) Technical assessment of the reported information**

25. In its NC8 Romania provided information on how its national registry performs the functions in accordance with the annex to decision 13/CMP.1 in conjunction with decision 3/CMP.11 and the annex to decision 5/CMP.1 and complies with the requirements of the technical standards for data exchange between registry systems. The ERT took note of the review of the changes to the national registry reflected in the report on the individual review of the 2022 annual submission of Romania.

**(b) Assessment of adherence to the reporting guidelines**

26. The ERT assessed the information reported in the NC8 of Romania and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

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

**1. Technical assessment of the reported information**

27. Romania reported information on its economy-wide emission reduction target in its BR5. For Romania the Convention entered into force on 6 September 1994. Under the Convention Romania committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020.

28. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. The legislative package regulates emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub> using GWP values from the AR4 to aggregate the GHG emissions of the EU until 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention.

29. The EU-wide targets are primarily implemented through the EU ETS and ESD. The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emission cap was put in place for 2013–2020 for the EU ETS with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. For 2030, a reduction target of 62 per cent below the 2005 level has been set for emissions covered by the EU ETS. The ESD became operational in 2013 and covers sectors outside the EU ETS, including transport (excluding aviation and international maritime transport), residential and commercial buildings, agriculture, small industry and waste. The ESD is regulated through targets for each member State that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020. The ESR, the successor to the ESD, was adopted in 2018 and amended in 2023 with the target of reducing emissions covered under the ESR by 40 per cent below the 2005 level by 2030.

30. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Operators and airline operators can use such units to fulfil their requirements under the EU ETS, and member States can use such units for their national ESD targets, within specific limitations.

31. The European Commission set out its vision for a climate-neutral EU in November 2018, and in December 2019 presented the European Green Deal as a road map with actions for making the EU economy sustainable. The European Council endorsed in December 2019 the objective of making the EU climate-neutral by 2050. As part of the European Green Deal, the 2050 climate-neutrality target was made binding in the first European Climate Law, adopted in 2021. It also increased the ambition of the 2030 emission reduction target to at least 55 per cent below the 1990 level. Member States will set out any increased ambition in the update of their national energy and climate plans.

32. Romania has a national target of limiting its emission growth to 19 per cent above the 2005 level by 2020 for ESD sectors. This target has been translated into binding quantified AEAs for 2013–2020. Romania’s AEAs change following a linear path from 75,630.01 kt CO<sub>2</sub> eq in 2013 to 89,809.45 kt CO<sub>2</sub> eq in 2020.<sup>9</sup> Under the ESR, Romania had a national target of reducing emissions from covered sectors to 2 per cent below the 2005 level by 2030. The EU “Fit for 55” package includes an amendment to Romania’s target under the ESR, which has been revised from a 2 per cent reduction in GHG emissions below the 2005 level by 2030 (established in 2018) to a 12.7 per cent reduction (established in 2023). The amendment was adopted by the European Parliament and the European Council on 19 April 2023,<sup>10</sup> after the submission of Romania’s NC8 and BR5.

33. In addition to its ESD target, Romania committed to achieving a domestic target of a 78 per cent reduction in emissions below the 1990 level by 2030, as set out in its new Long-Term Strategy for GHG emission reductions, submitted to the EU on 26 April 2023. This target is more ambitious than the joint nationally determined contribution target of the EU, which is aimed at achieving a 55 per cent reduction below the 1990 level by 2030. In addition, Romania’s Long-Term Strategy has a longer-term target of achieving climate neutrality by 2050.

## 2. Assessment of adherence to the reporting guidelines

34. The ERT assessed the information reported in the BR5 of Romania and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

## D. Information on policies and measures

### 1. Technical assessment of the reported information

35. Romania provided in its NC8 and BR5 information on its PaMs<sup>11</sup> implemented, adopted and planned to fulfil its commitments under the Convention. Romania’s set of PaMs is similar to that previously reported, with a few exceptions. Romania considers that climate change mitigation PaMs are not discontinued, hence no PaMs were reported as expired or repealed during the reporting period.

36. Romania reported on its policy context and legal and institutional arrangements in place for implementing its commitments and monitoring and evaluating the effectiveness of its PaMs. Romania also provided information on changes to its institutional, legal,

<sup>9</sup> According to the EU transaction log.

<sup>10</sup> EU regulation 2023/857 amending EU regulation 2018/842 on binding annual GHG emission reductions by member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement, and EU regulation 2018/1999.

<sup>11</sup> The UNFCCC reporting guidelines on BRs use the term “mitigation actions”, whereas the UNFCCC reporting guidelines on NCs use the term “policies and measures”. The terms are used interchangeably in this report to refer to the relevant information in either the NC or BR.

administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target. The Ministry of Environment, Waters and Forests is the entity responsible for ensuring fulfilment of Romania’s climate change reporting obligations, including the national system for PaMs. The Ministry of Environment, Waters and Forests was restructured in 2022, as a result of which climate activities were integrated under the General Directorate on Impact Assessment, Pollution Control and Climate Change and are implemented by two departments, namely the Climate Strategies and Reporting Department and the Climate Regulation and Implementation Department.

37. Romania’s assessment of the economic and social consequences of its response measures includes established EU processes. In the EU, as part of the European Commission’s Better Regulation agenda, impact assessments are carried out on all initiatives expected to have significant economic, social or environmental impacts, with the findings summarized in an impact assessment report. The reports are published together with the Commission’s legislative proposals or adopted acts. During the review, Romania explained that its actions to identify and review its own policies and practices that encourage activities that lead to greater levels of emissions include monitoring the effect of implemented PaMs by sector annually and periodically preparing updated GHG emission projections in order to identify whether there is a need to update the current policies and practices.

38. In its reporting on PaMs, Romania provided the estimated emission reduction impacts for groups of its PaMs. The Party reported that estimated impacts were not provided for individual PaMs because of a lack of data from the responsible implementing institutions. The impacts of its PaMs were therefore estimated for groups of PaMs by sector.

39. The Party described its general methodology for estimating the impacts of its PaMs, which involves estimating the cumulative impacts by sector. The impacts were estimated by calculating the differences between the projections under the WOM, WEM and WAM scenarios, by sector. To estimate the sectoral impact of PaMs implemented and adopted, Romania reported the differences between the sectoral projections under the WOM and WEM scenarios. Similarly, to estimate the sectoral impact of planned PaMs, Romania reported the differences between the sectoral projections under the WEM and WAM scenarios.

40. The key overarching related cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO<sub>2</sub> emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7<sup>th</sup> Environment Action Programme and the clean air policy package. The 2021 European Climate Law, which forms part of the European Green Deal, made climate neutrality by 2050 legally binding and raised the EU-wide 2030 emission reduction target to at least 55 per cent compared with the 1990 level. In 2023, the EU adopted several pieces of legislation that were part of the “Fit for 55” package intended to help achieve the new 2030 target. These new laws strengthened both the ESR and EU ETS 2030 targets, extended the EU ETS to include maritime shipping in 2024 and established the Social Climate Fund to address equitability of mitigation impacts. They also created the EU ETS 2 to cover at the point of distribution most fuel used in sectors not covered by the EU ETS, beginning in 2027.

41. The 2021–2030 EU-wide policies are operationalized through the national energy and climate plans of EU member States, which should set out national objectives for each of the five dimensions of the Energy Union, namely energy security; the internal energy market; energy efficiency; decarbonization; and research, innovation and competitiveness. The national energy and climate plans are periodically updated to reflect changes to EU policy, such as the implementation of the European Green Deal. Romania’s national energy and climate plan specifies that the country’s national emission reduction commitment is part of the EU’s commitment, namely to reduce GHG emissions from ETS sectors by 43.9 per cent by 2030 compared with the 2005 level, and to reduce GHG emissions from non-ETS sectors to 2 per cent below the 2005 level by 2030, but is subject to the more ambitious amended target described in paragraph 33 above. Furthermore, Romania aims to achieve an overall share of renewable energy in gross final energy consumption of 30.7 per cent in 2030 and to

reduce primary energy consumption by 45.1 per cent by 2030 compared with the PRIMES 2007 baseline and reduce final energy consumption by 40.4 per cent by 2030 compared with the PRIMES 2007 baseline.

42. Romania introduced national-level policies to achieve its targets under the ESD, the ESR and domestic emission reduction targets. The key policies reported are Romania's Sustainable Development Strategy 2030, which defines the national framework for implementing the 2030 Agenda for Sustainable Development and promotes the development of Romania by focusing on economic, social and environmental considerations, and the National Recovery and Resilience Plan, which ensures an optimal balance between EU priorities and Romania's development needs. The estimated mitigation effect of PaMs targeting the energy sector (e.g. the 2021–2030 Integrated National Energy and Climate Plan, the National Action Plan on Energy Efficiency IV, the General Transport Master Plan and the Investment Programme for the Development of Transport Infrastructure for 2021–2030) is the most significant, amounting to 38.6 Mt CO<sub>2</sub> eq in 2025. Other policies that are delivering significant emission reductions are those targeting: (1) the forestry sector (e.g. the organization, management and use of permanent pastureland in support of implementation of government emergency ordinance 34/2013, the support schemes and measures for farmers in Romania, and the State aid scheme entitled "Support for the first afforestation and the creation of forested areas"), with a total estimated mitigation impact of 9.7 Mt CO<sub>2</sub> eq in 2025; (2) the agriculture sector (e.g. the action plan for water protection against pollution from nitrates of agricultural origin, and rules regarding environmental conditions within the schemes and support measures for farmers in Romania), with a total estimated mitigation impact of 5.1 Mt CO<sub>2</sub> eq in 2025; and (3) the industry sector (e.g. the law on industrial emissions, including the legislative conclusions on best available techniques, EU directive 40/2006 on emissions from air-conditioning systems in motor vehicles, and EU regulation 517/2014 on F-gases), with a total estimated mitigation impact of 4.0 Mt CO<sub>2</sub> eq in 2025.

43. Romania highlighted the domestic mitigation actions that are under development, such as those being revised to align with the more ambitious 2030 target of the EU to reduce domestic emissions by at least 55 per cent compared with the 1990 level. Among the mitigation actions that provide a foundation for significant additional action are several cross-cutting PaMs, such as the Sustainable Development Operational Programme 2021–2027 to promote energy efficiency and renewable energy; the Regional Operational Programmes 2021–2027, developed for the sustainable and balanced development of the eight development regions of Romania; and the Just Transition Operational Programme 2021–2027, aimed at responding to the investment needs defined in plans at the local level. Other key planned PaMs include the new Common Agricultural Policy (2023–2027), the National Strategy for Forests 2030 and the National Competitiveness Strategy 2021–2027. Table 5 provides a summary of the reported information on the PaMs of Romania.

Table 5  
Summary of information on policies and measures reported by Romania

| <i>Sector</i>                                | <i>Key PaMs<sup>a</sup></i>  | <i>Estimated mitigation impact in 2020 (kt CO<sub>2</sub> eq)</i> | <i>Estimated mitigation impact in 2030 (kt CO<sub>2</sub> eq)</i> |
|--|--|---|---|
| Policy framework and cross-sectoral measures | Sustainable Development Strategy 2030  | IE  | IE  |
|  | National Recovery and Resilience Plan  | NA  | IE  |
| Energy                                       |  | 32 175.62 <sup>a</sup>  | 46 978.89 <sup>a</sup>  |
| Energy industry                              | 2021–2030 Integrated National Energy and Climate Plan  | NA  | IE  |
|  | National Action Plan on Energy Efficiency IV   | IE  | IE  |
|  | Energy Strategy for 2019–2030, with perspectives for 2050  | IE  | IE  |
| Transport                                    | General Transport Master Plan  | IE  | IE  |
|  | Investment Programme for the Development of Transport Infrastructure for 2021–2030   | NA  | IE  |
| Other sectors (commercial/institutional);    | National Long-term Renovation Strategy to support the renovation of the national residential and non-residential public and private building | IE  | IE  |

| <i>Sector</i> | <i>Key PaMs<sup>a</sup></i>                    | <i>Estimated mitigation impact in 2020 (kt CO<sub>2</sub> eq)</i>  | <i>Estimated mitigation impact in 2030 (kt CO<sub>2</sub> eq)</i> |                       |
|---------------|--|--|---|-----------------------|
| IPPU          | residential; agriculture, forestry, fisheries) | stock into highly efficient and decarbonized building stock by 2030  | 3 652.70 <sup>a</sup>   | 5 611.79 <sup>a</sup> |
|               |  | EU directive 40/2006 on emissions from air-conditioning systems of motor vehicles  | IE  | IE                    |
|               |  | EU regulation 517/2014 on F-gases  | IE  | IE                    |
| Agriculture   |  | 5 847.40 <sup>a</sup>  | 6 098.8 <sup>a</sup>  |                       |
|               |  | Action plan for water protection against pollution from nitrates of agricultural origin  | IE  | IE                    |
|               |  | Rules regarding environmental conditions within the schemes and support measures for farmers in Romania                              | IE  | IE                    |
| LULUCF        |  | 1 865.50 <sup>a</sup>  | 12 937.34 <sup>a</sup>  |                       |
|               |  | State aid scheme “Support for the first afforestation and the creation of forested areas”  | IE  | IE                    |
|               |  | Organization, management and use of permanent pastureland in support of the implementation of government emergency ordinance 34/2013 | IE  | IE                    |
| Waste         |  | 291.59 <sup>a</sup>  | 3 381.36 <sup>a</sup>   |                       |
|               |  | National Waste Management Plan   | IE  | IE                    |

*Note:* The estimated mitigation impacts are estimates of emissions of CO<sub>2</sub> eq avoided in a given year as a result of the implementation of mitigation actions, using GWP values from the AR4.

<sup>a</sup> The estimated mitigation effect represents the total estimated mitigation impact from the sectoral group of PaMs reported under the WEM scenario.

