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

Developed country Parties were requested by decision 2/CP.17 to submit their fourth biennial report to the secretariat by 1 January 2020. This report presents the results of the technical review of the fourth biennial report of 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 took place from 25 to 29 January 2021 remotely.

Contents

Abbreviations and acronyms

AEA	annual emission allocation
Annex II Party	Party included in Annex II to the Convention
AR4	Fourth Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CH_4	methane
COVID-19	coronavirus disease 2019
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CTF	common tabular format
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
GDP	gross domestic product
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IE	included elsewhere
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
NA	not applicable
NC	national communication
NECP	National Energy and Climate Plan
NF_3	nitrogen trifluoride
NO	not occurring
N_2O	nitrous oxide
PaMs	policies and measures
PFC	perfluorocarbon
RES	renewable energy source(s)
SF_6	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 centralized technical review of the BR4[1] of Romania. The review was organized by the secretariat in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention", particularly "Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention" (annex to decision 13/CP.20).

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

3. The review was conducted together with the review of five other Parties included in Annex I to the Convention from 25 to 29 January 2021 remotely[2] by the following team of nominated experts from the UNFCCC roster of experts: Amr Osama Abdel-Aziz (Egypt), Dirk Guenther (Germany), Karin Kindbom (Sweden), Hanna-Lii Kupri (Estonia), Yu'e Li (China), Sekai Ngarize (Zimbabwe), Stephanie Ockenden (United Kingdom of Great Britain and Northern Ireland), Erik Rasmussen (Denmark), Carmen Schmid (Austria), Lilia Taranu (Republic of Moldova), Aynur Tokel (Turkey) and Songli Zhu (China). Mr. Abdel-Aziz, Mr. Rasmussen and Ms. Zhu were the lead reviewers. The review was coordinated by Nalin Srivastava and Pedro Torres (secretariat).

B. Summary

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

1. Timeliness

5. The BR4 was submitted on 30 December 2019, before the deadline of 1 January 2020 mandated by decision 2/CP.17. The BR4 CTF tables were also submitted on 30 December 2019. The BR4 and CTF tables were resubmitted on 26 December 2020, before the review. Unless otherwise specified, the information and values from the latest submission are used in this report.

6. Romania informed the secretariat on 23 November 2020 about its intention to resubmit the BR4 and CTF tables during December 2020, with updated information on PaMs and projections. The ERT noted the challenges it faced in preparing for the review due to the proximity of the date of the resubmission of the BR4 and CTF tables to the review week.

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

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

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

Section of BR	*Completeness*	*Transparency*	*Reference to description of recommendation(s)*
GHG emissions and removals	Complete	Mostly transparent	Issue 1 in table 3

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

[2] Owing to the circumstances related to COVID-19, the technical review of the BR submitted by Romania had to be conducted remotely.

Section of BR	*Completeness*	*Transparency*	*Reference to description of recommendation(s)*
Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	Complete	Mostly transparent	Issue 1 in table 4
Progress in achievement of targets	Mostly complete	Partially transparent	Issues 1, 2 and 3 in table 6 Issue 1 in table 8 Issues 1 and 3 in table 12
Provision of support to developing country Parties[a]	NA	NA	NA

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

[a] 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.

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

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

1. Technical assessment of the reported information

8. Total GHG emissions[3] excluding emissions and removals from LULUCF decreased by 53.2 per cent between 1990 and 2018, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 60.0 per cent over the same period. Emissions decreased sharply between 1990 and 1993 (–26.6 per cent) due to the decline in economic activity in energy-intensive industries during the transition to a market-based economy. Between 1996 and 2000, emissions decreased by 24.5 per cent, mainly due to a change in the energy mix; a nuclear power plant started operation in 1996 contributing about 10.0 per cent of total electricity production. In 2008–2010, emissions decreased significantly (–17.2 per cent) as a result of the decline in economic activity due to the global financial crisis. During the economic recovery after 2010, Romania's GHG emissions decreased slightly by 6.5 per cent between 2010 and 2018, with a notable increase in electricity being generated by wind power plants (from about 0.5 to 11.0 per cent of total electricity generation).

9. Table 2 illustrates the emission trends by sector and by gas for Romania. Note that information in this paragraph and table 2 is based on Romania's 2020 annual submission, version 9, which was subject to review in November 2020 and the findings thereon were not available at the time of preparation of this review report.[4] All emission data in subsequent chapters are based on Romania's BR4 CTF tables unless otherwise noted. The emissions reported in the 2020 annual submission are the same as those reported in CTF table 1 for 1990–2017. Romania did not include 2018 emission data in CTF table 1.

Table 2
Greenhouse gas emissions by sector and by gas for Romania for 1990–2018

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2017*	*2018*	*1990–2018*	*2017–2018*	*1990*	*2018*
Sector									
1. Energy	175 925.95	99 941.95	86 320.53	78 616.58	77 005.99	–56.2	–2.0	70.9	66.3

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

[4] At the time of the review, the report on the individual review of the 2020 annual inventory submission of Romania had not yet been published.

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2017*	*2018*	*1990–2018*	*2017–2018*	*1990*	*2018*
A1. Energy industries	70 944.12	45 508.63	37 114.33	26 963.32	24 277.16	–65.8	–10.0	28.6	20.9
A2. Manufacturing industries and construction	49 243.17	17 192.72	10 929.94	11 702.01	12 165.49	–75.3	4.0	19.9	10.5
A3. Transport	12 438.59	9 912.57	14 236.47	17 975.64	18 435.22	48.2	2.6	5.0	15.9
A4. and A5. Other	12 067.30	9 536.48	10 758.96	11 874.93	12 249.50	1.5	3.2	4.9	10.5
B. Fugitive emissions from fuels	31 232.78	17 791.55	13 280.83	10 100.69	9 878.62	–68.4	–2.2	12.6	8.5
C. CO_2 transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	31 392.00	18 879.62	14 181.36	13 129.11	13 445.65	–57.2	2.4	12.7	11.6
3. Agriculture	35 652.98	19 028.96	18 087.27	19 238.14	19 854.03	–44.3	3.2	14.4	17.1
4. LULUCF	–18 917.49	–20 912.01	–20 718.12	–21 680.03	–24 458.63	29.3	12.8	NA	NA
5. Waste	5 023.36	5 303.93	5 584.18	5 891.63	5 809.44	15.6	–1.4	2.0	5.0
6. Other[a]	NO	NO	NO	NO	NO	NA	NA	NA	NA
Gas[b]									
CO_2	169 285.87	95 455.76	84 289.72	78 077.49	76 951.22	–54.5	–1.4	68.3	66.3
CH_4	60 017.60	36 329.49	31 036.71	28 706.54	28 183.63	–53.0	–1.8	24.2	24.3
N_2O	15 881.74	9 614.32	7 792.69	7 852.58	8 618.21	–45.7	9.7	6.4	7.4
HFCs	0.18	71.48	984.41	2 179.09	2 295.11	1 266 565.7	5.3	0.0	2.0
PFCs	2 808.43	1 674.72	9.13	5.58	4.97	–99.8	–10.9	1.1	0.0
SF_6	0.47	8.68	60.69	54.19	61.98	12 950.0	14.4	0.0	0.1
NF_3	NO	NO	NO	NO	NO	NA	NA	NA	NA
Total GHG emissions excluding LULUCF	**247 994.30**	**143 154.46**	**124 173.34**	**116 875.47**	**116 115.12**	**–53.2**	**–0.7**	**100.0**	**100.0**
Total GHG emissions including LULUCF	**229 076.81**	**122 242.45**	**103 455.22**	**95 195.44**	**91 656.49**	**–60.0**	**–3.7**	**NA**	**NA**

Source: GHG emission data: Romania's 2020 annual submission, version 9.

[a] Emissions and removals reported under the sector other (sector 6) are not included in the total GHG emissions.

[b] Emissions by gas without LULUCF. The Party did not report indirect CO_2 emissions.

10. In brief, Romania's national inventory arrangements were established in accordance with the government decision establishing the national system for the estimation of anthropogenic GHG emissions by sources and removals of CO_2 by sinks, regulated through the Kyoto Protocol.[5] The National Environmental Protection Agency is the national entity with overall responsibility for the national GHG inventory. Since the BR3, Romania has established a consortium of research institutes coordinated by the National Research and Development Institute for Cryogenic and Isotopic Technologies with a view to better coordinating the preparation of the LULUCF inventory. Previously, the LULUCF sector inventory was prepared by the Forest Research and Management Planning Institute.

11. In the BR4, the Party presented GHG emission trends by gas and by sector from 1989 (Romania's base year under the Convention and the Kyoto Protocol as a Party with an economy in transition) until 2018 with the trend analysis being carried out taking 1989 as the base year. The ERT notes that transparency could be improved by using 1990 as the base year in the discussion of GHG emissions and emission trends.