## 2. Assessment of adherence to the reporting guidelines

44. The ERT assessed the information reported in the NC8 and BR5 of Romania and identified an issue relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table I.2.

## 3. Domestic and regional programmes and legislative arrangements and procedures related to the Kyoto Protocol

### (a) Technical assessment of the reported information

45. In its NC8, Romania reported that the implementation of the Kyoto Protocol is underpinned by the common legal framework on climate change. The overall responsibility for climate change policymaking lies with the Ministry of Environment, Waters and Forests, and a number of national institutions are involved in policy implementation, including central public authorities and public institutions, which provide the necessary data and information (e.g. macroeconomic parameters).

46. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Romania committed to contributing to the joint EU effort to reduce GHG emissions by 20 per cent below the base-year level (see paras. 27–29 above).

47. The Party has arrangements and enforcement procedures to meet its commitments under the Kyoto Protocol, including procedures for addressing non-compliance. These include close collaboration with research institutes in decision-making to ensure the timely consideration of necessary measures, as well as collaboration with the Interministerial Committee on Climate Change, established by government decision 563/2022 in April 2022, the National Commission on Climate Change with regard to climate issues for which the Ministry of Environment, Waters and Forests is solely responsible under government decision 1026/2014, and a technical working group under the National Commission on Climate Change. For the process of self-assessment of compliance with its emission reduction commitments, Romania uses data from the national GHG inventory and data and information on the impacts of PaMs to mitigate GHG emissions and enhance removals.

Romania reported that national rules for taking local action against domestic non-compliance with emission reduction targets include only operators under the EU ETS. Rules and procedures for non-compliance in other areas are under development.

48. Romania provided an overall description of the provisions in place to make information on legislative arrangements and administrative procedures related to compliance and enforcement publicly accessible. However, the Party did not include information on the institutions responsible for publishing this information and the national websites on which this information is available. During the review, the Party explained that the Ministry of Environment, Waters and Forests is responsible for publishing this information on its website, which is regularly updated.

49. Romania has national legislative arrangements and administrative procedures in place that seek to ensure that the implementation of activities under Article 3, paragraph 3, and any 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. These arrangements and procedures are included in national and sectoral legislation, including the National Forestry Strategy for 2030, which promotes and ensures the conservation of the environment and the sustainable use of natural resources. Biodiversity conservation and improvement efforts are also carried out in accordance with law 46/2008 to ensure that the required ecological conditions are achieved.

**(b) Assessment of adherence to the reporting guidelines**

50. The ERT assessed the information reported in the NC8 of Romania and identified an issue relating to transparency, and thus adherence to the reporting guidelines for supplementary information. The finding is described in table I.6.

**4. Policies and measures in accordance with Article 2 and minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol**

**(a) Technical assessment of the reported information**

51. In the NC8 Romania reported information on how it 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. Romania reported that the national policies developed to date in response to climate change and to reduce GHG emissions have no impact on developing countries. The Party further reported that its climate policy follows EU policy, which takes into account the minimization of adverse effects of PaMs to reduce emissions at the preparation stage. Sustainability criteria are added to relevant PaMs in order to minimize adverse environmental effects, for example those for biofuels, which include provisions to ensure that production is sustainable.

52. The NC8 includes an overview of how Romania promotes and implements the decisions of ICAO and IMO to limit emissions from aviation and marine bunker fuels. Romania follows and implements EU maritime and aviation policies, including in relation to large ships docking at EU ports to report on their fuel consumption both under the IMO system and under the EU regulation on the monitoring, reporting and verification of CO<sub>2</sub> emissions from maritime transport. During the review, Romania provided detailed information on national activities and the relevant EU regulations to implement ICAO and IMO decisions in accordance with Article 2 of the Kyoto Protocol.

53. Further information on how Romania strives to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties was reported in the 2022 annual submission. While reporting that its carbon mitigation policy has no adverse impacts on other countries, particularly developing countries, Romania acknowledged that the technical and financial assistance it provides to developing countries is very important for the development of international policy on climate change. One example is the Party's plans to provide fast-start finance for energy efficiency and transport infrastructure projects aimed at developing climate change mitigation policy and the efficient use of natural resources.



Romania contributes to the Eastern Europe Energy Efficiency and Environment Partnership Fund (providing funding of 270,000 new leu (lei) in 2016), which supports energy efficiency and environmental sustainability projects in Armenia, Georgia, the Republic of Moldova and Ukraine. As part of its bilateral cooperation efforts in the area of adaptation, Romania also provided support to Georgia for disaster prevention and preparedness.

**(b) Assessment of adherence to the reporting guidelines**

54. The ERT assessed the information reported in the NC8 of Romania and identified an issue relating to transparency, and thus adherence to the reporting guidelines for supplementary information. The finding is described in table I.6.

**E. Estimates of emission reductions and removals and the use of units from market-based mechanisms and land use, land-use change and forestry and progress in achieving the quantified economy-wide emission reduction target**

**1. Technical assessment of the reported information**

55. Romania reported in its BR5 that it did not use units from market-based mechanisms under the Kyoto Protocol and other market-based mechanisms under the Convention to meet its commitment under the ESD. It reported in CTF tables 4 and 4(b) that it did not use any units from market-based mechanisms in 2019 or 2020. Given that the contribution of LULUCF activities is not included in the joint EU target under the Convention, reporting thereon is not applicable to Romania. Table 6 illustrates Romania’s ESD emissions and use of units from market-based mechanisms for achieving its ESD target.

Table 6  
**Summary of information on emissions covered by the European Union effort-sharing decision annual emission allocation and use of units from market-based mechanisms by Romania**  
 (kt CO<sub>2</sub> eq)

| <i>Year</i> | <i>ESD emissions</i> | <i>AEA</i> | <i>Use of units from market-based mechanisms</i> | <i>AEAs transferred to (–) or from (+) other Parties</i> | <i>Annual AEA surplus/deficit</i> | <i>Cumulative AEA surplus/deficit</i> |
|-------------|----------------------|------------|--|--|-----------------------------------|---------------------------------------|
| 2013        | 72 718.62            | 75 630.01  | NA   | NA   | 2 911.39                          | 2 911.39                              |
| 2014        | 72 534.13            | 77 452.13  | NA   | NA   | 4 917.99                          | 7 829.38                              |
| 2015        | 74 555.38            | 79 274.25  | NA   | NA   | 4 718.87                          | 12 548.26                             |
| 2016        | 73 123.04            | 81 096.38  | NA   | NA   | 7 973.33                          | 20 521.59                             |
| 2017        | 75 363.25            | 84 055.28  | NA   | NA   | 8 692.04                          | 29 213.63                             |
| 2018        | 77 639.31            | 85 973.34  | NA   | NA   | 8 334.03                          | 37 547.66                             |
| 2019        | 75 211.34            | 87 891.40  | NA   | NA   | 12 680.06                         | 50 227.71                             |
| 2020        | 77 123.54            | 89 809.45  | NA   | NA   | 12 685.92                         | 62 913.63                             |

*Sources:* Romania’s BR5 and BR5 CTF table 4(b), and EU transaction log (AEAs), which use GWP values from the AR4.

*Note:* For a given year, a positive number (surplus) indicates that annual or cumulative ESD emissions were lower than the corresponding AEA or cumulative AEAs, while a negative number (deficit) indicates that annual or cumulative ESD emissions were higher than the corresponding AEA or cumulative AEAs.

**2. Assessment of adherence to the reporting guidelines**

56. The ERT assessed the information reported in the BR5 of Romania and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

**3. Assessment of achievement of the quantified economy-wide emission reduction target**

57. In assessing Romania’s contribution towards achievement of the 2020 joint EU target on the basis of the information reported in its BR5, the ERT noted that, under the EU 2020 climate and energy package, Romania committed to limiting its emissions growth under the

ESD to 19 per cent above the 2005 level by 2020 (see para. 32 above). This target has been translated into binding quantified AEAs for 2013–2020. In 2020 Romania’s ESD emissions were 14.1 per cent (12,685.92 kt CO<sub>2</sub> eq) below the AEA. Romania has a cumulative surplus of 62,913.63 kt CO<sub>2</sub> eq with respect to its AEAs between 2013 and 2020. The ERT noted that the Party did not make use of units from market-based mechanisms in 2020.

58. The ERT noted that the EU’s BR5 reports that the total GHG emissions excluding LULUCF of the EU and including the use of units from market-based mechanisms do not exceed the emission level corresponding to the target in 2020, and thus that the EU has achieved its joint target. See the report on the technical review of the BR5 of the EU for further details. Therefore, the ERT concluded that, on the basis of the information reported in the BR5, Romania has met its 2020 commitment under the Convention through its contribution to achieving the joint EU target.

59. The ERT noted that the Party’s ESD emissions in 2020 do not exceed its AEA for 2020.

## **F. Projections**

### **1. Projections overview, methodology and results**

#### **(a) Technical assessment of the reported information**

60. Romania reported in its BR5 and NC8 updated projections for 2025–2040 relative to actual inventory data for 2020 under the WEM scenario, using GWP values from the AR4. The WEM scenario reported by Romania includes PaMs implemented and adopted by the end of 2022.

61. In addition to the WEM scenario, Romania reported the WAM and WOM scenarios. The WAM scenario includes planned PaMs, while the WOM scenario excludes all PaMs implemented, adopted or planned after 2005 for all sectors except the LULUCF sector. For the LULUCF sector, the WOM scenario excludes PaMs adopted or planned after 2013. Romania provided a definition of its scenarios, explaining that its WEM scenario includes PaMs such as the Sustainable Development Strategy 2030, the National Recovery and Resilience Plan, the 2021–2030 Integrated National Energy and Climate Plan and the National Action Plan on Energy Efficiency IV, while its WAM scenario includes PaMs such as the Sustainable Development Operational Programme 2021–2027, the Regional Operational Programme 2021–2027 and the Just Transition Operational Programme 2021–2027, all of which have 2023 as the start year of implementation. The definitions indicate that the scenarios were prepared in accordance with the UNFCCC reporting guidelines on BRs.

62. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, PFCs, HFCs and SF<sub>6</sub> (treating PFCs and HFCs collectively in each case) for 2025–2040, with NF<sub>3</sub> emissions projected as “NO”. The projections are also provided in an aggregated format for each sector and for a Party total using GWP values from the AR4. Romania reported on factors and activities affecting emissions for each sector, such as changes in fuel prices and the number of households in Romania.

63. The ERT notes that projections of EU ETS emissions, emissions covered by the ESD and ESR, and emissions and removals covered by the EU LULUCF regulation were not reported separately. The ERT notes that including such information in the NC and BR would facilitate a better understanding of the Party’s projections.

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

64. The methodology used for the preparation of the projections is different from that used for the preparation of the emission projections for the NC7. During the review, Romania provided information on changes since the submission of its NC7 in the assumptions, methodologies, models and approaches used for the projection scenarios. The major

methodological changes made since the NC7 affect the energy sector (including transport) and the LULUCF sector.

65. Projected energy consumption is modelled using the DOBRESU model operated by the National Commission for Strategy and Prognosis. The DOBRESU model is a macroeconomic model covering all economic sectors, including energy consumption, and is adapted to the Romanian economy. The modelling approach used for the NC8/BR5 is identical to the approach used for the BR4, but differs from that used for the NC7, for which a top-down model developed by the Argonne National Laboratory for the energy sector was used. Information on a model comparison between the approach used for the NC8/BR5 with that used for the NC7 approach is not available. Modelling assumptions have been updated since the BR4 to consider in particular the effects of the pandemic and the recent geopolitical situation affecting energy supply and demand structures, and energy prices.

66. For the LULUCF sector, the NC8/BR5 modelling approach was updated and further refined compared with the NC7/BR4. This was reflected in the shift from the use of tier 1 estimation methods and default EFs to the use of higher-tier methods and country-specific EFs.

67. To prepare its projections, Romania relied on key underlying assumptions relating to population, energy prices and economic development indicators. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections. Romania's population is projected to decrease from 19.2 million in 2021 to 16.6 million by 2040. However, the number of households is projected to increase slightly from 9.16 million in 2020 to 9.20 million in 2025 and to remain constant thereafter until 2040. Annual GDP growth is projected to decrease from 5.05 per cent annually in 2021–2025 to 1.27 per cent annually in 2036–2040. Assumptions for international energy prices were made in line with the latest available guidance from the European Commission as at April 2022: crude oil prices are projected to remain constant at 2020 EUR 15.4/GJ between 2022 and 2035, followed by a rise to 2020 EUR 16.3/GJ by 2040; natural gas prices are assumed to decline from 2020 EUR 33.2/GJ in 2022 to 2020 EUR 11.3/GJ in 2030 and to remain constant until 2040; and coal prices are assumed to decline from 2020 EUR 5.3/GJ in 2022 to 2020 EUR 3.1/GJ in 2025, and to remain constant until 2035, followed by a rise to 2020 EUR 3.3/GJ by 2040.

68. Sensitivity analyses were conducted for a number of important assumptions, such as GDP growth and energy consumption for the energy sector emissions, and climate change effects on CO<sub>2</sub> removals in the LULUCF sector. The 'minimum' sensitivity scenario was applied until 2030 using assumptions based on lower annual GDP growth rates relative to the baseline 'reference' scenario (i.e. the WEM scenario), namely a growth rate of 3.90 per cent instead of 5.05 per cent for 2020–2025, and of 3.19 per cent instead of 3.52 per cent for 2026–2030. For the 'maximum' sensitivity scenario, assumptions based on higher annual GDP growth rates were applied until 2030, namely 5.71 per cent instead of 5.05 per cent for 2020–2025 and 3.78 per cent instead of 3.52 per cent for 2026–2030. The results of the analyses indicate that the GDP growth rate has a direct and significant impact on GHG emissions. However, the increase in emissions in the 'maximum' scenario is smaller than the decrease in the 'minimum' scenario, because the higher the GDP the more funds will be available for new technologies. Energy-related CO<sub>2</sub> emissions projected under the sensitivity scenarios for 2030 deviate relative to the 'reference' scenario by –6.7 per cent under the 'minimum' scenario and by +2.3 per cent under the 'maximum' scenario. For 2040, the respective deviations are –13.4 per cent under the 'minimum' scenario and –0.3 per cent under the 'maximum' scenario, where higher GDP growth rates in the longer-term result in emission reductions. In 2040 LULUCF CO<sub>2</sub> removals in the additional sensitivity scenario, which does not consider climate change impacts on the Romanian LULUCF sector, are approximately 20 per cent higher than in the WOM scenario, which includes these impacts.