12. The ERT noted that net emissions in the LULUCF sector decreased from about –18.9 Mt CO_2 eq in 1990 to about –24.5 Mt CO_2 eq in 2018 (29.3 per cent). The ERT also noted that the information provided in the BR4 does not sufficiently explain the main drivers for the increase in GHG removals in the LULUCF sector. The ERT notes that Romania could

[5] Government decision 1570/2007, modified by decisions 668/2012, 120/2014 and 1022/2016.

improve transparency by providing information on the main drivers for the increase in GHG removals from the LULUCF sector since 1990.

2. Assessment of adherence to the reporting guidelines

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

Table 3
Findings on greenhouse gas emissions and removals from the review of the fourth biennial report of Romania

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 3 Issue type: transparency Assessment: recommendation	Romania reported in the BR4 (section 1.7, p.19) that some changes have occurred with respect to the national institutional arrangements related to the preparation of the GHG inventory for the LULUCF sector without providing summary information on the specific changes to these arrangements since the last BR. During the review, Romania clarified that the changes in the national inventory arrangements related to the LULUCF sector stem from the implementation of government decision 590/2019, which sets out the institutional arrangements for the preparation of the GHG inventory for the LULUCF sector. Romania also provided information on the responsibilities of the institutions involved in managing the LULUCF sector inventory. The ERT recommends that Romania enhance the transparency of its reporting by further elaborating on the changes to the institutional arrangements by providing summary information on changes to the national GHG inventory arrangements for the LULUCF sector since the previous BR.

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, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

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

1. Technical assessment of the reported information

14. 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.

15. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. The legislative package regulates emissions of CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 using 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. 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.

16. The EU 2020 climate and energy package includes the EU ETS and the ESD (see paras. 27–28 below). The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emission cap has been put in place for 2013–2020 with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. For 2030, a reduction target of 43 per cent below the 2005 level has been set for emissions covered by the EU ETS. Emissions from ESD sectors are regulated through member State specific targets that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020. The ESR, successor to the ESD, was adopted in 2018 with a target of reducing covered emissions by 30 per cent below the 2005 level by 2030.

17. 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 Commission proposed in March 2020 to enshrine the 2050 climate-neutrality target into the first European Climate Law. The European Green Deal calls for increasing the ambition of the 2030 emission reduction target to at least 50 per cent below the 1990 level. Member States will set out any increased ambition in the update of their NECPs.

18. 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_2 eq in 2013 to 89,809.45 kt CO_2 eq in 2020. Under the ESR, Romania has a national target of reducing emissions from the covered sectors to 2 per cent below the 2005 level by 2030. Romania did not report on any further national emission targets.

2. Assessment of adherence to the reporting guidelines

19. The ERT assessed the information reported in the BR4 of Romania and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 4.

Table 4
Findings on the assumptions, conditions and methodologies related to the quantified economy-wide emission reduction target from the review of the fourth biennial report of Romania

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation*
1	Reporting requirement specified in paragraph 5 Issue type: transparency Assessment: recommendation	Romania reported in CTF table 2(b) that LULUCF is included in its quantified economy-wide emission reduction target. However, the ERT noted that Romania's target for 2020 is part of the joint target of the EU and its member States, which does not include emissions/removals from the LULUCF sector. Moreover, Romania reported the base year for NF_3 as an empty cell in CTF table 2(b), without explaining why it did so. In the BR4 (section 2.3, p.25) it is stated that, according to the latest official GHG emission projections, Romania meets its annual ESD targets without the use of international carbon credits. However, the Party did not clearly state whether it intends to use international market-based mechanisms in achieving its emission reduction target. During the review, Romania explained that the contribution from the LULUCF sector is not included in its quantified economy-wide emission reduction target for 2020 but was erroneously reported as included in CTF table 2(b). In addition, the base year for all gases for all EU member States under the Convention is 1990 and the reporting of a blank cell for the base year for NF_3 in CTF table 2(b) was an error. The ERT, however, noted that Romania, as an EU member State, should not include NF_3 in its target as this is not included in the EU target. The Party confirmed that it does not intend to use international market-based mechanisms to achieve its 2020 emission reduction target under the Convention. The ERT recommends that Romania enhance the transparency of reporting by correctly reporting the description of its quantified economy-wide emission reduction target, specifying that NF_3 and the LULUCF sector are not included in the quantified economy-wide emission reduction target in CTF table 2(b) (e.g. using a notation key and/or providing relevant explanations as appropriate in a footnote to CTF table 2(b)) and that Romania does not intend to use international market-based mechanisms to achieve its quantified economy-wide emission reduction target.

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, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

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

1. Mitigation actions and their effects

(a) Technical assessment of the reported information

20. Romania provided information on its package of PaMs implemented, adopted and planned, by sector and by gas, in order to fulfil its commitments under the Convention. 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.

21. Romania also provided information on changes since its previous submission to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target. Following government decision 267/2019, a national system for reporting on PaMs and on projections of GHG emissions has been established. Moreover, according to government decision 43/2020 regarding the organization of the Ministry of Environment, Water and Forests, this ministry is now the competent authority responsible for coordinating the elaboration and submission of reports on PaMs and emission projections on the basis of information provided by central public authorities and institutions.

22. In its reporting on PaMs, Romania did not provide the estimated emission reduction impacts separately for any of its PaMs, but instead estimated the impacts of its PaMs for the following sectoral groups: combustion in energy industry and manufacturing and construction industry; transport; other (services, residential); fugitive emissions; IPPU; agriculture; LULUCF (estimates were not included in CTF table 3 but subsector estimates were reported in the textual part of the BR4); and waste. During the review, the Party explained that estimated impacts were not provided for individual PaMs mainly because of the lack of information related to the effect of individual PaMs and the interactions between PaMs, and the difficulties in estimating the effects of cross-cutting PaMs.

23. The Party described the general methodology used for estimating the impacts of its groups of PaMs. The estimated total effects of implemented and adopted PaMs in 2020, 2025, 2030, 2035 and 2040 were calculated by adding the effects estimated for each of the aforementioned sectoral groups. The estimated effects for each sectoral group of PaMs were calculated from the difference between emissions in the WOM and the WEM scenario. Romania reported that the grouping of PaMs is in line with EU regulation 749/2014 on structure, format, submission processes and review of information reported by EU member States pursuant to EU regulation 525/2013 on a mechanism for monitoring and reporting GHG emissions.

24. Romania's self-assessment of compliance with its emission reduction targets and institutional arrangements for the implementation of the ESD is based on coordination between the central and local authorities; evaluation of the effects of PaMs; links with research institutes and advice from the National Commission on Climate Change; use of the national GHG inventory; use of data and information on PaMs to mitigate GHG emissions and enhance removals; and information from GHG emission/removal projections. So far, the Party's national rules for taking action against non-compliance includes only the economic operators under the EU ETS. Rules and procedures for taking local action against domestic non-compliance with emission reduction targets are being established.

25. The key overarching cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO_2 emissions from cars and vans, the carbon capture and storage directive and the general programmes for environmental conservation, namely the 7th Environment Action Programme and the clean air policy package. The 2030 climate and energy framework, adopted in 2014, includes more ambitious targets that will be updated as part of the European Green Deal.

26. The achievement of the Energy Union objectives and targets is ensured through a combination of Energy Union initiatives and national policies set out in integrated NECPs. The NECPs are periodically updated to reflect changes to EU policy, such as the implementation of the European Green Deal. During the review, Romania explained that its NECP (version of April 2020) integrates the objectives of its two main strategies: the National Energy Strategy for 2019–2030, which includes a 2050 perspective; and the National Long-term Renovation Strategy to support the renovation of the national stock of residential and non-residential buildings, both public and private, into a highly energy-efficient and decarbonized building stock by 2030. Romania also stressed that the NECP was submitted in April 2020 to the European Commission as part of its reporting obligations under EU directive 2018/1999 on the governance of the Energy Union and Climate Action. The targets, objectives and actions therein were approved through a memorandum by the Romanian Government. EU legislation as well as EU member State targets and NECPs are likely to be revised in order to achieve the revised EU target of a reduction in GHG emissions of at least 55 per cent by 2030 compared with the 1990 level, which was communicated in the EU's updated nationally determined contribution. During the review, Romania indicated that its NECP was under a national strategic environmental assessment and confirmed that it was included in the WEM scenario.

27. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities), which produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 and 2030 targets (a 21 and 43 per cent emission reduction below the 2005 level, respectively) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013 and the system now includes aircraft operations (since 2012) as well as N_2O emissions from chemical industry, PFC emissions from aluminium production and CO_2 emissions from some industrial processes that were not covered in the previous phases of the EU ETS (since 2013). Auctioning is the default method for allocating allowances; however, harmonized rules for free allocations, based on benchmark values achieved by the most efficient 10 per cent of installations, are still in place as a safeguard for the international competitiveness of industrial sectors at risk of carbon leakage.

28. The ESD became operational in 2013 and covers transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The ESD includes binding annual targets for each member State for 2013–2020. The ESR sets national emission reduction targets for 2030 ranging from 0 to 40 per cent below the 2005 level, and trajectories with annual limits for 2021–2030, for all member States, and keeps many of the flexibilities of the ESD. Romania's ESR target for 2030 is a 2 per cent reduction in emissions compared with the 2005 level.