### (c) Results of projections

69. The projected emission levels under different scenarios are presented in table 7 and figure 1.

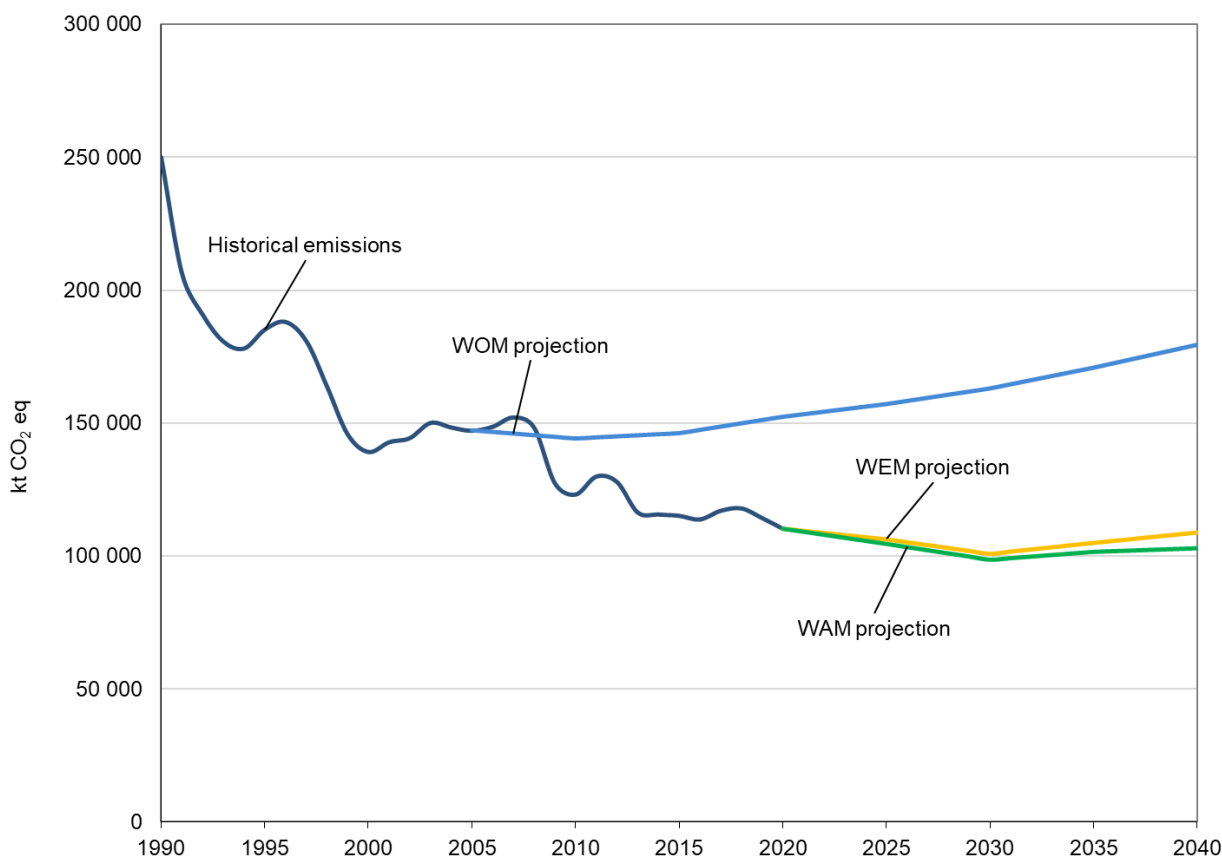
Table 7  
**Summary of greenhouse gas emission projections for Romania**

|                          | <i>GHG emissions<br/>(kt CO<sub>2</sub> eq/year)</i> | <i>Change in relation to<br/>1990 level (%)</i> | <i>Change in relation to<br/>2020 level (%)</i> |
|--------------------------|--|---|---|
| Inventory data 1990      | 250 041.72   | NA  | NA  |
| Inventory data 2020      | 110 366.83   | -55.9   | NA  |
| WOM projections for 2030 | 163 066.99   | -34.8   | 47.7  |
| WEM projections for 2030 | 100 996.06   | -59.6   | -8.5  |
| WAM projections for 2030 | 98 738.68  | -60.5   | -10.5   |
| WOM projections for 2040 | 179 570.79   | -28.2   | 62.7  |
| WEM projections for 2040 | 108 933.47   | -56.4   | -1.3  |
| WAM projections for 2040 | 103 035.28   | -58.8   | -6.6  |

Sources: Romania’s BR5, BR5 CTF table 1 and NC8, which use GWP values from the AR4.

Note: The projections are of GHG emissions excluding LULUCF and excluding indirect CO<sub>2</sub>.

Figure 1  
**Greenhouse gas emission projections reported by Romania**

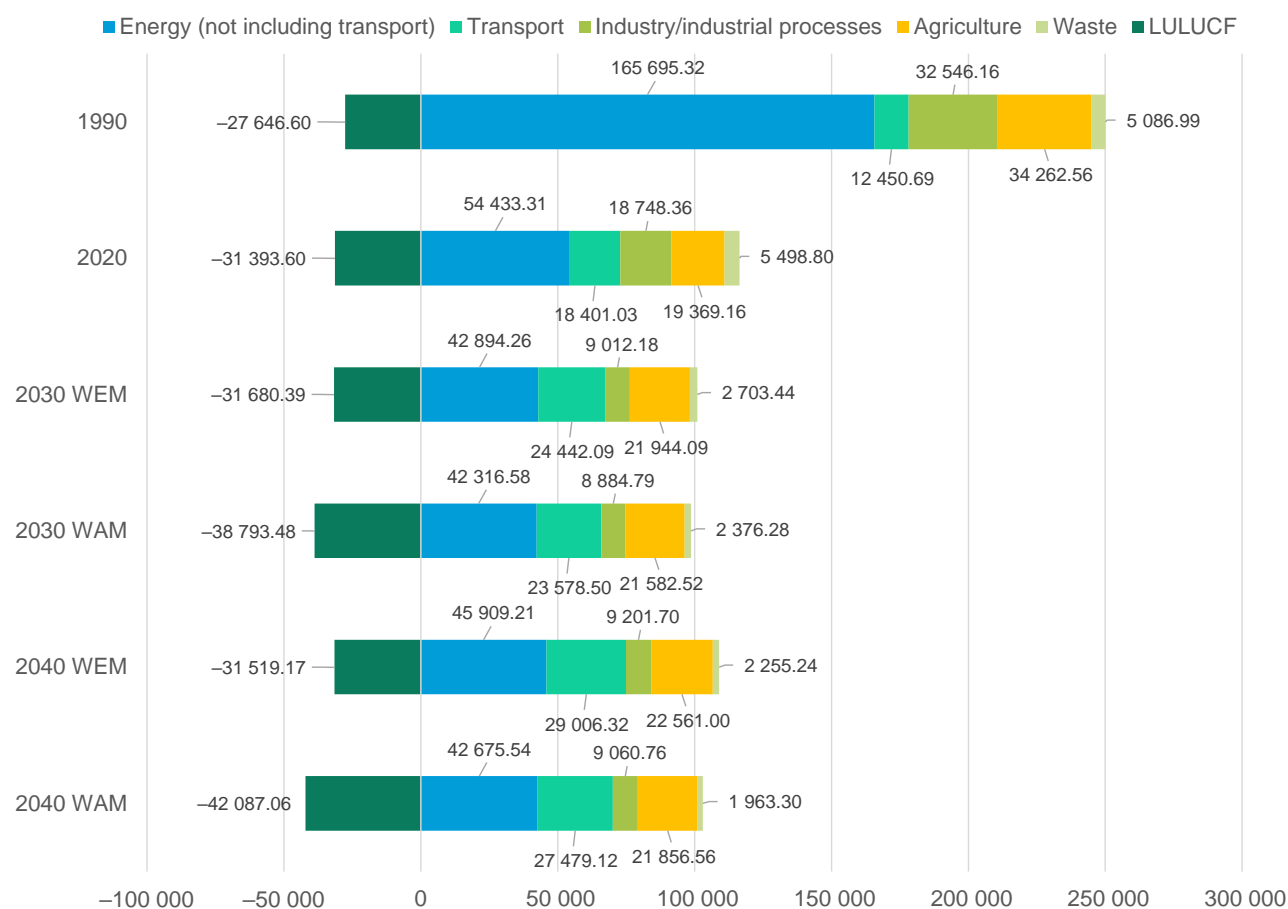


Sources: Romania’s NC8 and BR5 CTF tables 1 and 6 (total GHG emissions excluding LULUCF), which use GWP values from the AR4.

70. Romania’s total GHG emissions excluding LULUCF are projected under the WEM scenario to decrease by 59.6 and 56.4 per cent respectively below the 1990 level in 2030 and 2040. When including LULUCF, total GHG emissions are projected under the WEM scenario to decrease by 68.8 and 65.2 per cent respectively below the 1990 level in 2030 and 2040. Under the WAM scenario, emissions excluding LULUCF in 2030 and 2040 are projected to be lower than those in 1990 by 60.5 and 58.8 per cent respectively. When including LULUCF, total GHG emissions under the WAM scenario are projected to be lower than those in 1990 by 73.0 and 72.6 per cent respectively.

71. Romania presented the WEM and WAM scenarios by sector for 2030 and 2040, as summarized in figure 2 and table 8.

Figure 2  
**Greenhouse gas emission projections for Romania presented by sector**  
 (kt CO<sub>2</sub> eq)



Sources: Romania's NC8 and BR5 CTF table 1.

Table 8  
**Summary of greenhouse gas emission projections for Romania presented by sector**

| Sector                                      | GHG emissions and removals (kt CO <sub>2</sub> eq) |                   |                  |                   |                   | Change (%)   |              |              |              |
|---|--|-------------------|------------------|-------------------|-------------------|--------------|--------------|--------------|--------------|
|   | 1990   | 2030              |                  | 2040              |                   | 1990–2030    |              | 1990–2040    |              |
|   |  | WEM               | WAM              | WEM               | WAM               | WEM          | WAM          | WEM          | WAM          |
| Energy (not including transport)            | 165 695.32   | 42 894.26         | 42 316.58        | 45 909.21         | 42 675.54         | -74.1        | -74.5        | -72.3        | -74.2        |
| Transport                                   | 12 450.69  | 24 442.09         | 23 578.50        | 29 006.32         | 27 479.12         | 96.3         | 89.4         | 133.0        | 120.7        |
| Industry/industrial processes               | 32 546.16  | 9 012.18          | 8 884.79         | 9 201.70          | 9 060.76          | -72.3        | -72.7        | -71.7        | -72.2        |
| Agriculture                                 | 34 262.56  | 21 944.09         | 21 582.52        | 22 561.00         | 21 856.56         | -36.0        | -37.0        | -34.2        | -36.2        |
| LULUCF                                      | -27 646.60   | -31 680.39        | -38 793.48       | -31 519.17        | -42 087.06        | -14.6        | -40.3        | -14.0        | -52.2        |
| Waste                                       | 5 086.99   | 2 703.44          | 2 376.28         | 2 255.24          | 1 963.30          | -46.9        | -53.3        | -55.7        | -61.4        |
| Other                                       | NO   | NO                | NO               | NO                | NO                | NA           | NA           | NA           | NA           |
| <b>Total GHG emissions excluding LULUCF</b> | <b>250 041.72</b>                                  | <b>100 996.06</b> | <b>98 738.68</b> | <b>108 933.47</b> | <b>103 035.28</b> | <b>-59.6</b> | <b>-60.5</b> | <b>-56.4</b> | <b>-58.8</b> |

Sources: Romania's NC8 and BR5 CTF table 1, which use GWP values from the AR4.

72. According to the projections reported for 2030 under the WEM scenario, the most significant absolute emission reductions are expected to occur in the energy sector (excluding transport), amounting to projected reductions of 74.1 per cent between 1990 and 2030. A

significant factor in the emission reductions after 2020 is the decrease in the use of solid fossil fuels in electricity generation to zero by 2030 under the WEM scenario, resulting in reduced emissions from energy industries and associated fugitive emissions. The pattern of projected emissions reported for 2030–2040 under the WEM scenario is significantly different as they are projected to rise in all sectors except the waste sector. The largest increase in absolute terms is expected for the transport sector, amounting to a projected increase in emissions of 18.7 per cent between 2030 and 2040, which is, however, lower than the expected increase of 32.8 per cent in 2020–2030 owing to implemented PaMs. Under the WEM scenario, the share of emissions from the energy sector (excluding transport) in total emissions without LULUCF is projected to fall from 67.1 per cent in 1990 to 42.5 per cent in 2030 and to 42.1 per cent in 2040. At the same time, the share of emissions from the transport sector is projected to increase from 4.8 per cent in 1990 to 24.2 per cent in 2030 and to 26.6 per cent in 2040. A significant increase in the share of emissions is also projected for the agriculture sector, contributing 13.5 per cent of total emissions excluding LULUCF in 1990, 21.7 per cent in 2030 and 20.7 per cent in 2040. Net CO<sub>2</sub> removals in the LULUCF sector were equivalent to 11.1 per cent of total emissions excluding LULUCF in 1990; that ratio is projected to increase under the WEM scenario to 31.4 per cent in 2030 and to 28.9 per cent in 2040.

73. The most significant deviations between the WEM and WAM scenarios are in the energy sector (excluding transport) and the LULUCF sector. The projected emissions in the energy sector in 2040 under the WAM scenario are 7.0 per cent below those projected under the WEM scenario. For 2030, the projected emissions in the energy sector under the WAM scenario are only 1.3 per cent below the respective emissions under the WEM scenario. Net CO<sub>2</sub> removals in the LULUCF sector under the WAM scenario are projected to be 22.5 per cent above the removals projected under the WEM scenario for 2030 and 33.5 per cent above for 2040, mainly owing to additional planting activity, which will increase the forest land area to approximately 56,700 ha during 2020–2030. Under the WAM scenario, net CO<sub>2</sub> removals in the LULUCF sector are equivalent to 39.3 per cent of total emissions without LULUCF in 2030 and to 40.8 per cent in 2040.

74. Romania presented the WEM and WAM scenarios by gas for 2030 and 2040, as summarized in table 9.

Table 9

**Summary of greenhouse gas emission projections for Romania presented by gas**

| <i>Gas<sup>a</sup></i>                    | <i>GHG emissions and removals (kt CO<sub>2</sub> eq)</i> |                   |                  |                   |                   | <i>Change (%)</i> |              |                  |              |
|---|--|-------------------|------------------|-------------------|-------------------|-------------------|--------------|------------------|--------------|
|   | <i>1990</i>  | <i>2030</i>       |                  | <i>2040</i>       |                   | <i>1990–2030</i>  |              | <i>1990–2040</i> |              |
|   |  | <i>WEM</i>        | <i>WAM</i>       | <i>WEM</i>        | <i>WAM</i>        | <i>WEM</i>        | <i>WAM</i>   | <i>WEM</i>       | <i>WAM</i>   |
| CO <sub>2</sub>                           | 173 463.87   | 65 807.56         | 64 313.16        | 74 226.46         | 69 458.72         | –62.1             | –62.9        | –57.2            | –60.0        |
| CH <sub>4</sub>                           | 52 379.51  | 22 153.45         | 21 458.91        | 20 951.24         | 19 943.50         | –57.7             | –59.0        | –60.0            | –61.9        |
| N <sub>2</sub> O                          | 21 389.26  | 11 243.60         | 11 175.16        | 12 071.98         | 11 949.27         | –47.4             | –47.8        | –43.6            | –44.1        |
| HFCs                                      | 0.18   | 1 760.80          | 1 760.80         | 1 654.97          | 1 654.97          | 978 121.7         | 978 121.7    | 919 327.8        | 919 327.8    |
| PFCs                                      | 2 808.43   | 3.50              | 3.50             | 3.74              | 3.74              | –99.9             | –99.9        | –99.9            | –99.9        |
| SF <sub>6</sub>                           | 0.47   | 27.15             | 27.15            | 25.08             | 25.08             | 5 677.6           | 5 677.6      | 5 236.2          | 5 236.2      |
| NF <sub>3</sub>                           | NO   | NO                | NO               | NO                | NO                | NA                | NA           | NA               | NA           |
| <b>Total GHG emissions without LULUCF</b> | <b>250 041.72</b>  | <b>100 996.06</b> | <b>98 738.68</b> | <b>108 933.47</b> | <b>103 035.28</b> | <b>–59.6</b>      | <b>–60.5</b> | <b>–56.4</b>     | <b>–58.8</b> |

*Sources:* Romania's NC8 and BR5 CTF table 6, which use GWP values from the AR4. Updated projections were provided by Romania during the review.

<sup>a</sup> Romania did not include indirect CO<sub>2</sub> emissions in its projections.

75. CO<sub>2</sub> continues to be the most relevant GHG under both the WEM and WAM scenarios. The share of CO<sub>2</sub> in total emissions without LULUCF was 68.1 per cent in 1990 and is projected to be 68.1 per cent in 2040 under the WEM scenario, or 67.4 per cent under the WAM scenario. The share of CH<sub>4</sub> emissions is projected to decrease from 23.0 per cent in 1990 to 19.2 per cent in 2040 under the WEM scenario, or to 19.4 per cent under the WAM

scenario. The share of N<sub>2</sub>O emissions in total emissions without LULUCF is projected to increase from 7.4 per cent in 1990 to 11.1 per cent in 2040 under the WEM scenario, or to 11.6 per cent under the WAM scenario. Furthermore, the respective share of F-gases is projected to increase from 1.0 per cent in 1990 to 1.5 per cent in 2040 under the WEM scenario, or to 1.6 per cent under the WAM scenario.

76. Among the F-gases, PFCs contributed 100.0 per cent to total F-gas emissions in 1990. In 2020, HFCs contributed 95.9 per cent, PFCs contributed 0.2 per cent and SF<sub>6</sub> contributed 3.9 per cent. This trend is projected to continue in 2040, with HFCs contributing 98.3 per cent to total F-gas emissions, PFCs contributing 0.2 per cent and SF<sub>6</sub> contributing 1.5 per cent, both under the WEM and WAM scenarios.

**(d) Assessment of adherence to the reporting guidelines**

77. The ERT assessed the information reported in the NC8 and BR5 of Romania and identified issues relating to completeness and transparency, and thus adherence to the UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BRs. The findings are described in tables I.3 and II.2.

**2. Assessment of the total effect of policies and measures**

**(a) Technical assessment of the reported information**

78. In its NC8 Romania presented the estimated and expected total effect of implemented and adopted PaMs and an estimate of the total effect of its PaMs, in accordance with the WEM scenario, compared with a situation without such PaMs. In addition, Romania presented the estimated aggregated effect of planned PaMs in accordance with the WAM scenario. Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO<sub>2</sub> eq basis), in 2025, 2030, 2035 and 2040.

79. Romania reported that the total estimated effect of its implemented and adopted PaMs is 75,008.27 kt CO<sub>2</sub> eq in 2030 and 89,378.89 kt CO<sub>2</sub> eq in 2040. The additional estimated effect of planned PaMs is 9,370.48 kt CO<sub>2</sub> eq in 2030 and 16,466.08 kt CO<sub>2</sub> eq in 2040. According to the information reported in its NC8, PaMs implemented in the energy sector will deliver the largest emission reductions. Among the planned PaMs, those for the LULUCF sector are the most relevant in terms of their contribution to total GHG emission reductions. Table 10 provides an overview of the total effect of PaMs as reported by Romania.

Table 10  
**Projected effects of Romania's planned, implemented and adopted policies and measures in 2030 and 2040**  
 (kt CO<sub>2</sub> eq)

| Sector                        | 2030                                       |                            | 2040                                       |                            |
|-------------------------------|--|----------------------------|--|----------------------------|
|                               | Effect of implemented and adopted measures | Effect of planned measures | Effect of implemented and adopted measures | Effect of planned measures |
| Energy (without transport)    | 45 282.56                                  | 577.67                     | 44 857.99                                  | 3 233.67                   |
| Transport                     | 1 696.33                                   | 863.59                     | 6 389.55                                   | 1 527.20                   |
| Industry/industrial processes | 5 611.79                                   | 127.39                     | 6 450.93                                   | 140.95                     |
| Agriculture                   | 6 098.89                                   | 361.57                     | 9 222.95                                   | 704.44                     |
| Land-use change and forestry  | 12 937.34                                  | 7 113.10                   | 18 741.56                                  | 10 567.89                  |
| Waste management              | 3 381.36                                   | 327.16                     | 3 715.91                                   | 291.93                     |
| <b>Total</b>                  | <b>75 008.27</b>                           | <b>9 370.48</b>            | <b>89 378.89</b>                           | <b>16 466.08</b>           |

Sources: Romania's NC8 and BR5 CTF table 3, which use GWP values from the AR4.

Note: The total effect of implemented and adopted PaMs is defined as the difference between the WOM and the WEM scenarios; the total effect of planned PaMs is defined as the difference between the WAM and the WEM scenarios.

**(b) Assessment of adherence to the reporting guidelines**

80. The ERT assessed the information reported in the NC8 of Romania and identified an issue relating to transparency, and thus adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table I.3.

**3. Supplementary relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol****(a) Technical assessment of the reported information**

81. In the NC8 Romania reported that it does not plan to use market-based mechanisms to meet its Kyoto Protocol target. The ERT notes that reporting on the supplementary of such mechanisms is therefore not relevant for Romania.

**(b) Assessment of adherence to the reporting guidelines**

82. The ERT assessed the information reported in the NC8 of Romania and recognized that the reporting is complete and transparent, and thus adheres to the reporting guidelines for supplementary information. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

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

83. Romania is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3–5, of the Convention. However, Romania provided information in its NC8 and BR5 on its provision of support to developing country Parties. The ERT commends Romania for reporting this information and suggests that it continue to do so in future NCs. Romania provided financial contributions in 2019–2020 through multilateral channels aimed at enhancing implementation of the Convention. According to the NC8, Romania contributed 2,196,729.47 new leu (lei) (USD 518,353.30) through multilateral channels in 2019 and 4,754,288.18 new leu (lei) (USD 1,120,237.55) in 2020.

**H. Vulnerability assessment, climate change impacts and adaptation measures****1. Technical assessment of the reported information**

84. In its NC8 Romania provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b), of the Convention with regard to adaptation. Romania provided a description of climate change vulnerability and impacts in terms of climate hazards (e.g. droughts, heatwaves, wildfires, floods), and impacts on human systems and ecosystems. Romania also highlighted the adaptation response actions taken and planned at different levels of government. Vulnerable sectors include agriculture, water resources and human health. A number of adaptation measures are being implemented through various programmes and initiatives, such as State-funded adaptation measures consistent with the EU Common Agricultural Policy.

85. Romania has addressed adaptation matters through the National Strategy on Climate Change, adopted in 2013. The Party is currently updating the National Adaptation Strategy and associated Adaptation Action Plan to cover the period up to 2030, with perspectives until 2050. The strategy proposes a systemic sectoral and cross-sectoral approach to adaptation, with objectives aligned with EU-wide targets covering 13 key sectors. It also sets a more effective monitoring framework for adaptation actions. Romania also implements national research activities and participates in international and EU programmes, such as Horizon 2020, Horizon Europe and the Joint Programming initiative. The National Adaptation



Strategy provides further direction to government agencies on enhancing preparedness for climate change.

86. Romania reported on the analysis carried out using data collected from meteorological stations from 1961 to 2021, which highlighted significant increases in the average temperature in winter and summer, an increase in precipitation in autumn, an increase in maximum daily precipitation in winter and in summer, and an increase in the maximum duration of heatwaves in the southern and western regions of Romania. Many of these observed trends are expected to continue in the short term, and some of them are expected to intensify in the medium to long term as global warming accelerates towards the end of the twenty-first century. During the review, Romania provided several examples of its research activities related to climate change impacts and vulnerability, for example an assessment of the health risks resulting from the increase in the average daily temperature in Bucharest from 1999 to 2019 for different age groups and by gender. The ERT notes that providing such examples in the NC could enhance the transparency of the information reported on climate impacts and vulnerability for key sectors. Table 11 summarizes the information on vulnerability and adaptation to climate change presented in the NC8 of Romania.

Table 11  
**Summary of information on vulnerability and adaptation to climate change reported by Romania**

| <i>Vulnerable area</i>             | <i>Examples/comments/adaptation measures reported</i>  |
|------------------------------------|--|
| Agricultural and rural development | <p>Vulnerability: Climate vulnerabilities are related to droughts in summer and extreme events such as heatwaves and extreme precipitation, while the key non-climate-related vulnerability is the fragmentation of land owned by farmers, which acts as a barrier to climate adaptation.</p> <p>Adaptation: Risk management schemes (under the EU Common Agricultural Policy); and ‘green’ payments (through the European Agricultural Guarantee Fund) and other incentives for sustainable agricultural practices.</p>   |
| Water resources                    | <p>Vulnerability: Reduced water resources and enhanced competition between users.</p> <p>Adaptation: Actions include investments in reducing losses in water distribution networks and in the reuse of treated wastewater in the industrial sector; setting priorities for water consumption; upgrading the existing radar network to measure extreme precipitation and map areas of flood risk; and reassessing regulations for monitoring and managing construction activities in high flood risk areas.</p>   |
| Human health and environment       | <p>Vulnerability: Enhanced heat stress due to local pollution; changes in vector-borne pathogens such as West Nile virus; and higher allergen-related risks owing to prolonged vegetation seasons.</p> <p>Adaptation: Developing the capacity to monitor climate hazards that have an impact on public health; strengthening the national emergency management systems; and implementing a holistic approach to urban planning and infrastructure development for a better integration of climate change adaptation measures.</p>  |
| Industry                           | <p>Vulnerability: Transition to the circular economy and to climate neutrality will require rapid and effective changes in the industry sector.</p> <p>Adaptation: Actions to increase the use of insurance against industrial losses due to climate hazards are being considered, including the development of climate change insurance solutions and the creation of climate risk insurance funds for industry.</p>  |
| Tourism and recreation             | <p>Vulnerability: Reduced snowfall in the mountainous regions of Romania will affect tourism in the winter; and reduced water resources will result in enhanced competition.</p> <p>Adaptation: Strategic planning at the national level, paying special attention to competitive tourism sectors and those that are less vulnerable to climate change (e.g. ecotourism and spa tourism); supporting the development of mountain eco-resorts to operate in all four seasons of the year; and adapting coastal tourism to climate change in the context of a prolonged summer season.</p> |
| Biodiversity and forestry          | <p>Vulnerability: Loss of biodiversity due to enhanced thermal stress and reduced water resources.</p> <p>Adaptation: Assessing the vulnerability of natural habitats and protected species to climate change; integrating climate change adaptation into national strategies and action plans for the protection of species, especially to control alien invasive species; using</p>  |

| <i>Vulnerable area</i> | <i>Examples/comments/adaptation measures reported</i>   |
|------------------------|---|
|                        | green infrastructure to ensure the connectivity of populations or ecological corridors; improving the conservation status of swamps, lakes and dykes; restoring and/or ensuring the ecological recovery of wetland habitats in the lower Danube Basin; and implementing measures for sustainable forest management. |

87. During the review, Romania provided information on bilateral cooperation with developing countries on adaptation, such as initiatives conducted in cooperation with the Republic of Moldova. Romania has a cooperation agreement in place between the National Meteorological Administration of Romania and the State Hydrometeorological Service of the Republic of Moldova. The main areas of cooperation covered by the agreement are meteorology, agrometeorology, climatology, geographic information systems, meteorological data and services, exchanging best practices, and developing methodologies and strategies related to climate change. Romania and the Republic of Moldova are also considering undertaking a review of the legislative framework under the cooperative agreement to harmonize applied research programmes and promote best available methodologies for sharing knowledge in common fields of interest.