29. Romania highlighted the EU-wide Long-Term Climate Strategy, which aims to achieve climate neutrality by 2050 with the contribution of all key sectors of the economy, from the power sector to industry, mobility, buildings, agriculture and forestry. This objective is at the heart of the European Green Deal and in line with the EU's commitment to global climate action under the Paris Agreement.

30. Romania introduced national-level policies to achieve its targets under the ESD. The key policies reported are the National Climate Change and Low Carbon Green Growth Strategy. In addition, the National Action Plan for Implementation of the National Climate Change and Low Carbon Green Growth Strategy for 2016–2020 provides the framework for future climate policy and for Romania meeting its emission reduction target for 2020. The strategy and action plan are to be seen as programmatic documents for 2016–2020 and 2020–2030, including a road map for 2050, and they establish Romania's operational actions for GHG emission mitigation and climate change adaptation. For mitigation, the strategy adopts quantifiable targets in line with EU targets for 2030 (40 per cent reduction in GHG emissions compared with the 1990 level and improving energy efficiency to 27 per cent in relation to a 'business as usual' scenario), and considers Romania's commitments for 2020 under the EU (increasing the share of renewable energy in gross final energy consumption to 24 per cent, reducing primary energy consumption by 19 per cent in relation to a 'business as usual'

scenario, staying below the AEA for ESD sectors and enforcing EU ETS legislation). The action plan includes actions, timelines, specific responsibilities for each sector and institution, and criteria and indicators to assess the achievement of the proposed objectives.

31. The total mitigation effect of PaMs in the sectoral group combustion in energy industry and manufacturing and construction industry is the most significant. Other policies that are expected to have delivered significant emission reductions by 2020 are to be found in the sectoral groups fugitive emissions and IPPU.

32. The ERT was not able to assess the significance in terms of emission reductions of any individual mitigation action because information on the effects of individual PaMs was not reported (see paras. 22–23 above). The three sectoral groups mentioned in paragraph 31 above are followed by waste, transport, other (e.g. services, residential) and agriculture in terms of emission reduction significance. Estimates for the total effects of PaMs in the LULUCF sector have not been reported. During the review, Romania provided a list of key PaMs.

33. During the review, Romania explained that among the 11 PaMs reported as planned, three were so close to implementation that they have been included in the WEM scenario (NECP, the National Energy Strategy for 2019–2030 and the National Long-term Renovation Strategy). Of the remaining eight PaMs not yet implemented, five are expected to be implemented before 2031 (modernization of the industrial sector (2021), modernization of the transport system (2021), improving livestock and manure management (2019), enhancing sustainable management of forests, restoration of degraded lands (2020) and improving solid waste management (2019)). Romania also reported the total impact of PaMs for ESD and ETS sectors for planned measures in the WAM scenario; however, for adopted or implemented PaMs in the WEM scenario, the split between ESD and ETS sectors was not provided.

34. Table 5 provides a summary of the reported information on the PaMs of Romania, including information on the estimated effects of all PaMs within a sector affecting the level of emissions in the sector.

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

Sector	*Key PaMs*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*	*Estimate of mitigation impact in 2030 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	National Climate Change and Low Carbon Green Growth Strategy and National Action Plan for Implementation of the Strategy for 2016–2020	IE	IE
	Sustainable Development Strategy 2030	IE	IE
	Law 278/2013 on industrial emissions	IE	IE
	EU ETS	IE	IE
	ESD	IE	IE
	NECP 2021–2030	IE	IE
Energy		38 593.00[a]	53 194.00[a]
Energy efficiency	Third National Action Plan for Energy Efficiency 2014–2020	IE	IE
	Fourth National Action Plan for Energy Efficiency 2017–2020	IE	IE
Energy supply and renewables	National Renewable Energy Action Plan	IE	IE
	Law 220/2008 on establishing a system to promote the production of energy from RES, amended and completed by law 139/2010	IE	IE
Transport		3 339.00	3 512.00
	EU regulation 443/2009 on emission performance standards for new passenger cars	IE	IE

Sector	*Key PaMs*	*Estimate of mitigation impact in 2020 (kt CO_2 eq)*	*Estimate of mitigation impact in 2030 (kt CO_2 eq)*
	EU regulation 510/2011 on emission performance standards for new light commercial vehicles	IE	IE
	EU directives 2003/30/EC and 2009/29/EC on use of biofuels and bioliquids in the transport sector	IE	IE
	General Transport Master Plan		
IPPU		6 186.00	8 675.00
	EU regulation 517/2014 on fluorinated gases	IE	IE
	EU directive 40/2006/EC on emissions from air-conditioning systems in motor vehicles	IE	IE
Agriculture		1 359.00	3 735.00
	National Rural Development Programme 2014–2020	IE	IE
LULUCF		2 438.00	5 138.00
	EU regulation 1305/2013 on support for rural development by the European Agricultural Fund for Rural Development	IE	IE
	National Forestry Strategy 2018–2027	IE	IE
Waste		3 859.00	6 069.00
	Law 211/2011 on waste management, with subsequent amendments	IE	IE
	National Waste Management Plan	IE	IE
	National Strategy on Waste Management	IE	IE

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

[a] Aggregated mitigation impact from the sectoral group PaMs combustion in energy industry and manufacturing and construction industry, other (services, residential), agriculture and fugitive emissions.

35. The ERT noted that some planned mitigation actions were reported in the BR3, but were not included in the BR4 (e.g. improving coal handling techniques, improvements in the oil and gas sector, improving the quality of feed for cattle, sheep and goats, order 1182/2005 on the approval of the Code of Good Agricultural Practice for the protection of waters against pollution by nitrates from agricultural sources and improving wastewater management). During the review, the Party explained that the list of planned mitigation actions included in the WAM scenario, as reported in the BR3, was updated for the BR4. Consequently, four PaMs were excluded from the BR4 because Romania considers that the mitigation impact of those measures will be achieved by voluntary actions by the private sector. The ERT notes that the transparency of the reporting could be improved by Romania including in its next BR an explanation for excluding previously reported mitigation actions.

36. The ERT noted that out of 78 mitigation actions reported in CTF table 3 only 34 were described in the BR4. Similarly, the BR4 includes the mitigation action on the national strategy on sludge management in Romania, which is not reported in CTF table 3. During the review, Romania explained that while the BR4 includes a description of national strategies, plans and programmes to promote the economic development of Romania, taking into account its national climate change targets, CTF table 3 reports an extended list of mitigation actions from national framework policies developed in line with EU targets. The ERT notes that the transparency of the reporting could be improved by Romania providing the reason why some national strategies, plans and programmes actions are included in the BR but not reported in CTF table 3.

(b) Policies and measures in the energy sector

37. Romania has implemented PaMs for the energy sector in order to meet medium- and long-term energy demand in compliance with the sustainable development principles and in line with the EU energy and environmental policy. This includes prioritizing energy

efficiency PaMs and encouraging the use of RES for electricity and heating production. The national energy regulation framework includes norms specific to the electricity and/or heating generation sector, as well as norms regarding the improvement of consumer energy efficiency.

38. Romania's Energy Strategy 2007–2020 and the National Strategy for Sustainable Development: Horizons 2013–2020–2030 are the main cross-sectoral PaMs that apply to the energy sector. The Energy Strategy has the following strategic objectives which could contribute to reducing GHG emissions: increasing the performance level of the national electricity distribution networks; increasing energy efficiency by using modern technologies; promoting the production of energy from renewable resources; promoting the production of electricity and heating in cogeneration plants; and reducing the negative impact of the energy sector on the environment by promoting zero emission modern technologies. Romania reported that the Energy Strategy is being updated for 2019–2030, with a 2050 perspective, taking into consideration the demand and international obligations of Romania, as well as the achievement of an optimal scenario for the development of the national energy system.

39. **Energy efficiency.** The main policy related to energy efficiency is the third National Action Plan for Energy Efficiency 2014–2020 and fourth National Action Plan for Energy Efficiency 2017–2020, focusing on primary energy-saving measures and on increasing energy efficiency, both in the energy supply system and in final energy consumption in the industrial, construction, services, agriculture and residential sectors. It includes measures aimed at improving the thermal performance of buildings; modernizing district heating infrastructure for transportation and distribution of heat; and improving public lighting and buildings by using light-emitting diode technology.

40. **Energy supply and renewables.** The total primary energy supply for electricity production in Romania in 2018 consisted mostly of natural gas (28.8 per cent), oil (28.3 per cent) and coal (15.2 per cent), with the remaining energy being supplied by other RES (14.4 per cent), nuclear power (9.0 per cent), hydropower (3.7 per cent) and electricity imports (0.7 per cent). The major policy in the energy supply sector is the Energy Strategy 2007–2020, which envisages promoting the production of RES.

41. The main policy related to RES is the National Renewable Energy Action Plan and law 220/2008 on establishing a system to promote the production of energy from RES, amended and completed by law 139/2010. The National Renewable Energy Action Plan promotes the use of energy from renewable sources per technology type (hydropower, solar power, wind power, biomass) in order to meet the national 2020 target for the share of RES in gross final energy consumption (24 per cent). The share of RES in gross final energy consumption in 2017 and 2018 was 24.5 and 23.9 per cent, respectively, which exceeds the indicative trajectory of 21.8 per cent for 2017–2018 established in the National Renewable Energy Action Plan and updated in the indicative trajectory of the Renewable Energy Directive. In 2020, the estimated contributions expected from each renewable energy technology are 8,400 GWh from wind power, 19,768 GWh from hydropower, 320 GWh from solar power and 1,950 GWh from biomass.

42. **Residential and commercial sectors.** The fourth National Action Plan for Energy Efficiency 2017–2020 proposes significant measures to improve energy efficiency for final energy consumers. It focuses on new electrical equipment with enhanced performance and thermal rehabilitation of buildings in the residential and services sectors and development of energy services.

43. **Transport sector.** In Romania, the objective in the transport sector is to develop a sustainable system improving social cohesion, providing access in peripheral areas, reducing environmental impact, including reducing GHG emissions, promoting economic competitiveness through the improvement of the infrastructure and ensuring an optimal fuel mix, as well as the use of biofuels and use of information and communication technology to increase the efficiency of the sector. The reduction in CO_2 emissions will be achieved by innovation in the automobile propulsion technology area and the use of biofuels. Romania will consider the technical and financial options, competitiveness and social impact when establishing the balance between the demand for mobility and the environmental protection requirements.

44. Most of the PaMs in the transport sector focus on the implementation of relevant EU legislation, such as regulation 443/2009, which sets emission performance standards for new passenger cars; regulation 510/2011, which sets emission performance standards for new light commercial vehicles; and directives 2003/30/EC and 2009/29/EC, which promote the use of biofuels and bioliquids to meet the EU target of a 10.0 per cent share of RES in the final national energy consumption in the transport sector in 2020. Romania also reported on its General Transport Master Plan, which is a strategic planning instrument for major investments in the transport sector. The plan includes environmental objectives such as the promotion of investment projects contributing to a sustainable transport system and the reduction of GHG emissions.

45. **Industrial sector.** The Sustainable Development Strategy 2030 and the National Climate Change and Low Carbon Green Growth Strategy are the main PaMs that guide Romania's industrial development policy in aligning with the general objectives of sustainable economic development and with EU industrial policies. One of the aims of the national industrial development policy is to apply the best technologies for improving the energy efficiency of industrial operators through systematic energy audits.

(c) Policies and measures in other sectors

46. **Industrial processes.** Between 1990 and 2018, GHG emissions from the IPPU sector decreased by 57.2 per cent, mainly owing to Romania's transition to a market-based economy. The main PaMs addressing the IPPU sector are the EU ETS, EU regulation 517/2014 on fluorinated gases and EU directive 40/2006/EC on emissions from air-conditioning systems in motor vehicles. Further reductions in emissions from industrial processes will mainly be carried out through increasing energy efficiency, optimizing technological flows and promoting green technologies. To achieve this aim, the use of new technologies, the re-engineering of industrial operations and the efficient processing of raw materials and energy resources will be required.

47. **Agriculture.** Romania is implementing a wide range of PaMs in the agriculture sector that are supported by the National Rural Development Programme 2014–2020. The most relevant PaMs include activities for promoting climate change knowledge transfer and advisory services, financial support for farm modernization, and promoting best practices in agriculture and carbon sequestration. Examples of such activities include improving livestock management and animal manure management to reduce CH_4 emissions, reducing fertilizer/manure applied to agricultural soils to decrease N_2O emissions, improving cropland and grassland management and expanding ecological agriculture to enhance carbon sequestration.

48. **LULUCF.** The main PaMs in the LULUCF sector are focused on the management of existing forests, expansion of forest areas, preservation of natural ecosystems and restoration of degraded lands, in accordance with the National Forestry Strategy 2018–2027. Regarding forest management, the main measures include conservation of carbon stocks and enhancement of forest production, prevention of deforestation, protection against natural disturbances and promotion of the sustainable management of privately owned forests. The main measures related to the expansion of forest areas include afforestation on degraded lands and the establishment of forest shelterbelts. The preservation and restoration measures include improvement of grassland management, preservation of grassland areas, combating desertification, prevention of drainage of wetlands, restoration of wetlands through rewetting and restoring degraded lands and soils. There are additional measures focused on increasing the harvested wood products pool and the substitution of GHG-intensive feedstocks and materials with harvested wood products.

49. **Waste management.** Law 211/2011 on waste management, the National Waste Management Plan and the National Strategy on Waste Management are the main policies in the waste sector. Romania has implemented a number of policies for waste management, including closure and rehabilitation of non-compliant landfills and opening/extension of new compliant landfills, separate collection and composting of biodegradable waste, reducing the amount of biodegradable waste through additional capacity of waste recycling and recovery, recycling and recovery of packaging waste (70 per cent by 2030), reuse and recycling of municipal waste (60 per cent by 2030), research on energy production from waste and use of

economic instruments such as an incineration pricing policy to encourage recycling/reuse. PaMs for wastewater treatment include construction/rehabilitation of sewerage networks and wastewater treatment plants, reducing the proportion of untreated wastewater and significantly increasing recycling and safe reuse.

(d) Response measures

50. Romania's initiatives aimed at minimizing adverse impacts include the provision of fast-track finance and cooperation with the International Renewable Energy Agency, which has enabled Romania to advise other member countries on renewable energy and joint implementation projects. Romania also contributes to the EU Eastern Europe Energy Efficiency and Environment Partnership and provides support for energy efficiency and environmental sustainability projects in Armenia, Georgia, the Republic of Moldova and Ukraine. As part of bilateral cooperation Romania also offered support to Georgia for disaster prevention and preparedness as part of adaptation measures.

(e) Assessment of adherence to the reporting guidelines

51. The ERT assessed the information reported in the BR4 of Romania and identified issues relating to completeness and transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 6.

Table 6
Findings on mitigation actions and their effects from the review of the fourth biennial report of Romania

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 6 Issue type: transparency Assessment: recommendation	The ERT noted that slightly different names, for what are probably the same mitigation actions, were used in different places within the BR4 and between the BR4 and CTF table 3 (Joint Order MADR/MMAP/ANSVSA 352/636/54/2015, National Rural Development Programme 2014–2020 and Sustainable Development Strategy 2030). During the review, Romania explained that in one case the measure mentioned in the BR4 (Joint Order MADR/MMAP/ANSVSA 352/636/54/2015) is part of a measure reported under another name in CTF table 3 (National Rural Development Programme (PNDR) 2014–2020). Moreover, the same name (i.e. Sustainable Development Strategy 2030) should have been used for the mitigation action throughout the BR4. Romania also explained that the mitigation action in the agriculture sector entitled "Order 1182/2005 on the approval of the Code of Good Agricultural Practice for the protection of waters against pollution by nitrates from agricultural sources" was erroneously excluded from the BR4. The ERT recommends that Romania enhance the transparency of its reporting by ensuring consistency between the names of the PaMs described in the textual part of the BR and in CTF table 3 and by including all relevant PaMs reported in the previous BR that are still operational.
2	Reporting requirement specified in paragraph 7 Issue type: transparency Assessment: recommendation	The ERT noted from the information reported by the Party in the BR4 (section 3.4, p.77) that it is not clear which changes to the domestic institutional arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target have been made since the submission of the BR3. During the review, Romania explained that the changes to the domestic institutional arrangements since the BR3 include new legislative acts adopted in 2019 to improve domestic compliance, monitoring, reporting and archiving of information[a] and provided detailed information thereon. The ERT recommends that Romania enhance the transparency of its reporting by clearly explaining the changes since its last BR to its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target.