## **2. Assessment of adherence to the reporting guidelines**

88. The ERT assessed the information reported in the NC8 of Romania and identified issues relating to completeness, and thus adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table I.4.

### **I. Research and systematic observation**

#### **1. Technical assessment of the reported information**

89. In its NC8 Romania provided information on its general policy and funding relating to research and systematic observation and both domestic and international activities, including contributions to the World Climate Programme, GCOS and the IPCC.

90. Romania has implemented and planned international and domestic policies and programmes on climate change research, systematic observation and climate modelling that aim to advance capabilities to predict and observe the physical, chemical, biological and human components of the Earth’s system over space and time. The main coordinator of research in Romania is the Ministry of Research, Innovation and Digitalization, which provides the basic funding for national research and development institutes and, together with the Ministry of Education, offers financial support for research projects selected from national calls organized by the Executive Agency for Higher Education, Research, Development and Innovation Funding. Romania’s research on climate change is synchronized with major international scientific programmes in the field of global climate change research, such as the involvement of the National Meteorological Administration in the scientific activities of the World Climate Research Programme. Romania has also contributed to the work of the IPCC through participation of an expert in the development of the IPCC AR6, the first volume of which was published in 2021. The National Meteorological Administration coordinates Romania’s contributions to the IPCC. Romanian institutions have carried out research projects within the Horizon 2020 and Horizon Europe framework programmes and have participated in COST actions and other European climate-related programmes. Romania is a member of the EU Joint Programming initiative in the areas of water, oceans, agriculture, and food security and climate change, and is an associate member in the area of climate.

91. In terms of activities related to systematic observation, Romania reported on national plans, programmes and support for ground- and space-based climate observing systems, including satellite and non-satellite climate observation. Romania also reported on activities related to the maintenance of a consistent and comprehensive observation system. Romania participates in various climate-related monitoring activities at the national level and in European and international monitoring programmes. Romania operates observation systems for monitoring essential climate variables, covering atmospheric climate variables (including

measurements of atmospheric components such as ozone), the climate of the Black Sea and terrestrial climate variables. Romania complies with GCOS requirements and integrates GCOS monitoring principles and best practices in systematic observation activities. Romania’s activities related to systematic observation are synchronized with EU and World Meteorological Organization programmes (especially those related to World Meteorological Organization Region VI) and with GCOS. Romania also participates in the exchange of international meteorological data and contributes to European and global climate databases.

92. During the review, Romania provided information on some of the actions taken to support capacity-building and the establishment and maintenance of observation systems and related data and monitoring systems in developing countries. Romania provided funding for scientists from developing countries working on global climate change research. During the review, the Party informed the ERT that it has supported the Republic of Moldova in the area of research and systemic observation within the support provided through its cooperation agreement with the Republic of Moldova (see para. 87 above).

## **2. Assessment of adherence to the reporting guidelines**

93. The ERT assessed the information reported in the NC8 of Romania and identified issues relating to completeness, and thus adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table I.5.

## **J. Education, training and public awareness**

### **1. Technical assessment of the reported information**

94. In its NC8, Romania provided information on its actions relating to education, training and public awareness at the domestic and international level. The Party provided information on the general policy on education, training and public awareness; primary, secondary and higher education; public information campaigns; training programmes; education materials; resource or information centres; the involvement of the public and non-governmental organizations; and its participation in international activities.

95. The national education system is split into two major groups, namely pre-university and university education. As envisaged in the National Strategy on Environmental and Climate Change Education (2023–2030) and in accordance with Romania’s political ambitions set out in the new Long-Term Strategy for GHG emission reductions and the 2021–2030 Integrated National Energy and Climate Plan, environmental protection and climate change education, including on adaptation and mitigation, is integrated into the education and training systems at the pre-university level (e.g. in the curriculum of technical colleges), and at the post-secondary and university education levels (e.g. in the studies offered by the Faculty of Natural and Agricultural Sciences at Ovidius University and by the Faculty of Mines at the University of Petroșani).

96. Additional important projects and activities to enhance education on sustainable development are the “Educated Romania” project (2018–2030), which contains a set of priority directions and objectives; law 14/2022, which lays the foundation for a strategy on environmental education; and three EU co-funded programmes (i.e. the Human Capital Operational Programme, Regional Operational Programme and National Recovery and Resilience Plan), which have contributed to the implementation of Romania’s Education and Vocational Training Strategy.

97. The main authorities responsible for integrating education on sustainable development in the initial and continuing vocational education and training systems are the Ministry of Education, the Ministry of Research, Innovation and Digitalization and the Ministry of Labour and Social Protection, together with the National Qualifications Authority, the National Agency for Community Programmes in the Field of Education and Vocational Training, the National Centre for the Development of Vocational and Technical Education and the National Employment Agency. Activities are focused on ensuring that teachers instil behaviours among pupils and students in support of sustainable development, such as by

raising awareness of environmental issues and developing appropriate attitudes and specific skills.

98. Romania has a well-defined legal framework that supports lifelong learning, namely law 335/2013 on the conduct of internships for graduates of higher education, law 78/2014 on regulating volunteering and adult vocational training and government decision 418/2015 approving the National Lifelong Learning Strategy 2015–2020. Several types of projects (e.g. in the areas of mobility and strategic cooperation; volunteering and solidarity; research; education, scholarships, apprenticeships and entrepreneurship for youth; and environment, energy, climate change and the low-carbon economy) have been established through financing programmes (e.g. ERASMUS+, European Solidarity Corps, LIFE, ERA-NET and Horizon 2020) and grants (e.g. from Norway and the European Environment Agency) to encourage and support education and public awareness in the area of climate change, among others.

99. Romania has stepped up its efforts to raise public awareness of climate change issues, for example through its Green Campaign Week and calls to compete for public education and awareness projects such as corporate social responsibility programmes and awards. The role of civil society is increasingly defined and integrated in the process of information-sharing on, involvement in and awareness-raising of climate change issues. Romania, through the Ministry of Foreign Affairs, has made a voluntary contribution of EUR 10,000 to the Multilateral Fund for Developing Member States of the International Organisation of La Francophonie in the field of climate change education and the environment. In addition, Romania has ratified an agreement with the Republic of Moldova to support adaptation and mitigation projects in the field of climate change, including the exchange of experience and knowledge among experts. Other stakeholders involved and targeted in education and training activities include community-based organizations, advocacy groups, academic institutions and youth organizations.

## **2. Assessment of adherence to the reporting guidelines**

100. The ERT assessed the information reported in the NC8 of Romania and recognized that the reporting is complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

## **III. Conclusions and recommendations**

101. The ERT conducted a technical review of the information reported in the NC8 of Romania in accordance with the UNFCCC reporting guidelines on NCs. The ERT concluded that the reported information mostly adheres to the UNFCCC reporting guidelines on NCs and that the NC8 provides an overview of the national climate policy of Romania.

102. The information provided in the NC8 includes most of the elements of the supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. Romania reported on the national system, the national registry, supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol, PaMs in accordance with Article 2 of the Kyoto Protocol, domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures. 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 was provided by Romania in its 2022 annual submission.

103. The ERT conducted a technical review of the information reported in the BR5 and BR5 CTF tables of Romania in accordance with the UNFCCC reporting guidelines on BRs. The ERT concluded that the reported information mostly adheres to the UNFCCC reporting guidelines on BRs and that the BR5 and its CTF tables provide an overview of emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; and the progress of Romania towards achieving its target.

104. In its NC8 Romania reported on its key national circumstances related to GHG emissions and removals, including population and GDP, as well as the relationship between national circumstances and GHG emissions and removals over time. Between 2017 and 2020, GHG emissions per GDP unit and GHG emissions per capita decreased by approximately 24.0 and 7.3 per cent respectively owing to migration abroad, rising mortality rates, declining birth rates, improvements in technology, GHG emission reduction policies and structural changes in the economy.

105. Romania's total GHG emissions excluding LULUCF in 2020 were estimated to be 56.4 per cent below the 1990 level, while total GHG emissions including LULUCF were estimated to be 73.0 per cent below the 1990 level. The decrease since 1990 in total GHG emissions was driven mainly by the deep economic recession due to the collapse of the centrally planned economy, the reduction in coal power plant generation and outputs of the metal and chemical industries, the introduction of abatement technologies for gas production, the establishment of nuclear power and hydroelectric plants, and the decline in the livestock population and crop production levels.

106. As reported in the BR5, under the Convention Romania committed to contributing to the achievement of the joint EU quantified economy-wide target of a 20 per cent reduction in emissions below the 1990 level by 2020. The target covers all sectors and CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>, expressed using GWP values from the AR4. Emissions and removals from the LULUCF sector are not included. Under the ESD Romania has a target of limiting its emission growth to 19 per cent above the 2005 level by 2020.

107. The EU has a joint 2030 emission reduction target of at least 55 per cent below the 1990 level. This will be primarily implemented through the EU ETS and ESR, which have targets to reduce emissions by 2030 by 62 and 40 per cent respectively compared with the 2005 level. The new Long-Term Strategy for GHG emission reductions, submitted to the EU on 26 April 2023, established the national aim of achieving climate neutrality by 2050 by reducing net emissions by 99 per cent compared with the 1990 level. The Long-Term Strategy also sets sectoral GHG emission reduction targets to ensure the country's commitment to its 2050 goal.

108. The ERT noted that the total GHG emissions of the EU excluding LULUCF do not exceed the emission level corresponding to the target in 2020, and thus that the EU has achieved its joint target. The ERT therefore concluded that Romania has met its 2020 commitment under the Convention through its contribution to achieving the joint target of the EU. See the report on the technical review of the BR5 of the EU for further details. The ERT noted that the Party met its 2020 ESD target because its ESD emissions in 2020 do not exceed its AEA for 2020.

109. The GHG emission projections provided by Romania in its NC8 and BR5 correspond to the WEM, WOM and WAM scenarios. Under the WEM scenario, emissions in 2030 are projected to be 59.6 per cent below the 1990 level and 8.5 per cent below the 2020 level. Under the WAM scenario, emissions in 2030 are projected to be 60.5 per cent below the 1990 level and 10.5 per cent below the 2020 level.

110. Romania's main policy framework relating to energy and climate change is the Sustainable Development Strategy 2030, which defines the national framework for implementing the 2030 Agenda for Sustainable Development and promotes the development of Romania by focusing on economic, social and environmental considerations. The Party described the mitigation actions it has implemented to help achieve its 2020 and longer-term targets, which include the National Action Plan on Energy Efficiency IV and the 2021–2030 Integrated National Energy and Climate Plan. These PaMs establish measures to increase energy efficiency, evaluate the energy savings achieved and define the national targets and shares in the achievement of the 2030 EU climate change targets related to ETS emissions, non-ETS emissions, renewable energy and energy efficiency.

111. Romania is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3–5, of the Convention. However, it provided information in its BR5 and NC8 on its provision of support to developing country Parties. Romania provided financial contributions in 2019–2020 through multilateral channels aimed at enhancing implementation of the Convention. Through collaboration with

international organizations and by implementing bilateral projects, Romania supports energy efficiency and environmental sustainability projects in Armenia, Georgia, the Republic of Moldova and Ukraine. As part of bilateral cooperation efforts in the area of adaptation, Romania also provided support to Georgia for disaster prevention and preparedness.

112. In its NC8 Romania provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b), of the Convention with regard to adaptation. The forthcoming National Adaptation Strategy and National Action Plan (2023–2030) propose a systemic sectoral and cross-sectoral approach to adaptation, with objectives aligned with EU-wide targets covering 13 key sectors. Key sectoral vulnerabilities are related to increased heat stress, extreme climate events and reduced water resources. Adaptation measures include strengthening the disaster emergency management system, upgrading the existing radar network to measure extreme precipitation and map flood risk areas, and ‘green’ payments for sustainable agricultural practices. The updated National Adaptation Strategy also establishes a more effective monitoring framework with individually designed monitoring tables for adaptation actions.

113. In its NC8 Romania provided information on its activities relating to research and systematic observation. Romania’s research on climate change is synchronized with major international scientific programmes in the field of global climate change research, such as the World Climate Research Programme. Romania participates in various climate-related monitoring activities at the national level and in European and international programmes. Romania operates observation systems for monitoring essential climate variables, covering atmospheric climate variables (including measurements for atmospheric components such as ozone), the climate of the Black Sea and terrestrial climate variables.

114. In its NC8 Romania provided information on its actions relating to education, training and public awareness. The National Strategy on Environmental and Climate Change Education (2023–2030) has been approved and adopted. The Party’s approach to education is based on research, innovation and competitiveness. Sustainable development principles are integrated into both the initial and continuing vocational education and training systems. Various internationally and domestically funded projects with non-governmental organizations and public outreach activities have been implemented to enhance public awareness on climate change issues. Examples include the corporate social responsibility campaigns and programmes and awards for the private business sector in the fields of energy and the environment.