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
3	Reporting requirement specified in CTF table 3 Issue type: transparency Assessment: recommendation	The ERT noted that three of the mitigation actions reported by Romania in CTF table 3 as planned (2021–2030 Integrated National Energy and Climate Plan, version of April 2020, National Energy Strategy for 2019–2030, with the perspective of 2050, and the National Long-term Renovation Strategy) were reported as being included in the WEM projection scenario. The ERT also noted that information on objective, type, status and start year for the mitigation action National Forestry Strategy 2018–2027 was not reported in CTF table 3. The ERT further noted that Romania reported blank cells for the mitigation impact of PaMs relevant to the LULUCF sector, without providing an explanation for doing so either in the BR or in CTF table 3. During the review, Romania confirmed that the three PaMs are included in the WEM scenario, although at the time of the BR4 elaboration their legislative status was "planned". Romania explained that the mitigation action 2021–2030 Integrated National Energy and Climate Plan, version of April 2020, was approved through a memorandum by the Romanian Government but was under a strategic environmental assessment process. Regarding the National Energy Strategy for 2019–2030, with the perspective of 2050, the adoption process was advanced but not finalized owing to the national electoral process in December 2020 and the COVID-19 pandemic. With the energy mix and the targets of this energy strategy for 2030 being the same as those included in the NECP, this action was also included in the WEM scenario. The National Long-term Renovation Strategy was approved through a government decision in November 2020. Romania explained that the status of implementation was reported as "planned" because it was not approved at the government level when the BR4 was elaborated; but it was included in the WEM projection scenario as the expected start year of implementation was still assumed to be 2020. During the review, Romania provided the missing information for the mitigation action National Forestry Strategy 2018–2027, including total estimates of the mitigation impacts in the LULUCF sector, and stated that the information should have been reported in CTF table 3. The ERT recommends that Romania enhance the transparency of its reporting on mitigation actions by correctly reporting the status of implementation of PaMs in the BR and in CTF table 3 in accordance with the definitions provided in the UNFCCC reporting guidelines on NCs and by providing any explanations as necessary. The ERT also recommends that Romania include the required information in CTF table 3 (e.g. objective, type, status, start year and estimates of the impacts of mitigation actions) for all reported mitigation actions and, if information cannot be provided on all mitigation impacts, Romania should clearly explain why this is not possible due to its national circumstances.
4	Reporting requirement specified in paragraph 24 Issue type: completeness Assessment: encouragement	The ERT noted that the Party did not report the domestic arrangements established for the process of the self-assessment of compliance with emission reductions in comparison with emission reduction commitments or the level of emission reduction that is required by science. During the review, Romania explained that law 14/2019, which is currently in force, establishes the legal, institutional and procedural framework to implement the ESD in Romania. The ERT encourages Romania to report, to the extent possible, information on its domestic arrangements established for the process of the self-assessment of compliance with emission reductions in comparison with emission reduction commitments or the level of emission reduction that is required by science, including any relevant legislation that governs such arrangements.

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs or to the CTF table number from the "Common tabular format for 'UNFCCC biennial reporting guidelines for developed country Parties'". The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

[a] For example, government decision 267/2019 on the establishment of a national system for reporting on PaMs and on projections of anthropogenic GHG emissions by sources and removals by sinks and law 14/2019 establishing the legal, institutional and procedural framework to implement the ESD in Romania.

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

(a) Technical assessment of the reported information

52. Romania does not intend to use units from market-based mechanisms under the Convention to meet its commitment under the ESD. Romania reported in the BR4 (section 2.3, p.25) that, according to the latest official GHG emission projections, it will meet its annual ESD target on the basis of domestic PaMs, without the use of market-based mechanisms. Given that the contribution of LULUCF activities is not included in the joint EU target under the Convention, the reporting of the contribution of LULUCF activities is not applicable for Romania. Table 7 illustrates Romania's ESD emissions and use of units from market-based mechanisms for achieving its ESD target.

Table 7
Summary of information on the use of units from market-based mechanisms by Romania for achieving its target

Year	*ESD emissions (kt CO_2 eq)*	*AEA (kt CO_2 eq)*	*Use of units from market-based mechanisms (kt CO_2 eq)*[a]	*Annual AEA surplus/deficit (kt CO_2 eq)*	*Cumulative AEA surplus/deficit (kt CO_2 eq)*
2013	72 720.00	75 630.01	NA	2 910.01	2 910.01
2014	72 530.00	77 452.13	NA	4 922.13	7 832.13
2015	74 560.00	79 274.25	NA	4 714.25	12 546.38
2016	73 120.00	81 096.38	NA	7 976.38	20 522.76
2017	75 360.00	84 055.28	NA	8 695.28	29 218.04
2018	77 639.31	85 973.34	NA	8 334.03	37 552.07

Sources: Romania's BR4 and BR4 CTF table 4(b), information provided by the Party during the review and EU transaction log (AEAs).

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 annual or cumulative ESD emissions were higher than the AEA or cumulative AEAs.

[a] "NA" indicates that the Party stated in its BR4 that it does not intend to use market-based mechanisms for achieving its target.

53. In assessing the progress towards achieving the 2020 joint EU target, the ERT noted that Romania's emission reduction target for the ESD is 19.0 per cent above the base-year level (see para. 18 above). In 2018, Romania's ESD emissions were 9.7 per cent (8,334.03 kt CO_2 eq) below the AEA. Without the use of market-based mechanisms, Romania has a cumulative surplus of 37,552.07 kt CO_2 eq with respect to its AEAs between 2013 and 2018.

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

(b) Assessment of adherence to the reporting guidelines

55. The ERT assessed the information reported in the BR4 of Romania and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 8.

Table 8
Findings on estimates of emission reductions and removals and on the use of units from market-based mechanisms and land use, land-use change and forestry from the review of the fourth biennial report of Romania

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation*
1	Reporting requirement specified in paragraph 10 Issue type: transparency	The ERT noted that Romania reported information on the LULUCF sector in CTF table 4(a)II. However, emissions/removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target of the EU and its member States.

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation
	Assessment: recommendation	During the review, Romania acknowledged that the information reported in CTF table 4(a)II is not relevant for the 2020 target. The ERT recommends that Romania increase the transparency of its reporting by excluding information on the LULUCF sector from CTF table 4(a)II given that emissions/removals from this sector are not included in the quantified economy-wide emission reduction target of the EU and its member States.

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, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

3. Projections overview, methodology and results

(a) Technical assessment of the reported information

56. Romania reported updated projections for 2020 and 2030 relative to actual inventory data for 2018 under the WEM scenario for all sectors. The WEM scenario reported by Romania includes PaMs implemented and adopted until December 2020.

57. In addition to the WEM scenario, Romania reported the WAM and WOM scenarios. The WAM scenario includes planned PaMs that are likely to be implemented, while the WOM scenario excludes PaMs aimed at reducing GHG emissions. Romania provided a definition of its scenarios, explaining that its WEM scenario includes the same development of socioeconomic indicators as the WOM scenario but also contains PaMs aimed at reducing GHG emissions. The WAM scenario includes additional PaMs that are planned to be implemented if additional funding, either at the national level or through voluntary agreements with companies, or business or industrial associations, is available. The definitions indicate that the scenarios were prepared in accordance with the UNFCCC reporting guidelines on BRs.

58. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO_2, CH_4, N_2O, PFCs, HFCs and SF_6 (treating PFCs and HFCs collectively in each case) for 2020–2030 in CTF tables 6(a), 6(b) and 6(c). Additionally, projections for 2025, 2035 and 2040 were reported in the textual part of the BR4. 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.

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

59. The methodology used for the preparation of the projections is identical to that used for the preparation of the emission projections for the NC7. Romania did not provide information on the changes since the submission of its NC7 to the assumptions, methodologies, models and approaches used for the projection scenarios.

60. To prepare its projections, Romania relied on key underlying assumptions relating to GDP growth rate, population, population growth, number of households, international oil price, international coal price and international gas price. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections and were also included in CTF table 5. Romania expects that its population and the number of households will decrease slightly by 2030. GDP is projected to decrease from 4.4 per cent in 2018 to –3.8 per cent in 2020 as a result of the COVID-19 pandemic, and to 3.0 per cent in 2030. The ERT noted that the international oil, coal and gas prices were reported as USD/boe in CTF table 5. During the review Romania explained that the correct unit for international oil, coal and gas prices is EUR 2016/GJ. In addition to the key underlying assumptions in CTF table 5, Romania included additional information on sectoral parameters in the BR4. The ERT noted that the reference year for projections reported in the BR4 was not consistent between different sectors (e.g. for the energy sector, projection parameters were provided with a reference to 2005, for other sectors they were provided with a reference to 2018, and no parameters were included in the BR4 for the waste sector). During the review Romania explained that 2005 was the reference year used for the WOM scenario

and 2018 for the WEM and WAM scenarios. In some cases, the reference year 2017 was also used when compiling information on emission trends. The ERT noted that transparency could be improved by reporting sectoral key underlying assumptions and historical data using the same reference year to facilitate the general understanding of the emission trends between sectors.

61. Sensitivity analyses were conducted with a focus on the energy sector. Minimum and maximum scenarios for the economic recovery with different assumptions regarding GDP, primary energy consumption, final energy consumption, and gross electricity consumption were carried out against a reference scenario. The average annual GDP growth rates were obtained from the National Commission for Strategy and Prognosis and from the European Commission.

(c) Results of projections

62. The projected emission levels under different scenarios and information on the quantified economy-wide emission reduction target are presented in table 9 and figure 1.

Table 9
Summary of greenhouse gas emission projections for Romania

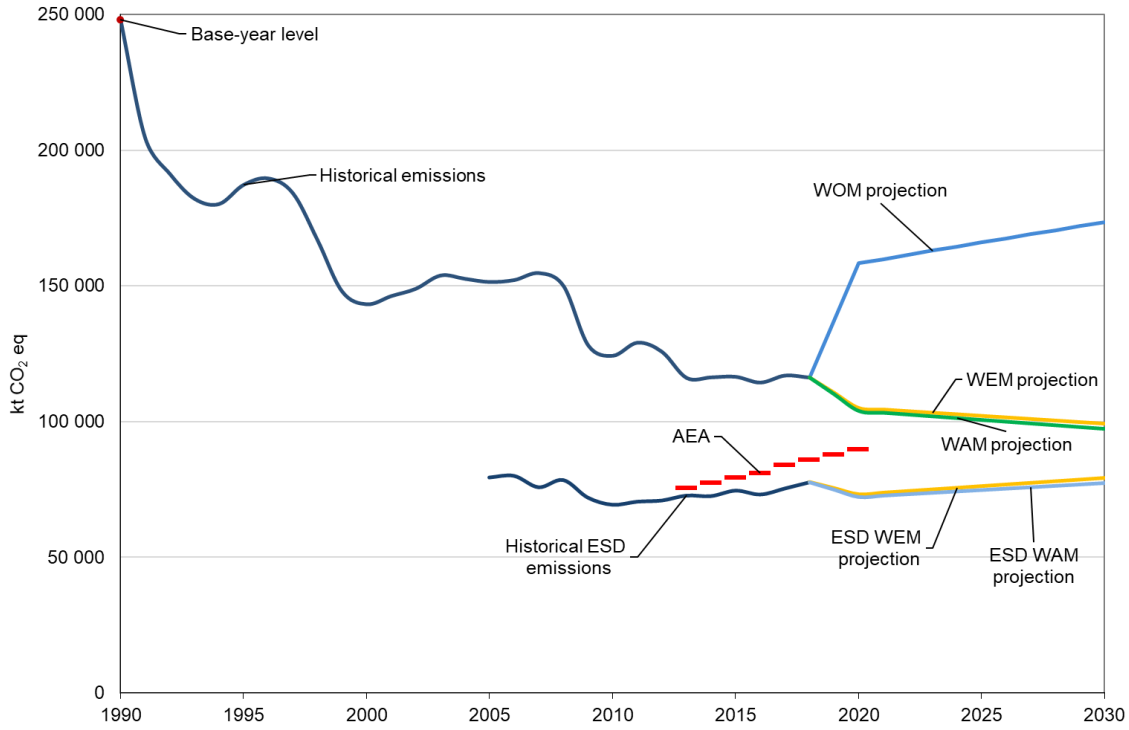
	Total GHG emissions		*Emissions under the ESD*	
	GHG emissions (kt CO_2 eq/year)	*Change in relation to 1990 level (%)*	*ESD emissions (kt CO_2 eq/year)*	*Difference from 2020 AEA (%)*
2020 AEA under the ESD[a]	NA	NA	89 809.45	NA
Inventory data 1990	247 994.29	NA	NA	NA
Inventory data 2018	116 115.12	–53.2	77 639.31	–13.6
WOM projections for 2020	157 718.13	–36.4	NA	NA
WEM projections for 2020	105 302.23	–57.5	73 189.99	–18.5
WAM projections for 2020	104 383.59	–57.9	72 271.35	–19.5
WOM projections for 2030	171 809.48	–30.7	NA	NA
WEM projections for 2030	98 457.39	–60.3	79 106.15	NA
WAM projections for 2030	96 625.11	–61.0	77 393.71	NA

Sources: Romania's BR4 and BR4 CTF table 6, and EU transaction log (AEAs). ESD emissions and projections data were provided by Romania during the review.

Note: The projections are for GHG emissions excluding LULUCF and excluding indirect CO_2.

[a] The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its member States. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. Romania's target under the ESD is to limit its emission growth to 19 per cent above the 2005 level by 2020.

Figure 1
Greenhouse gas emission projections reported by Romania



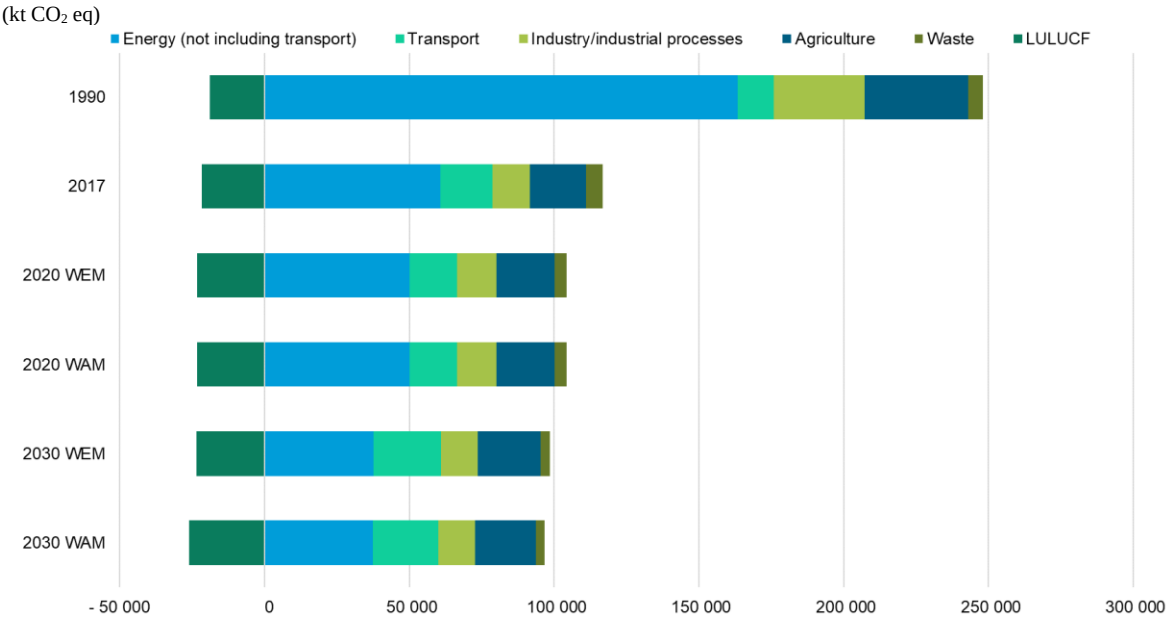
Sources: EU transaction log (AEAs) and Romania's BR4 and BR4 CTF tables 1 and 6. ESD emissions and projections data were provided by Romania during the review.

63. Romania's total GHG emissions excluding LULUCF in 2020 and 2030 are projected under the WEM scenario to decrease by 57.5 and 60.3 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be lower than those in 1990 by 57.9 and 61.0 per cent, respectively.

64. Romania's target under the ESD is to limit its ESD emission growth to 19 per cent above the 2005 level by 2020 (see para. 18 above). Romania's AEAs, which correspond to its national emission target for ESD sectors, change linearly from 75,630.01 kt CO_2 eq in 2013 to 89,809.45 kt CO_2 eq in 2020. The ERT noted that the Party's cumulative surplus of AEAs is 37,552.07 kt CO_2 eq, which suggests that Romania expects to meet its target under the WEM scenario.

65. Romania presented the WEM and WAM scenarios by sector for 2020 and 2030, as summarized in figure 2 and table 10.

Figure 2
Greenhouse gas emission projections for Romania presented by sector



Source: Romania's BR4 CTF table 6.

Table 10
Summary of greenhouse gas emission projections for Romania presented by sector

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
		2020		*2030*		*1990–2020*		*1990–2030*	
Sector	*1990*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
Energy (not including transport)	163 486.92	50 122.66	50 122.66	37 532.70	37 311.47	–69.3	–69.3	–77.0	–77.2
Transport	12 438.59	16 260.34	16 260.34	23 408.87	22 625.24	30.7	30.7	88.2	81.9
Industry/industrial processes	31 392.00	13 824.01	13 824.01	12 777.38	12 777.38	–56.0	–56.0	–59.3	–59.3
Agriculture	35 652.98	20 404.97	19 979.47	21 643.78	20 906.21	–42.8	–44.0	–39.3	–41.4
LULUCF	–18 917.49	–20 926.84	–23 298.02	–23 527.55	–25 969.43	10.6	23.2	24.4	37.3
Waste	5 023.36	4 690.24	4 197.10	3 094.68	3 004.81	–6.6	–16.4	–38.4	–40.2
Other	NO	NO	NO	NO	NO	NA	NA	NA	NA
Total GHG emissions excluding LULUCF	**247 994.29**	**105 302.23**	**104 383.59**	**98 457.39**	**96 625.11**	**–57.5**	**–57.9**	**–60.3**	**–61.0**

Source: Romania's BR4 CTF table 6.