115. In the course of the review, the ERT formulated the following recommendations for Romania to improve its adherence to the UNFCCC reporting guidelines on NCs in its next NC:

- (a) To improve the completeness of its reporting by:
  - (i) Describing how the PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention (see issue 9 in table I.2);
  - (ii) Providing information on  $\text{NF}_3$  emission projections to ensure a complete time series of projections (see issue 2 in table I.3);
  - (iii) Providing information on projections of emissions from international bunkers (see issue 4 in table I.3);
  - (iv) Reporting the aggregate effects of PaMs for the most recent inventory year (2020) (see issue 6 in table I.3);
  - (v) Providing information on actions taken to implement Article 4, paragraph 1(e), of the Convention (see issue 1 in table I.4);
  - (vi) Providing information on action taken to support capacity-building in developing countries related to research and systematic observation (see issue 1 in table I.5);

- (b) To improve the transparency of its reporting by:
  - (i) Clearly outlining the changes in institutional arrangements for the GHG inventory since the most recent submission (see issue 2 in table I.1);
  - (ii) Providing consistent information on the PaMs reported in the textual part of the NC and in tabular format (see issue 4 in table I.2);
  - (iii) Clarifying how the PaMs are grouped to estimate the mitigation impact for the sectoral groups of PaMs used for the quantitative estimate of the impact of PaMs (see issue 7 in table I.2).

116. In the course of the review of Romania's NC8, the ERT formulated the following recommendations relating to adherence to the reporting guidelines for supplementary information. To improve the transparency of its reporting by:

- (a) Providing information on domestic or EU actions to implement ICAO and IMO decisions (see issue 1 in table I.6);
- (b) Providing information on the institutions responsible for making information on the legislative arrangements and enforcement and administrative procedures related to implementation of the Kyoto Protocol publicly accessible (see issue 2 in table I.6).

117. In the course of the review of Romania's BR5, the ERT formulated the following recommendations relating to adherence to the UNFCCC reporting guidelines on BRs:

- (a) To improve the completeness of its reporting by:
  - (i) Providing information on NF<sub>3</sub> emission projections to ensure a complete time series of projections (see issue 2 in table II.2);
  - (ii) Providing information on projections of emissions from international bunkers (see issue 4 in table II.2);
- (b) To improve the transparency of its reporting by:
  - (i) Clearly outlining the changes in institutional arrangements for the GHG inventory since the most recent submission (see issue 1 in table II.1).

## Annex I

### Assessment of adherence to the reporting guidelines for the eighth national communication of Romania

Tables I.1–I.6 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on NCs for Romania’s NC8.

Table I.1

#### Findings on greenhouse gas inventory information from the review of the eighth national communication of Romania

| No. | Reporting requirement, issue type and assessment   | Description of the finding with recommendation or encouragement  |
|-----|--|--|
| 1   | Reporting requirement specified in paragraph 5<br>Issue type: transparency<br>Assessment: encouragement  | <p>The CH<sub>4</sub> and N<sub>2</sub>O emissions reported by the Party in its NC8 for 1989 and 2020 are not consistent with those reported in the 2022 GHG annual submission. The ERT noted that the CO<sub>2</sub> emissions reported are consistent with the emissions excluding LULUCF reported in the 2022 GHG annual submission. However, the Party did not clarify whether N<sub>2</sub>O and CH<sub>4</sub> emissions include emissions from LULUCF.</p> <p>During the review, Romania explained that the CH<sub>4</sub> emissions reported in the NC8 for 2020 include LULUCF, whereas those reported for 1989 are not correct. Further, the N<sub>2</sub>O emissions reported for 1989 exclude LULUCF, while those for 2020 include LULUCF.</p> <p>The ERT encourages the Party to report in its next NC GHG inventory information consistent with that reported in its most recent annual submission available, and clearly explain whether the emissions include or exclude LULUCF.</p>   |
| 2   | Reporting requirement specified in paragraph 8<br>Issue type: transparency<br>Assessment: recommendation | <p>The Party provided in its NC8 a detailed description of the national GHG inventory arrangements and changes in those arrangements since the previous NC. The changes include the approval of government decision 590/2019 on new institutional arrangements to better and more efficiently prepare the inventory for the LULUCF sector. The Party further indicated that preparation of the inventory for the LULUCF sector is assigned on a contractual basis, with administrative activities implemented by the National Environmental Protection Agency to allow for the continuous operation of the arrangements. However, the Party did not describe in the NC8 any changes in the national GHG inventory arrangements since its BR4, which is the most recent previous submission.</p> <p>During the review, Romania explained that there have been no changes to the key institutional arrangements since its BR4. The Party further explained that a draft proposal of a new government decision has been prepared by the National Environmental Protection Agency and the Ministry of Environment, Waters and Forests to regulate LULUCF activities in order to continue implementing the activities subject to government decision 590/2019, which is due to expire in 2023. However, the proposal had not been approved as at the time of the review.</p> <p>The ERT recommends that Romania identify any changes to its national inventory arrangements since its last NC or BR, whichever is later, including any changes to the arrangements for the preparation of the inventory for the LULUCF sector, or clearly state that no changes have been made.</p> |

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



Table I.2

**Findings on policies and measures from the review of the eighth national communication of Romania**

| No. | <i>Reporting requirement, issue type and assessment</i>   | <i>Description of the finding with recommendation or encouragement</i>   |
|-----|---|--|
| 1   | Reporting requirement specified in paragraph 10<br>Issue type: completeness<br>Assessment: encouragement  | The Party did not report information on PaMs that are innovative and/or effectively replicable by other Parties.<br><br>During the review, Romania provided additional information in detailed Excel spreadsheets in which the Party identified PaMs that are innovative and/or effectively replicable by other Parties. These include actions related to electric vehicles, solar photovoltaic systems and energy efficiency in buildings.<br><br>The ERT encourages Romania to provide information in its next NC on PaMs that are innovative and/or effectively replicable by other Parties.  |
| 2   | Reporting requirement specified in paragraph 10<br>Issue type: transparency<br>Assessment: encouragement  | Romania reported on adopted and planned PaMs in its NC, but did not clearly distinguish between PaMs that are implemented and those that are adopted and planned.<br><br>During the review, Romania explained that in its NC8, implemented PaMs are included under adopted PaMs for all reported sectors and that the differentiation between implemented and adopted PaMs is indicated in CTF table 3, annexed to the NC8.<br><br>The ERT encourages Romania to distinguish between implemented PaMs and those that are adopted and planned in the textual part of its NC8.   |
| 3   | Reporting requirement specified in paragraph 12<br>Issue type: completeness<br>Assessment: encouragement  | Romania did not report information on the specific actions taken at the national level to implement its commitments under Article 4, paragraph 2(e)(ii), of the Convention, which requires each Party to identify and periodically review its policies and practices that encourage activities that lead to greater levels of anthropogenic GHG emissions than would otherwise occur and the rationale for such actions in the context of their NCs.<br><br>During the review, Romania provided information that explained that the Party annually monitors the effect of implemented PaMs by sector and periodically prepares GHG emission projections to identify whether there is a need to update the current policies and practices. In addition, Romania has identified the national and sectoral targets up to 2050 and the options for achieving these targets in its Long-Term Strategy for GHG emission reductions, which is the key driver for updating the policies and practices that will lead to greater levels of anthropogenic GHG emissions.<br><br>The ERT encourages Romania to provide information in its next NC on the actions taken to implement its commitments under Article 4, paragraph 2(e)(ii), of the Convention, which requires each Party to identify and periodically review the policies and practices that encourage activities that lead to greater levels of anthropogenic GHG emissions than would otherwise occur and the rationale for such actions, for example by incorporating the information provided during the review. |
| 4   | Reporting requirement specified in paragraph 14<br>Issue type: transparency<br>Assessment: recommendation | The ERT noted an inconsistency between the overview of the sectors affected by the cross-cutting PaMs reported in the textual part of the NC8 and the information provided in tabular format. Namely, the textual information in the NC8 does not list the industry, forestry and agriculture sectors as being affected by cross-cutting PaMs under the WAM scenario, while the table provides information on cross-cutting PaMs in the industry, forestry and agriculture sectors under the same scenario.<br><br>During the review, Romania confirmed that there are cross-cutting PaMs in the industry, forestry and agriculture sectors under the WAM scenario.<br><br>The ERT recommends that Romania ensure consistency between the PaMs reported in the textual part of its NC and in tabular format.   |
| 5   | Reporting requirement specified in paragraph 15<br>Issue type: transparency<br>Assessment: encouragement  | In its NC8, the Party did not clearly identify and briefly describe the PaMs that were reported in the previous NC and did not provide references to previous NCs/BRs where any previously existing mitigation actions are described.<br><br>During the review, Romania explained that it decided to report the full list of PaMs and not only the new PaMs with references to the previous NC/BR in order to clearly identify the PaMs included in the GHG emission projection scenarios.<br><br>The ERT encourages Romania to clearly identify and briefly describe the PaMs that were reported in the previous NC, focusing on any alterations to the policy, measure or effects achieved.  |

| <i>No.</i> | <i>Reporting requirement, issue type and assessment</i>   | <i>Description of the finding with recommendation or encouragement</i>   |
|------------|---|--|
| 6          | Reporting requirement specified in paragraph 19<br>Issue type: completeness<br>Assessment: encouragement  | The Party reported in its NC8 information on objectives in quantitative terms for a limited number of PaMs and on the funds already provided, future budget allocated and time frame for implementation for only some adopted and implemented PaMs.<br>During the review, Romania explained that this information was not provided for all PaMs owing to a lack of available information, and because many PaMs have only recently been adopted or planned.<br>The ERT encourages Romania to report information on objectives in quantitative terms for all PaMs, as well as information on the funds already provided, future budget allocated and time frame for implementation for all adopted and implemented PaMs.  |
| 7          | Reporting requirement specified in paragraph 20<br>Issue type: transparency<br>Assessment: recommendation | The Party did not report information on the quantitative estimate of the impact of individual PaMs. Instead, it reported a quantitative estimate of the impact considering sectoral groups of PaMs. However, it is not clear how the PaMs were grouped by scenario and sector.<br>During the review, Romania provided further information through detailed Excel spreadsheets on which individual PaMs are included in each sector and projections scenario.<br>The ERT recommends that Romania report on how the PaMs are grouped in order to estimate their collective mitigation.   |
| 8          | Reporting requirement specified in paragraph 21<br>Issue type: completeness<br>Assessment: encouragement  | The Party did not provide information in its NC8 on the costs and non-GHG mitigation benefits of its PaMs, or on how the PaMs interact with other PaMs at the national level.<br>During the review, Romania provided sectoral-level information on the costs and benefits of implementing the EU’s PaMs within the EU member States and the corresponding co-benefits, such as a decrease in air pollutants, that have a direct impact on health and other benefits. Romania also explained that the PaMs aimed at reducing emissions interact with other PaMs at the national level, especially those related to controlling air pollution.<br>The ERT encourages Romania to include information on the costs and non-GHG mitigation benefits of its PaMs, and on how the PaMs interact with other PaMs at the national level.  |
| 9          | Reporting requirement specified in paragraph 22<br>Issue type: completeness<br>Assessment: recommendation | The Party did not report information on how its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention.<br>During the review, Romania explained that the trend in GHG emissions has been decreasing over the past decade and will continue to decrease in the coming years in line with the adopted European Climate Law and the national Long-Term Strategy on GHG emission reductions, both of which set out the goal of achieving climate neutrality by 2050 at the EU and national level respectively and, as such, the Party’s PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention.<br>The ERT recommends that Romania include information on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals consistent with the objective of the Convention. |

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

Table I.3

**Findings on projections including aggregate effects of policies and measures reported in the eighth national communication of Romania**

| <i>No.</i> | <i>Reporting requirement, issue type and assessment</i>                     | <i>Description of the finding with recommendation or encouragement</i>  |
|------------|---|---|
| 1          | Reporting requirement specified in paragraph 27<br>Issue type: transparency | The Party reported in its NC8 on the sensitivity analysis conducted for the energy sector using different assumptions for GDP growth under the ‘reference’, ‘minimum’ and ‘maximum’ scenarios. While GDP assumptions were reported for the ‘minimum’ and ‘reference’ scenarios, those related to the ‘maximum’ scenario were not reported. The ERT noted that the information on CO <sub>2</sub> emissions for 2018 reported under the ‘minimum’ scenario differs from the information reported under the ‘reference’ and |