66. According to the projections reported for 2020 under the WEM scenario, the most significant absolute emission reductions are expected to occur in the energy sector (excluding transport), amounting to a projected reduction of 69.3 per cent between 1990 and 2020. All sectoral projections, except in the transport sector, show decreasing GHG emission trends by 2020 compared with the 1990 level. GHG removals in the LULUCF sector are expected to increase. The pattern of projected emissions reported for 2030 under the same scenario remains the same for the energy, industry/industrial processes and waste sectors; however, GHG emissions are expected to increase in the transport and agriculture sectors. The emissions in the transport sector are closely correlated with the socioeconomic development of Romania and it is expected that the emissions will increase in 2020 and 2030 as Romania recovers from the COVID-19 pandemic. In addition, emissions in the transport sector show an increasing trend because Romania holds a key position at the eastern border of the EU as a transit area both on the east–west direction (connection with Asia via the Black Sea) and

north–south (from the Baltic Sea to the Mediterranean Sea). For the agriculture sector, the expected increase in livestock numbers is connected with the upward trend of emissions in this sector.

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

68. Romania presented the WEM and WAM scenarios by gas for 2020 and 2030, as summarized in table 11.

Table 11
Summary of greenhouse gas emission projections for Romania presented by gas

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
		2020		*2030*		*1990–2020*		*1990–2030*	
Gas	*1990*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
CO_2[a]	169 285.87	67 306.49	67 306.49	61 856.03	60 865.13	–60.2	–60.2	–63.5	–64.0
CH_4	60 017.60	26 399.53	25 478.03	23 485.13	22 629.08	–56.0	–57.5	–60.9	–62.3
N_2O	15 881.74	9 159.29	9 162.15	11 054.26	11 068.93	–42.3	–42.3	–30.4	–30.3
HFCs	0.18	2 365.73	2 365.73	2 028.38	2 028.38	1 314 194.4	1 314 194.4	1 126 777.8	1 126 777.8
PFCs	2 808.43	5.91	5.91	6.44	6.44	–99.8	–99.8	–99.8	–99.8
SF_6	0.47	65.28	65.28	27.15	27.15	13 789.4	13 789.4	5 676.6	5 676.6
NF_3	NO	NO	NO	NO	NO	NA	NA	NA	NA
Total GHG emissions without LULUCF	**247 994.29**	**105 302.23**	**104 383.59**	**98 457.39**	**96 625.11**	**–57.5**	**–57.9**	**–60.3**	**–61.0**

Source: Romania's BR4 CTF table 6.
[a] Romania did not include indirect CO_2 emissions in its projections.

69. For 2020, the most significant absolute reductions under the WEM scenario are projected for CO_2 and CH_4 emissions: 60.2 and 56.0 per cent between 1990 and 2020, respectively. For 2030, the pattern of emission reductions by gas remains the same as for 2020, with the most significant reductions being projected for CO_2 and CH_4 emissions: 63.5 and 60.9 per cent, respectively, between 1990 and 2030.

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

(d) Assessment of adherence to the reporting guidelines

71. The ERT assessed the information reported in the BR4 of Romania and identified issues relating to completeness and transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 12.

Table 12
Findings on greenhouse gas emission projections reported in the fourth biennial report of Romania

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement[a] specified in paragraph 28 Issue type: transparency Assessment: recommendation	The Party reported projections on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions in CTF tables 6(a), 6(b) and 6(c) and for the additional years 2025, 2035 and 2040 in the main text of the BR4. The ERT noted that the WOM scenario for the energy sector in 2020 reported in CTF table 6(b) (108,314.40 kt CO_2 eq) can be estimated by adding the value in the WEM scenario reported in CTF table 6(a) (66,383.00 kt CO_2 eq) with the effects of PaMs for the energy and transport sectors reported in CTF table 3 for the same year (41,931.40 kt CO_2 eq). The ERT considers this to be consistent. However, the ERT noted inconsistencies in the resulting values for the WOM scenario in 2030. When adding the value in the WEM scenario reported in CTF table 6(a) (60,941.57 kt CO_2 eq) with the effects of PaMs for the energy and transport sectors reported in CTF table 3 for the same year (55,701.57 kt CO_2 eq), it does not result in the value reported for the WOM scenario in CTF table 6(b)

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
		(112,294.10 kt CO_2 eq); the discrepancy for the energy sector is 4,349.04 kt CO_2 eq in 2030. A similar situation occurs for the IPPU sector in 2030, where the discrepancy is 88.39 kt CO_2 eq. During the review, Romania acknowledged the inconsistencies in the WOM scenario for 2030 reported in CTF table 6(b). It explained that the 2030 emissions for the energy and IPPU sectors in the WOM scenario should be corrected to 116,643.14 kt CO_2 eq and 21,452.36 kt CO_2 eq, respectively. The ERT recommends that Romania enhance the transparency of its reporting by correcting the 2030 projections for the energy and IPPU sectors in the WOM scenario.
2	Reporting requirement[a] specified in paragraph 35 Issue type: completeness Assessment: encouragement	The Party did not report projections for indirect GHG emissions in its BR4. During the review, Romania clarified that projections for indirect GHG emissions were reported in the National Air Pollution Control Programme, under Article 6 of EU directive 2016/2284 on national emissions ceilings. In addition, the air pollutants projections in the National Air Pollution Control Programme reported on 15 March 2019 do not consider the current PaMs included in the BR4. The ERT encourages Romania to report indirect GHG emission projections in its next submission.
3	Reporting requirement[a] specified in paragraph 36 Issue type: completeness Assessment: recommendation	The Party did not report emission projections related to fuel sold to ships and aircraft engaged in international transport separately and not included in the totals in its BR4. During the review, Romania confirmed that emission projections from international transport were not included in the BR4. The ERT recommends that Romania increase the completeness of its reporting by estimating and reporting separately, to the extent possible, the emission projections related to fuel sold to ships and aircraft engaged in international transport, and not included in the totals.
4	Reporting requirement[a] specified in paragraph 38 Issue type: completeness Assessment: encouragement	In its BR4, Romania reported diagrams illustrating total GHG emissions and trends; however, diagrams showing unadjusted inventory data and a WEM projection were not included. During the review, Romania provided additional illustrations that facilitated the understanding of the WEM, WAM and WOM scenario projections. The ERT encourages Romania to include diagrams illustrating the information on projections, showing unadjusted inventory data and a WEM projection.
5	Reporting requirement[a] specified in paragraph 43 Issue type: completeness Assessment: encouragement	Romania did not report for each model or approach used in projections 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 approach used accounts for overlaps or synergies between different PaMs. During the review, Romania provided information on the use of two models, ELECTRIC (for electricity power plants) and BALANCE (for energy demand and supply), without specifying which gases the models were used for, the strengths and weaknesses of the models and how the models account for overlaps or synergies between different PaMs. The ERT encourages Romania to increase the completeness of its reporting by including information on the models and approaches used for projections, 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 approach used accounts for overlaps or synergies between different PaMs.
6	Reporting requirement[a] specified in paragraph 45 Issue type: completeness	Romania did not report on the main differences in the assumptions, methods employed and results between projections in the current and the previous submissions. During the review, Romania provided information on the energy sector projections, which were compiled on the basis of information from the Energy and

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
	Assessment: encouragement	Power Evaluation Programme package for the BR3 and NC7 and based on data provided by the National Commission for Strategy and Prognosis for the BR4. No information on other sectors was provided by Romania. The ERT encourages Romania to improve completeness by reporting on the main differences in the assumptions, methods employed and results between projections in the current and the previous submissions.
7	Reporting requirement[a] specified in paragraph 46 Issue type: transparency Assessment: encouragement	Romania reported a sensitivity analysis focusing on the energy sector but did not report a sensitivity analysis for projections in other sectors. During the review, the Party explained that the sensitivity analysis for specific LULUCF categories was not reported because the newly formed team for managing the reporting obligations in this sector focused its efforts on activities related to estimating emissions and removals, projections and reporting PaMs at the national level. The Party stated that the sensitivity analysis for the LULUCF sector will be included in its next BR submission. The ERT encourages Romania to increase the transparency of its reporting by including a sensitivity analysis for other sectors and to discuss qualitatively and, where possible, quantitatively, the sensitivity of the projections to underlying assumptions.
8	Reporting requirement[a] specified in paragraph 47 Issue type: transparency Assessment: encouragement	The Party reported information on key variables (GDP growth rate, population growth, international oil, coal and gas prices) for the WEM scenario in its BR4 and CTF table 5. However, historical data on oil, coal and gas prices were reported as "NA", without an explanation of the use of the notation key. During the review, Romania stated that the use of the notation key "NA" to report historical information for oil, coal and gas prices is appropriate and there is no need to report historical values. The ERT encourages Romania to enhance the transparency of its reporting by explaining the use of the notation key "NA" in its reporting on historical information on oil, coal and gas prices used in the projection analysis in CTF table 5.
9	Reporting requirement[b] specified in paragraph 12 Issue type: transparency Assessment: encouragement	The Party did not report information on the changes made to the model or methodologies used for the preparation of projections since its most recent NC. During the review, Romania provided information on the changes made regarding the energy sector projections, which were compiled on the basis of information from the Energy and Power Evaluation Programme package developed by the Argonne National Laboratory of the United States Department of Energy and distributed to Romania by the International Atomic Energy Agency for the BR3 and NC7. For the BR4, the data were provided by the National Commission for Strategy and Prognosis. Romania explained that for the BR4 two new models were used: ELECTRIC (for electricity power plants) and BALANCE (for energy demand and supply). The ERT encourages Romania to provide information on the main changes to models or methodologies used for projections since the most recent NC. The ERT notes that this information could include, where appropriate, references to external supporting documentation.

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

[a] 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.

[b] Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs.

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

72. 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 BR4 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 BRs.

73. Romania contributed USD 5,588,633.08 to specialized United Nations bodies in 2018, including the United Nations Environment Programme, the United Nations Economic Commission for Europe and other United Nations institutions, and USD 325,404.21 in 2017 (of which 95.5 per cent was for climate-specific projects) to multilateral climate change funds and specialized United Nations bodies. Romania reported in the BR4 that no technology or capacity-building support was provided to developing country Parties in 2017 and 2018.

III. Conclusions and recommendations

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

75. Romania's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 53.2 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 60.0 per cent below its 1990 level, in 2018. Emissions decreased sharply between 1990 and 1993 (–26.6 per cent) due to the decline in economic activity in energy-intensive industries during the transition to a market-based economy. Between 1996 and 2000, emissions decreased by 24.5 per cent, mainly due to a change in the energy mix; a nuclear power plant started operation in 1996 contributing about 10.0 per cent of total electricity production during that period. In 2008–2010, emissions decreased significantly (–17.2 per cent) as a result of the decline in economic activity due to the global financial crisis. During the economic recovery after 2010, Romania's GHG emissions decreased slightly by 6.5 per cent between 2010 and 2018, with a notable increase in electricity being generated by wind power plants (from about 0.5 to 11.0 per cent of total electricity generation).

76. 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_2, CH_4, N_2O, HFCs, PFCs and SF_6, expressed using GWP values from the AR4. Emissions and removals from the LULUCF sector are not included.

77. Under the ESD Romania has a target of limiting its emission growth to 19 per cent above the 2005 level by 2020. The 2013–2020 progression in Romania's AEAs (its national emission target under the ESD) is 75,630.01–89,809.45 kt CO_2 eq.

78. The EU's joint targets under the EU ETS and ESR are to reduce emissions by 2030 by 43 and 30 per cent, respectively, compared with the 2005 level. Under the ESR, Romania has a national target of reducing emissions from the covered sectors to 2 per cent below the 2005 level by 2030.

79. In 2018 Romania's ESD emissions were 9.7 per cent (8,334.03 kt CO_2 eq) below the AEA. Romania has a cumulative surplus of 37,552.07 kt CO_2 eq with respect to its AEAs and does not intend to use international market-based mechanisms in achieving its emission reduction target. The ERT noted that Romania is making progress towards its ESD target by implementing mitigation actions that are delivering emission reductions.

80. The GHG emission projections provided by Romania in its BR4 correspond to the WOM, WEM and WAM scenarios. Under these scenarios, emissions are projected to be 36.4, 57.5 and 57.9 per cent below the 1990 level by 2020, respectively. According to the projections under the WEM scenario, ESD emissions are estimated to reach 73,189.99 kt CO_2 eq by 2020. Under the WAM scenario, Romania's ESD emissions in 2020 are projected to be 72,271.35 kt CO_2 eq. The projected level of emissions under the WEM and WAM

scenarios is 18.5 and 19.5 per cent below the AEAs for 2020, respectively, which suggests that Romania expects to meet its target under the WEM and WAM scenarios.

81. Romania's main policy framework relating to energy and climate change is the National Climate Change and Low Carbon Green Growth Strategy. In addition, the National Action Plan for Implementation of the National Climate Change and Low Carbon Green Growth Strategy for 2016–2020 provides the framework for Romania's climate policy and for Romania to meet its emission reduction target for 2020. The strategy and action plan are to be seen as a programmatic document for 2020–2030, including the road map for 2050.

82. For 2013–2020 the National Climate Change and Low Carbon Green Growth Strategy includes Romania's commitments for 2020 under the EU. Such commitments include not exceeding the AEA for ESD emissions, implementing the EU ETS legislation, increasing the share of renewable energy in final energy consumption to 24 per cent and reducing the primary energy consumption by 19 per cent in relation to a 'business as usual' scenario. The total mitigation effect of PaMs in the sectoral group combustion in energy industry and manufacturing and construction industry is the most significant (53.4 per cent of total emission reductions in the WEM scenario in 2020). Other policies that are expected to have delivered significant emission reductions by 2020 are to be found in the sectoral groups fugitive emissions (17.3 per cent of total emission reductions in the WEM scenario) and IPPU (12.0 per cent of total emission reductions in the WEM scenario).

83. For 2021–2030 the achievement of the EU objectives and targets is ensured through a combination of EU initiatives and national policies set out in the NECP, which in Romania includes two main PaMs/strategies: the National Energy Strategy for 2019–2030, with the perspective of 2050, and the National Long-term Renovation Strategy to support the renovation of the national stock of residential and non-residential buildings, both public and private, into a highly energy-efficient and decarbonized building stock by 2030.

84. 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 on its provision of support to developing country Parties. Romania contributed USD 5,588,633.08 to specialized United Nations bodies in 2018, including the United Nations Environment Programme, the United Nations Economic Commission for Europe and other United Nations institutions, and USD 325,404.21 in 2017 to multilateral climate change funds and specialized United Nations bodies. Romania reported in the BR4 that no technology or capacity-building support was provided to developing country Parties in 2017 and 2018.

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

(a) To improve the completeness of its reporting by estimating and reporting separately, to the extent possible, the emission projections related to fuel sold to ships and aircraft engaged in international transport, and not included in the totals (see issue 3 in table 12);

(b) To improve the transparency of its reporting by:

(i) Further elaborating on the changes in national institutional arrangements by providing summary information on changes to the national GHG inventory arrangements for the LULUCF sector since the previous BR (see issue 1 in table 3);

(ii) Correctly reporting the description of its quantified economy-wide emission reduction target, specifying that NF_3 and the LULUCF sector as not included in the quantified economy-wide emission reduction target in CTF table 2(b) (e.g. using a notation key and/or providing relevant explanations as appropriate in a footnote to CTF table 2(b)) and that Romania does not intend to use international market-based mechanisms to achieve its quantified economy-wide emission reduction target (see issue 1 in table 4);

(iii) Ensuring consistency between the names of the PaMs described in the textual part of the BR and in CTF table 3 and by including all relevant PaMs reported in the previous BR that are still operational (see issue 1 in table 6);

(iv) Clearly explaining the changes since its last BR to its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target (issue 2 in table 6);

(v) Correctly reporting the status of implementation of PaMs in the BR and in CTF table 3 in accordance with the definitions provided in the UNFCCC reporting guidelines on NCs and by providing any explanations as necessary; and including required information in CTF table 3 (e.g. objective, type, status, start year and estimates of the impacts of mitigation actions) for all reported mitigation actions and, if information cannot be provided on all mitigation impacts, Romania should clearly explain why this is not possible due to its national circumstances (see issue 3 in table 6);

(vi) Excluding information on the LULUCF sector from CTF table 4(a)II given that emissions/removals from this sector are not included in the quantified economy-wide emission reduction target of the EU and its member States (see issue 1 in table 8);

(vii) Correcting the 2030 projections for the energy and IPPU sectors in the WOM scenario (issue 1 in table 12).

Annex

Documents and information used during the review

A. Reference documents

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

2020 GHG inventory submission of Romania. Available at https://unfccc.int/ghg-inventories-annex-i-parties/2020.

BR3 of Romania. Available at https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports-annex-i-parties/biennial-report-submissions/third-biennial-reports-annex-i.

BR4 of the EU. Available at https://unfccc.int/BRs.

BR4 of Romania. Available at https://unfccc.int/BRs.

BR4 CTF tables of Romania. Available at https://unfccc.int/BRs.

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

European Union transaction log. Available at https://ec.europa.eu/clima/ets/.

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

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

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

"Information by developed country Parties, as part of the process of clarifying the developed country Parties' quantified economy-wide emission reduction targets contained in document FCCC/SB/2011/INF.1/Rev.1, using a common template". Submission from Denmark and the European Commission on behalf of the EU and its member States contained in document FCCC/AWGLCA/2012/MISC.1. Available at http://unfccc.int/resource/docs/2012/awglca15/eng/misc01.pdf.

NECP of Romania. Available at https://ec.europa.eu/energy/sites/ener/files/documents/ro_final_necp_main_en.pdf.

Report on the individual review of the annual submission of Romania submitted in 2018. FCCC/ARR/2018/ROU. Available at https://unfccc.int/sites/default/files/resource/arr2018_ROU.pdf.

Report on the technical review of the BR3 of Romania. FCCC/TRR.3/ROU. Available at https://unfccc.int/sites/default/files/resource/trr.3_ROU.pdf.

"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 Nicodim (Ministry of Environment, Water and Forests of Romania), including additional material.