| No. | Reporting requirement, issue type and assessment  | Description of the finding with recommendation or encouragement   |
|-----|---|---|
|     | Assessment: encouragement   | <p>'maximum' scenarios. Further, the Party reported a sensitivity analysis for the LULUCF sector, applying a 'business as usual' scenario and a 'business as usual' without climate effect' scenario, but did not clearly describe the definitions of these scenarios.</p> <p>During the review, Romania explained that CO<sub>2</sub> emissions for 2018 reported under the 'reference' and 'maximum' scenarios were incorrect and should be equal to the amounts reported under the 'minimum' scenario. Romania further explained that the 'business as usual' scenario represents the WOM scenario and that the 'business as usual' without climate effect' scenario presents the sensitivity of the WOM scenario.</p> <p>The ERT encourages the Party to clearly describe the scenario(s) and the assumptions included in the sensitivity analysis conducted for the emission projections under different scenarios (WEM, WAM and/or WOM).</p>  |
| 2   | Reporting requirement specified in paragraph 32<br>Issue type: completeness<br>Assessment: recommendation | <p>The Party reported NF<sub>3</sub> emission projections as "NO" for 2030 for the WEM, WOM and WAM scenarios in CTF tables 6(a–c) annexed to the NC8. However, no information was reported on NF<sub>3</sub> emission projections for 2025 and 2035.</p> <p>During the review, Romania explained that no NF<sub>3</sub> emissions are expected to occur during the time series of the projections (2025–2040) covered in the NC8 under all the scenarios reported.</p> <p>The ERT recommends that the Party report in the textual part of the NC NF<sub>3</sub> emission projections for all the years covered by the time series of the projections, as required by the UNFCCC reporting guidelines on NCs.</p>   |
| 3   | Reporting requirement specified in paragraph 32<br>Issue type: completeness<br>Assessment: encouragement  | <p>The Party did not report projections for indirect GHG emissions in its NC8.</p> <p>During the review, Romania provided projections data for indirect GHG emissions and explained that those projections were prepared consistently, with the projected activity data taken into consideration in the preparation of the GHG emission projections.</p> <p>The ERT reiterates the encouragement made in the previous review report for the Party to report indirect GHG emission projections.</p>  |
| 4   | Reporting requirement specified in paragraph 33<br>Issue type: completeness<br>Assessment: recommendation | <p>The Party did not report emission projections related to fuel sold to ships and aircraft engaged in international transport separately in its NC8.</p> <p>During the review, Romania confirmed that such emissions are not included in the emission projection totals reported in the NC8. The Party also confirmed that projections related to fuel sold to ships and aircraft engaged in international transport are available and provided the data as prepared under the respective EU reporting obligation.</p> <p>The ERT recommends that the Party report emission projections related to fuel sold to ships and aircraft engaged in international transport separately and not include them in the emission projection totals.</p>   |
| 5   | Reporting requirement specified in paragraph 34<br>Issue type: transparency<br>Assessment: encouragement  | <p>The Party included in the textual part of the NC8 tables presenting the emission projections under the WEM and WAM scenarios for 2025, 2030, 2035 and 2040, together with historical emissions for 2020. For the WOM scenario, the historical emissions for 2005 were additionally reported in the tables included in the textual part of the NC8, while the 2020 emissions were reported on the basis of the projections. The historical emissions before 2020 for the WAM and WEM scenarios and before 2005 for the WOM scenario were not reported in the same tables as the projections for 2035 and 2040. However, according to the UNFCCC reporting guidelines on NCs, information should be presented in a single tabular format for 1990 (and another base year, as appropriate), 1995, 2000, 2005, 2010 and subsequent years that end in either a zero or a five up to the most recent inventory year.</p> <p>During the review, Romania explained that historical emission data for 1990–2020 were reported in CTF tables 6(a–c), annexed to the NC8.</p> <p>The ERT encourages the Party to present emission projections data in its next NC in tabular format in accordance with tables 2–4 of the UNFCCC reporting guidelines on NCs, together with historical emission data for 1990 (and another base year, as appropriate) and subsequent years that end in either a zero or a five up to the most recent inventory year.</p> |

| <i>No.</i> | <i>Reporting requirement, issue type and assessment</i>   | <i>Description of the finding with recommendation or encouragement</i>   |
|------------|---|--|
| 6          | Reporting requirement specified in paragraph 37<br><br>Issue type: completeness<br><br>Assessment: recommendation             | <p>The Party reported in its NC8 the projected aggregate effects of PaMs for 2025–2040 but not for the most recent inventory year. In addition, aggregate effects were reported by sector but not by gas.</p> <p>During the review, Romania provided information on the aggregate effects of PaMs (totals for all gases) for 2020 and explained that information on those effects can be found in figure 5-1 of the NC8, while the aggregate effects for the years included in the projections are listed in NC8 table 5-124. The aggregate effects of PaMs by gas can be calculated by subtracting the results under the WEM scenario from those under the WOM scenario (or by subtracting the results under the WAM scenario from those under the WEM scenario respectively) on the basis of the gas-specific projections reported in NC8 tables 5-5–5-15.</p> <p>The ERT recommends that the Party report its next NC the aggregate effects of PaMs by gas, including for the most recent inventory year.</p>   |
| 7          | Reporting requirement specified in paragraph 40<br><br>Issue type: completeness<br><br>Assessment: encouragement              | <p>The Party did not report in its NC8 detailed information on the models used for the energy sector that would allow the reader to obtain a basic understanding of the models and/or approaches used, including by providing references to more detailed information.</p> <p>During the review, the Party explained that energy modelling was carried out using the DOBRESCU macroeconomic model of the National Commission for Strategy and Prognosis, which covers the entire economy of Romania. The Party further explained that the modelling assumptions were updated for the NC8 in order to reflect recent developments with respect to the pandemic and the latest geopolitical events.</p> <p>The ERT encourages Romania to report the information outlined in paragraph 40(a–e) of the UNFCCC reporting guidelines on NCs for each model or approach used, namely which gases the model was used for, the type of model or approach used, the original purpose of the model or approach, a summary of the strengths and weaknesses of the model or approach and how the model or approach used accounts for overlaps or synergies between different PaMs, in order to allow the reader to obtain a basic understanding of the modelling approaches used for all sectors, and to provide references to more detailed information.</p> |
| 8          | Reporting requirement <sup>a</sup> specified in paragraph 42<br><br>Issue type: transparency<br><br>Assessment: encouragement | <p>The Party did not report in its NC8 information on the main differences in the assumptions, methods employed and results between the projections reported in the NC8 and those reported in previous NCs for all sectors except the LULUCF sector.</p> <p>During the review, Romania provided information on the changes in the results of the projected emissions for all sectors.</p> <p>The ERT encourages the Party to report in its next NC information on the main differences in the assumptions, methods employed and results between the projections reported in the current NC and those reported in previous NCs.</p>   |

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

Table I.4

**Findings on vulnerability assessment, climate change impacts and adaptation measures from the review of the eighth national communication of Romania**

| <i>No.</i> | <i>Reporting requirement, issue type and assessment</i>   | <i>Description of the finding with recommendation or encouragement</i>  |
|------------|---|---|
| 1          | Reporting requirement specified in paragraph 46<br><br>Issue type: completeness<br><br>Assessment: recommendation | <p>The Party did not report in its NC8 an outline of the action taken to implement Article 4, paragraph 1(e), of the Convention with regard to adaptation.</p> <p>During the review, Romania provided information explaining that it promotes EU initiatives through the EU Civil Protection Mechanism and the EU Emergency Response Coordination Centre. In addition, the Ministry of Foreign Affairs created (within the Annual Plan for Development Cooperation and Humanitarian Assistance) a humanitarian fund with the purpose of facilitating a rapid response to international appeals for humanitarian aid in the wake of disasters in developing countries. Romania has also provided support through other international organizations and through the transfer of expertise during emergencies caused by natural disasters. In this regard, in 2019–2021 Romania cooperated with United Nations agencies, the International</p> |

| No. | <i>Reporting requirement, issue type and assessment</i>   | <i>Description of the finding with recommendation or encouragement</i>  |
|-----|---|---|
|     |   | <p>Federation of Red Cross and Red Crescent Societies and national entities to support developing countries in post-disaster reconstruction and risk management.</p> <p>The ERT recommends that Romania include an outline of the action taken to implement Article 4, paragraph 1(e), of the Convention, including, for example, by providing information on cooperation with other Parties in preparing for adaptation to the impacts of climate change.</p>  |
| 2   | <p>Reporting requirement specified in paragraph 46</p> <p>Issue type: completeness</p> <p>Assessment: encouragement</p> | <p>The Party did not report information on the methodologies and guidance used for assessing climate change impacts, vulnerability and adaptation measures in its NC8.</p> <p>During the review, Romania explained that it used the IPCC <i>Technical Guidelines for Assessing Climate Change Impacts and Adaptations</i> and the United Nations Environment Programme <i>Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies</i> in addition to the methodologies and guidance developed at the EU level (e.g. the EU Adaptation Strategy).</p> <p>The ERT encourages Romania to include information on the methodologies and guidance used for assessing climate change impacts, vulnerability and adaptation measures.</p>  |
| 3   | <p>Reporting requirement specified in paragraph 47</p> <p>Issue type: completeness</p> <p>Assessment: encouragement</p> | <p>The Party did not report in its NC8 information on the monitoring and evaluation framework or on progress and outcomes of adaptation actions.</p> <p>During the review, Romania provided information on the strategic environmental assessment procedure, as carried out for the National Strategy on Climate Change and Economic Growth and the National Action Plan on Climate Change 2016–2020, as well as information on the reporting conditions established to ensure that national programmes meet environmental requirements. With regard to the outcomes of adaptation actions, the Party explained that there is currently no centralized report on the implementation of sectoral and intersectoral actions based on the indicators established for each action to assess and monitor progress in their implementation.</p> <p>The ERT encourages Romania to include information on the monitoring and evaluation framework and on progress and outcomes of adaptation actions.</p> |

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

Table I.5

**Findings on research and systematic observation from the review of the eighth national communication of Romania**

| No. | <i>Reporting requirement, issue type and assessment</i>  | <i>Description of the finding with recommendation or encouragement</i>  |
|-----|--|---|
| 1   | <p>Reporting requirement specified in paragraph 61</p> <p>Issue type: completeness</p> <p>Assessment: recommendation</p> | <p>The Party did not report in its NC8 information on action taken to support capacity-building in developing countries related to research and systematic observation.</p> <p>During the review, Romania provided information on the cooperation agreement between the National Meteorological Administration of Romania and the State Hydrometeorological Service of the Republic of Moldova, signed in 2022, and explained that the main areas of cooperation covered by the agreement are meteorology, agrometeorology, climatology, geographic information systems, meteorological data and services, exchanging best practices and developing methodologies and strategies related to climate change.</p> <p>The ERT recommends that Romania include information on action taken to support capacity-building in developing countries related to research and systematic observation.</p> |
| 2   | <p>Reporting requirement specified in paragraph 65</p> <p>Issue type: completeness</p> <p>Assessment: encouragement</p>  | <p>The Party did not report in its NC8 information on action taken to overcome barriers to free and open international exchange of data and information.</p> <p>During the review, Romania provided information on the activities of the National Meteorological Administration within the framework of European programmes such as the European Climate Assessment and Dataset project that have been implemented to provide opportunities for free and open international exchange of data and information. Barriers are related to the commercial use of such data and information given the relatively high costs of supporting a functioning national meteorological network.</p>  |

| No. | <i>Reporting requirement, issue type and assessment</i>  | <i>Description of the finding with recommendation or encouragement</i>  |
|-----|--|---|
|     |  | The ERT encourages Romania to include in its next NC information on action taken to overcome barriers to free and open international exchange of data and information.  |
| 3   | Reporting requirement specified in paragraph 66<br>Issue type: completeness<br>Assessment: encouragement | <p>The Party did not report in its NC8 information on a socioeconomic analysis, including an analysis of response options.</p> <p>During the review, Romania explained that a socioeconomic analysis of response actions is yet to be completed. National research has been mainly focused on analysing the physical science basis for climate change and the impact of climate change on physical systems and ecosystems in Romania. The Party further explained that the fragmentation of the national research system does not facilitate the cross-disciplinary approach needed to conduct a socioeconomic analysis of response actions. Measures to deal with this fragmentation are being considered by the Government, which is expected to result in progress in relation to conducting a socioeconomic analysis of response actions.</p> <p>The ERT encourages the Party to report in its next NC information on a socioeconomic analysis of response options.</p>   |
| 4   | Reporting requirement specified in paragraph 67<br>Issue type: completeness<br>Assessment: encouragement | <p>The Party reported information on the current status of national and international programmes and support for ground and space-based climate observing systems, such as the Horizon 2020 and Horizon Europe framework programmes, COST actions and other European climate-related programmes. The Party also reported that the National Meteorological Network makes observations, primary validation of data and data transfer to the national meteorological database; however, information was not reported on data quality control and archiving of data.</p> <p>During the review, Romania provided information on the process for data quality control and availability, and on the archiving system, explaining that data collected from the National Meteorological Network is archived, quality controlled and validated by experts from the Database Department and Climatology Section of the National Meteorological Administration. The data are managed through a dedicated climate data management system, which has specific functions to process and deliver climate data and information to users.</p> <p>The ERT encourages Romania to report in its next NC information on how data quality control and availability is ensured, and on the archiving of data.</p> |

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

Table I.6

**Findings on minimization of adverse impacts and supplementary information related to the Kyoto Protocol reported in the eighth national communication of Romania**

| No. | <i>Reporting requirement, issue type and assessment</i>   | <i>Description of the finding with recommendation</i>   |
|-----|---|---|
| 1   | Reporting requirement specified in paragraph 35<br>Issue type: transparency<br>Assessment: recommendation | <p>The Party reported limited information in its NC8 regarding the steps taken to promote and/or implement any decisions of ICAO and IMO to limit or reduce emissions of GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels. Romania did not describe any domestic or EU actions to implement the decisions of ICAO and IMO and provided a brief reference to plans to include international maritime emissions in the EU ETS from 2023 onward.</p> <p>During the review, Romania provided detailed information on actions taken to promote and implement ICAO and IMO decisions to limit emissions from aviation and marine bunker fuels. Romania clarified that the provisions of EU regulation 2015/757 have been implemented at the national level by the Romanian Naval Authority in accordance with government decision 22/2018. Regarding implementation of ICAO decisions in accordance with Article 2 of the Kyoto Protocol, Romania clarified that EU directive 2003/87, establishing a scheme for GHG emission allowance trading (the EU ETS), functioning under Article 17 of the Kyoto Protocol, has been transposed into national legislation through government decision 780/2006 in accordance with the revisions to the EU directive. The provisions of the EU directive regarding the inclusion of aviation activities were transposed into national legislation through government decision 399/2010, amending government decision 780/2006. In addition, Romania explained that it will</p> |

| <i>No.</i> | <i>Reporting requirement, issue type and assessment</i>  | <i>Description of the finding with recommendation</i>   |
|------------|--|---|
| 2          | <p>Reporting requirement specified in paragraph 37</p> <p>Issue type: transparency</p> <p>Assessment: recommendation</p> | <p>apply agreed EU legislation under the “Fit for 55” package, in particular that related to the revised EU directive on the EU ETS, which will be implemented in Romania by transposing into national legislation EU directive 2023/959 amending EU directive 2003/87.</p> <p>The ERT recommends that Romania include information on specific EU and domestic actions taken to promote and implement ICAO and IMO decisions to limit or reduce emissions from aviation and marine bunker fuels.</p> <p>The ERT concludes that this potential problem of a mandatory nature does not influence the Party’s ability to fulfil its commitments for the second commitment period of the Kyoto Protocol.</p> <p>In its NC8, Romania provided a brief description of the provisions in place to make information on legislative arrangements and enforcement and administrative procedures related to implementation of the Kyoto Protocol publicly accessible. The Party did not include information on the institutions responsible for publishing the information or the national websites where this information is available.</p> <p>During the review, the Party explained that the Ministry of Environment, Waters and Forests is responsible for publishing such information on its website, which is regularly updated.</p> <p>The ERT recommends that Romania include a detailed description of any provisions in place to make information on the domestic and regional legislative arrangements and enforcement and administrative procedures related to implementation of the Kyoto Protocol publicly accessible, including, for example, the responsible agencies and details of where this information is publicly available.</p> <p>The ERT concludes that this potential problem of a mandatory nature does not influence the Party’s ability to fulfil its commitments for the second commitment period of the Kyoto Protocol.</p> |

*Note:* Item listed under reporting requirement refers to the relevant paragraph of the reporting guidelines for supplementary information. The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the reporting guidelines for supplementary information.

## Annex II

### Assessment of adherence to the reporting guidelines for the fifth biennial report of Romania

The BR5 of Romania is the final BR under the measurement, reporting and verification system established under the Convention.<sup>1</sup> Nevertheless, ERTs continue to provide recommendations and encouragements to the Parties on completeness, transparency and adherence to the UNFCCC reporting guidelines on BRs. Parties may find these recommendations and encouragements relevant, as appropriate, when preparing their initial biennial transparency report under the enhanced transparency framework of the Paris Agreement. Tables II.1–II.2 summarize the ERT assessment of adherence to the UNFCCC reporting guidelines on BRs for Romania’s BR5.

Table II.1

#### Findings on greenhouse gas emissions and trends from the review of the fifth biennial report of Romania

| No. | <i>Reporting requirement and issue type</i>  | <i>Description of the finding with recommendation or encouragement</i>   |
|-----|--|--|
| 1   | Reporting requirement specified in paragraph 3<br>Issue type: transparency<br>Assessment: recommendation | <p>In its BR5, the Party referred to the NC8 for information on GHG institutional arrangements, including a detailed description of the GHG inventory arrangements and changes in those arrangements since the previous NC. The changes include the approval of government decision 590/2019 on new institutional arrangements to better and more efficiently prepare the inventory for the LULUCF sector. The Party further indicated that preparation of the inventory is assigned on a contractual basis and that the National Environmental Protection Agency carries out administrative activities to allow for the continuous implementation of LULUCF-related activities. However, the Party did not describe in the NC8 any changes in the national GHG inventory arrangements since its BR4, which is the most recent previous submission.</p> <p>During the review, Romania explained that there have been no changes to the key institutional arrangements since its BR4. The Party further explained that a draft proposal of a new government decision has been prepared by the National Environmental Protection Agency and the Ministry of Environment, Waters and Forests to regulate LULUCF activities in order to continue implementing the activities subject to government decision 590/2019, which is due to expire in 2023. However, the proposal had not been approved as at the time of the review.</p> <p>The ERT recommends that Romania identify any changes to its national inventory arrangements since its last NC or BR, whichever is later, or clearly state that no changes have been made.</p> |

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

<sup>1</sup> The COP, by decision 1/CP.24, decided that the final BRs shall be those submitted to the secretariat no later than 31 December 2022 and reaffirmed that, for Parties to the Paris Agreement, following the submission of the final BR, the modalities, procedures and guidelines contained in the annex to decision 18/CMA.1 will supersede the measurement, reporting and verification system established under decision 1/CP.16, paras. 40–47 and 60–64, and decision 2/CP.17, paras. 12–62.



Table II.2

**Findings on projections reported in the fifth biennial report of Romania**

| No. | Reporting requirement and issue type   | Description of the finding with recommendation or encouragement   |
|-----|--|---|
| 1   | Reporting requirement <sup>a</sup> specified in paragraph 27<br>Issue type: transparency<br>Assessment: encouragement  | <p>The Party reported in its NC8/BR5 on the sensitivity analysis conducted for the energy sector using different assumptions for GDP growth under the ‘reference’, ‘minimum’ and ‘maximum’ scenarios. While GDP assumptions were reported for the ‘minimum’ and ‘reference’ scenarios, those related to the ‘maximum’ scenario were not reported. The ERT noted that the information on CO<sub>2</sub> emissions for 2018 under the ‘minimum’ scenario differs from the information reported under the ‘reference’ and ‘maximum’ scenarios. Further, the Party reported a sensitivity analysis for the LULUCF sector, applying a ‘business as usual’ and a ‘business as usual’ without climate effect’ scenario, but did not clearly describe the definitions of these scenarios.</p> <p>During the review, Romania explained that CO<sub>2</sub> emissions for 2018 reported under the ‘reference’ and ‘maximum’ scenarios were incorrect and should be equal to the amounts reported under the ‘minimum’ scenario. Romania further explained that the ‘business as usual’ scenario represents the WOM scenario and that the ‘business as usual’ without climate effect’ scenario presents the sensitivity of the WOM scenario.</p> <p>The ERT encourages the Party to clearly describe the scenario(s) and the assumptions included in the sensitivity analysis conducted for the emission projections under different scenarios (WEM, WAM and/or WOM).</p> |
| 2   | Reporting requirement <sup>a</sup> specified in paragraph 32<br>Issue type: completeness<br>Assessment: recommendation | <p>The Party reported NF<sub>3</sub> emission projections as “NO” for 2030 for the WEM, WOM and WAM scenarios in CTF tables 6(a–c). However, no information was reported in the BR5 on NF<sub>3</sub> emission projections for 2025 and 2035.</p> <p>During the review, Romania explained that no NF<sub>3</sub> emissions are expected to occur during the time series of the projections (2025–2040) covered in the BR5.</p> <p>The ERT recommends that the Party report NF<sub>3</sub> emission projections for all years covered by the time series of the projections, as required by the UNFCCC reporting guidelines on NCs and on BRs.</p>   |
| 3   | Reporting requirement <sup>a</sup> specified in paragraph 32<br>Issue type: completeness<br>Assessment: encouragement  | <p>The Party did not report projections for indirect GHG emissions in its BR5.</p> <p>During the review, Romania provided projections data for indirect GHG emissions and explained that those projections were prepared consistently, with the projected activity data taken into consideration in the preparation of the GHG emission projections.</p> <p>The ERT reiterates the encouragement made in the previous review report for the Party to report indirect GHG emission projections.</p>  |
| 4   | Reporting requirement <sup>a</sup> specified in paragraph 33<br>Issue type: completeness<br>Assessment: recommendation | <p>The Party did not report emission projections related to fuel sold to ships and aircraft engaged in international transport separately in its BR5.</p> <p>During the review, Romania confirmed that such emissions are not included in the emission projection totals reported in the BR5. The Party also confirmed that projections related to fuel sold to ships and aircraft engaged in international transport are available and provided the data as prepared under the respective EU reporting obligation.</p> <p>The ERT recommends that the Party report emission projections related to fuel sold to ships and aircraft engaged in international transport separately and not include them in the emission projection totals.</p>   |
| 5   | Reporting requirement <sup>a</sup> specified in paragraph 34<br>Issue type: transparency<br>Assessment: encouragement  | <p>The Party included in the textual part of the NC8/BR5 tables presenting the emission projections under the WEM and WAM scenarios for 2025, 2030, 2035 and 2040, together with historical emissions for 2020. The historical emissions before 2020 for the WAM and WEM scenarios and before 2005 for the WOM scenario were not reported in the same tables as the projections for 2035 and 2040. The tables in the textual part of the NC8/BR5 that included the projections for 2035 and 2040 did not include these historical emissions, whereas CTF tables 6(a–c) included these historical emissions but did not include the projections for 2035 and 2040. However, according to the UNFCCC reporting guidelines on NCs, information should be presented in a single tabular format for 1990 (and another base year, as appropriate), 1995, 2000, 2005, 2010 and subsequent years that end in either a zero or a five up to the most recent inventory year.</p> <p>During the review, Romania explained that historical emission data for 1990–2020 were reported in CTF tables 6(a–c).</p>  |

| <i>No.</i> | <i>Reporting requirement and issue type</i>   | <i>Description of the finding with recommendation or encouragement</i>  |
|------------|---|---|
| 6          | Reporting requirement <sup>a</sup> specified in paragraph 40<br>Issue type: transparency<br>Assessment: completeness  | <p>The ERT encourages the Party to present in tabular format emission projections data for years that end in either a zero or a five, extending at least 15 years from the most recent inventory year, together with historical emission data for 1990 (and another base year, as appropriate) and subsequent years that end in either a zero or a five up to the most recent inventory year.</p> <p>The Party did not report in its BR5 detailed information on the models used for the energy sector that would allow the reader to obtain a basic understanding of the models and/or approaches used, including by providing references to more detailed information.</p> <p>During the review, the Party explained that energy modelling was carried out using the DOBRESU macroeconomic model of by the National Commission for Strategy and Prognosis, which covers the entire economy of Romania. The Party further explained that the modelling assumptions were updated for the NC8/BR5 in order to reflect recent developments with respect to the pandemic and the latest geopolitical events.</p> <p>The ERT encourages Romania to report the information outlined in paragraph 40(a–e) of the UNFCCC reporting guidelines on NCs for each model or approach used, namely which gases the model was used for, the type of model or approach used, the original purpose of the model or approach, a summary of the strengths and weaknesses of the model or approach and how the model or approach used accounts for overlaps or synergies between different PaMs, in order to allow the reader to obtain a basic understanding of the modelling approaches used for all sectors and to provide references to more detailed information.</p> |
| 7          | Reporting requirement <sup>a</sup> specified in paragraph 42<br>Issue type: transparency<br>Assessment: encouragement | <p>The Party did not report in its BR5 information on the main differences in the assumptions, methods employed and results between the projections reported in the BR5 and those reported in previous NCs for all sectors except the LULUCF sector.</p> <p>During the review, Romania provided information on the changes in the results of the projected emissions for all sectors.</p> <p>The ERT encourages the Party to report information on the main differences in the assumptions, methods employed and results between the projections reported in the current submission and those reported in previous NCs.</p>   |

*Note:* The reporting on the requirements not included in this table is considered to be complete and transparent, and thus adheres to the UNFCCC reporting guidelines on NCs and on BRs.

<sup>a</sup> Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs, as per para. 11 of the UNFCCC reporting guidelines on BRs.

## Annex III

### Documents and information used during the review

#### A. Reference documents

2022 GHG annual submission of Romania. Available at <https://unfccc.int/ghg-inventories-annex-i-parties/2022>.

2023 GHG annual submission of Romania. Available at <https://unfccc.int/ghg-inventories-annex-i-parties/2023>.

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

“Compilation of economy-wide emission reduction targets to be implemented by Parties included in Annex I to the Convention”. FCCC/SBSTA/2014/INF.6. Available at <http://unfccc.int/resource/docs/2014/sbsta/eng/inf06.pdf>.

European Green Deal. European Commission document COM(2019) 640 final. Available at [https://ec.europa.eu/info/files/communication-european-green-deal\\_en](https://ec.europa.eu/info/files/communication-european-green-deal_en).

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”. FCCC/CP/2019/13/Add.1. Available at <https://unfccc.int/documents/210471>.

“Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol”. Annex to decision 15/CMP.1. Available at <https://unfccc.int/documents/4253>.

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

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National energy and climate plans of Romania. Available at [https://energy.ec.europa.eu/system/files/2020-06/ro\\_final\\_necp\\_main\\_en\\_0.pdf](https://energy.ec.europa.eu/system/files/2020-06/ro_final_necp_main_en_0.pdf).

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Report on the technical review of the BR4 of Romania. FCCC/TRR.4/ROU. Available at <https://unfccc.int/fourth-biennial-reports>.

Report on the technical review of the NC7 of Romania. FCCC/IDR.7/ROU. Available at [https://unfccc.int/review-reports-BR3\\_and\\_NC7](https://unfccc.int/review-reports-BR3_and_NC7).

Report on the technical review of the NC8 and the technical review of the BR5 of the EU. FCCC/IDR.8/EU–FCCC/TRR.5/EU. Available at <https://unfccc.int/documents/630393>.

United Nations Environment Programme and Institute for Environmental Studies. 1998. *Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies*. JM Balbus, B Baker, M Brody, et al. (eds.). Nairobi and Amsterdam: United Nations Environment Programme and Institute for Environmental Studies. Available at <https://wedocs.unep.org/20.500.11822/32746>.

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

## **B. Additional information provided by the Party**

Responses to questions during the review were received from Gherghita Nikodim (Ministry of Environment, Waters and Forests), including additional material. The following references were provided by Romania and may not conform to UNFCCC editorial style as some have been reproduced as received:

Draft Romania’s National Climate Change Adaptation Strategy, in Romanian.

Draft National Action Plan on Adaptation to Climate Change, in Romanian.

Excel sheets describing the individual PaMs and their inclusion in the sectors and scenario.

Excel sheets describing the PaMs that are innovative and/or effectively replicable by other Parties.

Long Term Strategy of Romania for GHG emission reductions.

Recommended parameters for reporting on GHG projections in 2023, Version after consultation of WG2 under the Climate Change Committee on 10 March 2022, sharing of draft recommendation on 30 March 2022 and consultation of National Experts designated by members of WG2 on 26 April 2022.

The National Strategy on Education for the Environment and Climate Change 2023–2030 (adopted in January 2023), in Romanian.

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